

Occasional Papers of the Florida State Collection of Arthropods

Volume 12 – 2019

**A Taxonomic Monograph of the  
Bark and Ambrosia Beetles  
of the West Indies  
(Coleoptera: Curculionoidea: Scolytidae)**

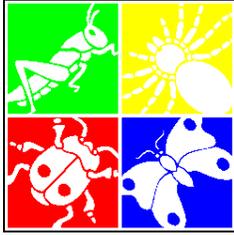
by

**Donald E. Bright**



Florida Department of Agriculture and Consumer Services

Division of Plant Industry



# Occasional Papers of the Florida State Collection of Arthropods

The **Occasional Papers of the Florida State Collection of Arthropods** (FSCA) is an irregular series of larger works published by the Florida Department of Agriculture and Consumer Services – Division of Plant Industry (FDACS-DPI). The series focuses on non-marine arthropods covering topics such as systematic revisions, taxonomy, nomenclature, faunal works, natural history, catalogues, checklists, etc. Typically, these are works resulting from use of museum specimens. The *Occasional Papers* will not consider works in the applied sciences (i.e. medical entomology, pest control research, etc.). The *Occasional Papers* publishes original research with a limited printing. Printed copies are deposited in collaborating libraries and are available from FDACS-DPI while supplies last. The original PDF of the work will be posted in a free openly accessible manner on the internet when printed supplies are depleted. The electronic version is archived through Portico, compliments of the Center for Systematic Entomology, Inc.

A purpose of the *Occasional Papers* series is to highlight research by the staff and Research Associates of the Florida State Collection of Arthropods with museum-based products of interest to the community at large.

**Potential authors** are required to contact the Editorial Committee prior to submission to discuss details of manuscript preparation and funding of the publication. Works considered should be over 50 finished pages. General preparation guidelines and author instructions will follow those of the journal *Insecta Mundi*. Submissions must be peer reviewed prior to final submission by at least two qualified reviewers, and those reviews will be submitted for consideration by the Editorial Committee.

Editor:	Paul E. Skelley	Paul.Skelley(at)FreshFromFlorida.com
Editorial Committee:	Gary Steck	Gary.Steck(at)FreshFromFlorida.com
	Felipe Soto-Adames	Felipe.Soto-Adames(at)FreshFromFlorida.com

Layout: Michael C. Thomas

Technical Assistance: Christina Bunch, Shelby Oesterreicher, Kara Davis

**Cover:** Anterior view of a female head of *Dendrosinus bourreriae* Schwarz, 1920. Photo courtesy Andrew Johnson, Forest Entomology, School of Forest Resources and Conservation, University of Florida.

OCCASIONAL PAPERS OF THE  
FLORIDA STATE COLLECTION OF ARTHROPODS  
Volume 12

**A Taxonomic Monograph of the  
Bark and Ambrosia Beetles  
of the West Indies  
(Coleoptera: Curculionoidea: Scolytidae)**

**Studies on West Indian Scolytidae (Coleoptera) 7**

By

**Donald E. Bright**

C. P. Gillette Museum of Arthropod Diversity  
Department of Bioagricultural Sciences and Pest Management  
Colorado State University  
Fort Collins, Colorado 80523  
email: [dbright@mail.colostate.edu](mailto:dbright@mail.colostate.edu)

**2019**

Published by  
Florida State Department of Agriculture and Consumer Services  
Division of Plant Industry  
Florida State Collection of Arthropods  
1911 SW 34<sup>th</sup> Street  
Gainesville, Florida, 32608 USA

Donald E. Bright. 2019.

A Taxonomic Monograph of the Bark and Ambrosia Beetles of the West Indies  
(Coleoptera: Curculionoidea: Scolytidae).  
Studies on West Indian Scolytidae (Coleoptera) 7.

Occasional Papers of the Florida State Collection of Arthropods 12: 1-491

ZooBank Registration:

urn:lsid:zoobank.org:pub:B0C364A0-DF47-477F-9AE0-E39ABE1D0901

Date of Issue: January 30, 2019

ISSN: 0885-5943

PDF archived by Portico

Copyright held by the  
Florida Department of Agriculture and Consumer Services  
Division of Plant Industry

## TABLE OF CONTENTS

ABSTRACT .....	vii
ACKNOWLEDGMENTS .....	ix
AUTHOR BIOGRAPHY .....	x
INTRODUCTION .....	1
ZOOGEOGRAPHY OF THE WEST INDIES .....	2
HISTORY .....	3
METHODS .....	4
TAXONOMIC CONSIDERATIONS .....	7
KEY TO SUBFAMILIES OF SCOLYTIDAE IN THE WEST INDIES .....	7
SUBFAMILY SCOLYTINAE .....	8
KEY TO THE GENERA OF WEST INDIAN SCOLYTINAE .....	8
TRIBE SCOLYTINI .....	9
Genus <i>Loganius</i> Chapuis .....	9
Genus <i>Scolytopsis</i> Blandford .....	12
Genus <i>Scolytus</i> Geoffroy .....	13
SUBFAMILY HYLESININAE .....	14
KEY TO THE TRIBES AND GENERA OF WEST INDIAN HYLESININAE .....	14
TRIBE PHRIXOSOMATINI .....	16
Genus <i>Phrixosoma</i> Blandford .....	16
TRIBE HYLASTINI .....	18
Genus <i>Hylastes</i> Erichson .....	18
TRIBE HYLESININI .....	20
Genus <i>Phloeoborus</i> Erichson .....	20
TRIBE BOTHROSTERNINI .....	21
Genus <i>Bothrosternus</i> Eichhoff .....	21
Genus <i>Cnesinus</i> LeConte .....	22
Genus <i>Pagiocerus</i> Eichhoff .....	29
Genus <i>Sternobothrus</i> Eggers .....	30
TRIBE PHLOEOTRIBINI .....	32
Genus <i>Phloeotribus</i> Latreille .....	32
TRIBE TOMICINI .....	36
Genus <i>Dendroctonus</i> Erichson .....	36

TRIBE PHLOEOSININI .....	36
Genus <i>Chramesus</i> LeConte .....	36
Genus <i>Cladoctonus</i> Strohmeier .....	44
Genus <i>Dendrosinus</i> Chapuis .....	51
Genus <i>Phloeosinus</i> Chapuis .....	52
TRIBE HYPOBORINI .....	53
Genus <i>Chaetophloeus</i> LeConte .....	53
Genus <i>Liparthrum</i> Wollaston .....	65
Genus <i>Trypanophellos</i> Bright .....	67
SUBFAMILY MICRACIDINAE .....	70
KEY TO THE GENERA OF WEST INDIAN MICRACIDINAE .....	70
TRIBE MICRACIDINI .....	71
Genus <i>Hylocurus</i> Eichhoff .....	71
Genus <i>Micracis</i> LeConte .....	80
Genus <i>Micracisella</i> Blackman .....	81
Genus <i>Parathysanoes</i> Bright .....	82
Genus <i>Pseudothysanoes</i> Blackman .....	83
Genus <i>Steveoodia</i> Bright .....	100
SUBFAMILY CRYPHALINAE .....	103
KEY TO THE GENERA OF WEST INDIAN CRYPHALINAE .....	103
TRIBE CRYPHALINI .....	105
Genus <i>Allothenemus</i> Bright .....	105
Genus <i>Atomothenus</i> Bright .....	106
Genus <i>Cryptocarenum</i> Eggers .....	107
Genus <i>Hypocryphalus</i> Hopkins .....	112
Genus <i>Hypothenemus</i> Westwood .....	113
Genus <i>Microsomus</i> Bright .....	178
Genus <i>Pygmaeoborus</i> Bright .....	178
Genus <i>Scolytogenes</i> Eichhoff .....	179
Genus <i>Stegomerus</i> Wood .....	181
Genus <i>Trypolepis</i> Bright .....	182
SUBFAMILY HEXACOLINAE .....	183
KEY TO THE GENERA OF WEST INDIAN HEXACOLINAE .....	183
TRIBE HEXACOLINI .....	183

Genus <i>Gymnochilus</i> Eichhoff .....	183
Genus <i>Microborus</i> Blandford .....	184
Genus <i>Pseudohexacolus</i> Bright .....	190
Genus <i>Pycnarthrum</i> Eichhoff .....	191
Genus <i>Scolytodes</i> Ferrari .....	194
SUBFAMILY CRYPTURGINAE .....	219
TRIBE CRYPTURGINI .....	219
Genus <i>Crypturgus</i> Erichson .....	219
SUBFAMILY IPINAE .....	220
KEY TO THE TRIBES AND GENERA OF WEST INDIAN IPINAE .....	220
TRIBE IPINI .....	222
Genus <i>Acanthotomicus</i> Blandford .....	222
Genus <i>Ips</i> DeGeer .....	223
Genus <i>Orthotomicus</i> Ferrari .....	227
TRIBE DRYOCOETINI .....	228
Genus <i>Coccotrypes</i> Eichhoff .....	228
Genus <i>Dendrocranulus</i> Schedl .....	240
Genus <i>Minyotrypetes</i> Bright .....	247
Genus <i>Neocultus</i> Bright .....	248
TRIBE PREMNOBINII .....	249
Genus <i>Premnobius</i> Eichhoff .....	249
TRIBE XYLEBORINI .....	251
Genus <i>Ambrosiodmus</i> Hopkins .....	251
Genus <i>Cnestus</i> Sampson .....	257
Genus <i>Coptoborus</i> Hopkins .....	258
Genus <i>Dryocoetoides</i> Hopkins .....	259
Genus <i>Euwallacea</i> Hopkins .....	262
Genus <i>Sampsonius</i> Eggers .....	270
Genus <i>Theoborus</i> Hopkins .....	271
Genus <i>Xyleborinus</i> Reitter .....	277
Genus <i>Xyleborus</i> Eichhoff .....	285
Genus <i>Xylosandrus</i> Reitter .....	306
SUBFAMILY CORTHYLINAE .....	310
KEY TO THE TRIBES AND GENERA OF WEST INDIAN CORTHYLINAE .....	311

TRIBE PITYOPHTHORINI .....	313
Genus <i>Araptus</i> Eichhoff .....	313
Genus <i>Conophthorus</i> Hopkins .....	340
Genus <i>Gnatholeptus</i> Eichhoff .....	342
Genus <i>Gnathoraptus</i> Bright .....	345
Genus <i>Pityoborus</i> Blackman .....	347
Genus <i>Pityophthorus</i> Eichhoff .....	348
Genus <i>Pseudopityophthorus</i> Swaine .....	392
Genus <i>Sphenoceros</i> Schedl .....	394
TRIBE CORTHYLINI .....	395
Genus <i>Amphicranus</i> Erichson .....	395
Genus <i>Corthylocurus</i> Wood .....	397
Genus <i>Corthylus</i> Erichson .....	398
Genus <i>Gnathotrichus</i> Eichhoff .....	408
Genus <i>Gnathotrupes</i> Schedl .....	410
Genus <i>Microcorthylus</i> Ferrari .....	411
Genus <i>Monarthrum</i> Kirsch .....	414
Genus <i>Tricolus</i> Blandford .....	422
LITERATURE CITED .....	429
PLATES .....	439
APPENDIX 1: SPECIES OMITTED FROM WEST INDIAN FAUNA .....	471
APPENDIX 2: TABLE OF WEST INDIAN SPECIES AND DISTRIBUTION .....	473
INDEX .....	485

## ABSTRACT

The bark beetle fauna (Coleoptera: Scolytidae) of the West Indies is reviewed. Keys to the subfamilies, tribes, genera and species of the West Indies are presented. Three hundred and eighty-six species in 74 genera are included. **New Genera** (9): *Atomothenus*, type species *A. unicus* Bright; *Gnathoraptus*, type species *G. mandibularis* Bright; *Microsomus*, type species *M. atomus* Bright; *Minyotrypetes*, type species *M. primus* Bright; *Neocultus*, type species *N. thomasi* Bright; *Parathysanoes*, type species *P. absonus* Bright; *Pseudohexacolus*, type species *P. singularis* Bright; *Pygmaeoborus*, type species *P. cubensis* Bright and *Trypolepis*, type species *T. antillicum* Bright.

**New Species** (195): **Phrixosomatini**: *Phrixosoma antillicum* (Saba, St. Vincent, St. Lucia). **Bothrosternini**: *Cnesinus amplus* (Dominican Republic) and *Cnesinus brevisetosus* (Montserrat). **Phloeotribini**: *Phloeotribus caymanensis* (Cayman Brac). **Phloeosinini**: *Chramesus lepidotus* (Grenada); *Chramesus maieri* (St. Lucia); *Chramesus palearis* (St. Croix in U. S. Virgin Islands); *Chramesus scabiosus* (St. Lucia, Union Island in St. Vincent and the Grenadines, Martinique, Guadeloupe); *Chramesus squamosus* (Montserrat); *Cladoctonus minor* (Guana Island in the British Virgin Islands, St. John in the U. S. Virgin Islands); *Cladoctonus peckorum* (Union Island in St. Vincent and the Grenadines, St. Vincent); *Cladoctonus torosus* (Grenada, Jamaica) and *Cladoctonus tuberosus* (St. Lucia, Dominica). **Hypoborini**: *Chaetophloeus bahamaensis* (Eleuthera Island in the Bahamas); *Chaetophloeus longisetum* (Jamaica); *Chaetophloeus minutus* (Puerto Rico, Grenada); *Chaetophloeus montanus* (Dominican Republic); *Chaetophloeus woodruffi* (Dominican Republic); *Liparthrum caymanensis* (Grand Cayman and Little Cayman in the Cayman Islands); *Liparthrum turnbowi* (Andros Island in the Bahamas) and *Trypanophellos minutum* (Navassa Island). **Micracidini**: *Hylocurus absonus* (Martinique); *Hylocurus anomala* (Montserrat); *Hylocurus antillicus* (Guadeloupe, Martinique, St. Lucia); *Hylocurus torresi* (Puerto Rico); *Hylocurus touroulti* (Martinique); *Hylocurus tumidosus* (Guadeloupe, Martinique); *Parathysanoes absonus* (Buck Island and St. Thomas in the U. S. Virgin Islands, Dominican Republic, Dominica); *Pseudothysanoes absonus* (Guadeloupe); *Pseudothysanoes amoenus* (Dominican Republic); *Pseudothysanoes caribbeanensis* (Dominican Republic); *Pseudothysanoes cracentis* (Curaçao); *Pseudothysanoes granulatus* (St. John and St. Croix in the U. S. Virgin Islands); *Pseudothysanoes guadeloupensis* (Guadeloupe); *Pseudothysanoes incertissimus* (Dominican Republic); *Pseudothysanoes lautus* (Antigua, Guadeloupe, Montserrat); *Pseudothysanoes leptus* (Great Inagua Island in the Bahamas); *Pseudothysanoes marginatus* (Dominican Republic); *Pseudothysanoes masneri* (Dominican Republic); *Pseudothysanoes minutissimus* (Montserrat); *Pseudothysanoes muricatus* (Dominican Republic); *Pseudothysanoes perexiguus* (Dominican Republic); *Pseudothysanoes smithi* (Cuba); *Pseudothysanoes trunculus* (Dominican Republic) and *Stevewoodia atomus* (Puerto Rico). **Cryphalini**: *Allothenemus exquisitus* (Dominican Republic); *Atomothenus unicus* (Dominican Republic); *Hypothenemus adustus* (Buck and St. John Islands in the U. S. Virgin Islands); *Hypothenemus bifurcatus* U. S. Virgin Islands; *Hypothenemus carinafrons* (Cayman Islands, Curaçao, St. Vincent); *Hypothenemus collinus* (Montserrat, St. Lucia); *Hypothenemus crinatus* (St. Thomas and St. John in the U. S. Virgin Islands); *Hypothenemus discordis* (Dominican Republic, St. Croix in the U. S. Virgin Islands); *Hypothenemus dubitalis* (Guadeloupe); *Hypothenemus exceptus* (Bahamas, Grand Cayman, Haiti, Montserrat, Mayreau Island in St. Vincent and the Grenadines, Redonda, St. John and St. Croix in the U. S. Virgin Islands and Bermuda); *Hypothenemus granulatus* (Curaçao); *Hypothenemus ignotus* (Barbados); *Hypothenemus improvidus* (Grenada, St. Lucia); *Hypothenemus indistinctus* (Jamaica); *Hypothenemus inordinatus* (Cayman Islands); *Hypothenemus leptosquamus* (Curaçao); *Hypothenemus liliputianus* (Guadeloupe); *Hypothenemus nanoparvus* (Grenada, St. Lucia, St. Croix and St. John in the U. S. Virgin Islands); *Hypothenemus nesiotus* (Dominican Republic, Guadeloupe, Guana Island in the British Virgin Islands, St. Thomas in the U. S. Virgin Islands); *Hypothenemus obscurifrons* (Puerto Rico); *Hypothenemus parasquamosus* (Barbados); *Hypothenemus parvulus* (Puerto Rico, Saba, St. Lucia); *Hypothenemus paulus* (Martinique); *Hypothenemus perexiguus* (Bahamas, Cuba, Martinique, Puerto Rico, St. Croix and St. John in the U. S. Virgin Islands); *Hypothenemus ponticus* (Curaçao); *Hypothenemus pygmaeomorphus* (Martinique); *Hypothenemus rubrithorax* (Saba); *Hypothenemus setiferous* (Montserrat); *Hypothenemus solivagus* (Barbados); *Hypothenemus tectus* (Martinique); *Hypothenemus turnbowi* (Bahamas); *Hypothenemus ustulatus* (Grenada, Martinique); *Hypothenemus vernaculus* (Curaçao); *Hypothenemus versicolor* (St. Lucia); *Hypothenemus villosus* (St. Eustatius); *Microsomus atomus* (St. Croix in the U. S. Virgin Islands); *Pygmaeoborus cubensis* (Cuba); *Stegomerus diversus* (Puerto Rico) and *Trypolepis antillicum* (Grenada). **Hexacolini**: *Microborus caymanensis* (Cayman Islands); *Microborus iviei* (Dominica, Montserrat, Saba); *Microborus rawlini* (Dominican Republic); *Pseudohexacolus singularis* (Guadeloupe); *Scolytodes anthracinus* (Puerto Rico); *Scolytodes aquilus* (St. Vincent); *Scolytodes aridus* (Puerto Rico); *Scolytodes atomus* (Guadeloupe, Martinique); *Scolytodes bellus* (Dominican Republic); *Scolytodes iviei* (Antigua, Guadeloupe, Montserrat, St. Kitts-Nevis); *Scolytodes longisetum* (Mona Island); *Scolytodes obtusiceps* (Dominica); *Scolytodes peckorum* (Grenada, St. Vincent); *Scolytodes pleisopolitus* (Guadeloupe); *Scolytodes politus* (St. Vincent); *Scolytodes sabaensis* (Saba); *Scolytodes steineri* (Grand Cayman) and *Scolytodes torresi* (Cuba). **Dryocoetini**: *Coccotrypes incertus* (Barbados, Dominica, Guadeloupe); *Coccotrypes precarius* (Barbados, Dominica, Guadeloupe, Puerto Rico); *Dendrocranulus ambiguus* (Haiti, Dominican Republic); *Dendrocranulus barbatulus* (Grenada); *Dendrocranulus caymanensis* (Cayman Islands); *Dendrocranulus convexus* (Jamaica); *Dendrocranulus fulgens* (Martinique, Montserrat); *Dendrocranulus hispaniolus*

(Haiti); *Minyotrypetes primus* (Curaçao) and *Neocultus thomasi* (Curaçao). **Xyleborini:** *Ambrosiodmus infidelis* (Dominican Republic); *Euwallacea fulgidus* (Dominica); *Euwallacea innovatus* (St. Lucia); *Xyleborinus echinatus* (St. Lucia); *Xyleborus advena* (Puerto Rico); *Xyleborus anthracinus* (Cuba); *Xyleborus disjunctus* (Puerto Rico) and *Xylosandrus cubensis* (Cuba). **Pityophthorini:** *Araptus adustus* (Jamaica); *Araptus becheri* (Jamaica); *Araptus bituberculatus* (Puerto Rico); *Araptus caperatus* (Cuba); *Araptus ciseruditus* (Dominican Republic); *Araptus culmenifrons* (Cayman Islands); *Araptus ferrugineus* (Guadeloupe); *Araptus fuscus* (Dominican Republic); *Araptus grenadaensis* (Grenada); *Araptus howdeni* (Jamaica); *Araptus incolus* (Grenada); *Araptus ineditus* (Dominica, Dominican Republic, Montserrat, Puerto Rico); *Araptus insulanus* (Curaçao); *Araptus melanurus* (Grenada); *Araptus nigriculus* (Cuba, Dominican Republic); *Araptus squamosus* (Dominica, Martinique, St. Vincent); *Araptus turnbowi* (Dominican Republic); *Araptus ustulatus* (Grenada); *Araptus wintoni* (St. Lucia); *Conophthorus insulatus* (Dominican Republic); *Gnatholeptus concinnus* (Dominican Republic); *Gnatholeptus hispanicus* (Dominican Republic); *Gnatholeptus insularis* (Martinique); *Gnathoraptus mandibularis* (Grenada); *Pityophthorus acolus* (Puerto Rico); *Pityophthorus astringens* (St. Lucia); *Pityophthorus auspicatus* (Dominican Republic); *Pityophthorus bigranulatus* (Puerto Rico); *Pityophthorus capillosus* (Puerto Rico); *Pityophthorus confusus sequestus* (**new subspecies**); *Pityophthorus congruus* (Dominican Republic); *Pityophthorus convexus* (Jamaica); *Pityophthorus dissidens* (Jamaica); *Pityophthorus eccentricus* (Cuba); *Pityophthorus favorabilis* (Dominican Republic, Haiti); *Pityophthorus foleyi* (St. Lucia); *Pityophthorus gimmeli* (St. Lucia); *Pityophthorus gratus* (Dominican Republic); *Pityophthorus grenadacolens* (Grenada); *Pityophthorus illuminus* (Dominican Republic); *Pityophthorus insulatus* St. Croix, St. John and St. Thomas in the U. S. Virgin Islands); *Pityophthorus inusitatus* (Martinique); *Pityophthorus masneri* (Dominican Republic); *Pityophthorus minutissimus* (Saba in the Netherlands Antilles and St. Lucia); *Pityophthorus nesocolus* (Puerto Rico); *Pityophthorus pauculus* (Montserrat); *Pityophthorus procerus* (Cuba); *Pityophthorus rogueti* (Martinique); *Pityophthorus senticosus* (Dominican Republic); *Pityophthorus sepositus* (Cayman Islands); *Pityophthorus subtilus* (Dominican Republic); *Pityophthorus tomentosus* (St. Lucia); *Pityophthorus torresi* (Puerto Rico); *Pityophthorus vulgaris* (St. Lucia); *Pityophthorus youngi* (Dominican Republic); *Sphenoceros antillicus* (Dominican Republic, Martinique, St. Lucia) and *Pseudopityophthorus absitus* (Dominica, Guadeloupe). **Corthylini:** *Amphicranus hispaniolus* (Dominican Republic); *Amphicranus taino* (Dominican Republic); *Corthylus alpestris* (Dominican Republic); *Corthylus monticellus* (Dominican Republic, Haiti); *Corthylus reticulatus* (St. Lucia); *Corthylus versicolor* (Dominican Republic); *Gnathotrichus hispaniolus* (Dominican Republic, Haiti); *Gnathotrupes megapunctatus* (Dominican Republic, Grenada, Venezuela); *Microcorthylus insularis* (St. Lucia); *Monarthrum ambiguum* (Bahamas); *Monarthrum antillicum* (Dominica, Guadeloupe, Montserrat); *Monarthrum bullatum* (Dominican Republic); *Monarthrum collinum* (Dominican Republic); *Monarthrum discordum* (Guadeloupe); *Monarthrum ferrugineum* (St. Lucia); *Tricolus animatus* (Dominican Republic); *Tricolus endemos* (St. Lucia, St. Vincent) and *Tricolus incomptus* (Dominican Republic).

**New Generic Synonymy** (1, synonym in parenthesis): *Hypothenemus* Westwood 1834 (= *Trischidias* Hopkins 1915). **New Species Synonymy** (25, synonym in parenthesis): *Xyleborus hagedorni* Iglesias 1914 (= *Ambrosiodmus lecontei* Hopkins 1915); *Pityophthorus obliquus* LeConte 1878 (= *Ambrosiodmus klapperichi* Bright 1985); *Hypothenemus eruditus* Westwood 1834 (= *Bostrichus plumeriae* Nördlinger 1856); *Chramesus opacicollis* Eggers 1940 (= *C. robustus* Schedl 1949); *Bostrichus carphophagus* Hornung 1842 (= *Coccotrypes pubescens* Schedl 1949); *Hexacolus glaber* Eichhoff 1868 (= *Erineophilus schwarzi* Hopkins 1902); *H. notatus* Eggers 1940 (= *H. discedens* Eggers 1940 and *H. insularis* Schedl 1952); *H. pseudobicolor* Eggers 1940 (= *H. ovalis* Eggers 1940 and *H. longicollis* Eggers 1951); *Hylodorus quadriporus* Blackman 1928 (= *H. cuspidatus* Eggers 1951); *Stephanoderes interstitialis* Hopkins 1915 (= *Hypothenemus ceibae* Hopkins 1915); *Stephanoderes fuscicollis* Eichhoff 1878 (= *Hypothenemus comosus* Bright 1972); *Stephanoderes africanus* Hopkins 1915 (= *Hypothenemus concavifrons* Bright and Torres 2006); *Stephanoderes opacus* Eichhoff 1868 (= *Hypothenemus dolosus* Wood 1974); *Stephanoderes glabratulus* Schedl 1957 (= *Hypothenemus parvistriatus* Wood 2007); *Neopityophthorus laevis* Schedl 1938 (= *Pityophthorides pudens* Blackman 1942 and *Pityophthorus formosus* Bright 1972); *Pityophthorus subcentralis* Schedl 1938 (= *P. hispaniolus* Bright 1985); *Stephanoderes javanus* Eggers 1908 (= *S. brunneus* Hopkins 1915); *Tricolus gracilis* Eggers 1937 (= *T. perdiligens* Schedl 1950); *Xyleborus pubescens* Zimmermann 1868 (= *X. intrusus* Blandford 1898); *Euwallacea caraibicus* Eggers 1941 (= *Xyleborus novagrenadensis* Eggers 1941) and *Xylocleptes carbonarius* Ferrari 1867 (= *Xylocleptes guatemalensis* Hopkins 1915). **New Combinations:** (18): *Coptoborus bellus* Bright and Torres to *Theoborus*; *Corthylus pisinnus* Bright to *Corthylocurus*; *Neopityophthorus laevis* Schedl to *Pityophthorus*; *Trischidias exigua* Wood to *Hypothenemus*; *T. minutissima* Wood to *Hypothenemus*; *T. puertoricensis* Bright and Torres to *Hypothenemus*; *T. striata* Atkinson to *Hypothenemus*; *Xyleborus atlanticus* Bright and Torres to *Theoborus*; *X. beckeri* Bright to *Euwallacea*; *X. caraibicus* Eggers to *Euwallacea*; *X. elevatus* Eggers to *Euwallacea*; *X. howdenae* Bright to *Xyleborinus*; *X. jamaicensis* Bright to *Euwallacea*; *X. lepidus* Bright to *Cnestus*; *X. nuperus* Bright to *Ambrosiodmus* and *X. simulatus* Bright to *Euwallacea*. **Names Removed from Synonymy** (7): *Araptus guadeloupensis* (Schedl), *Phloeosinus neotropicus* Schedl, *Phloeotribus atlanticus* Schedl, *Scolytodes pseudobicolor* (Eggers), *Sphenoceros* Schedl, *Tryphanophellos* Bright and *Xyleborus jamaicensis* Bright. **Replacement Name (1):** *Hypothenemus woodi* Bright replacement name for *Hypothenemus minutissimus* (Wood).

**Key words.** Coleoptera, Scolytidae, West Indies, new species, new genera, distribution, taxonomy.

## ACKNOWLEDGMENTS

This project could not have been completed, or even contemplated, without the support and collaboration of numerous individuals who spent considerable amount of time and effort collecting in the West Indies and freely made available their specimens for my use. Among these are Robert Anderson, Edward Becker†, Stephen Gaimari, Matthew Gimmel, Henry † and Anne Howden†, Michael Ivie, Crystal Maier, Lubomere Masner, Charles and Lois O'Brian, Stewart Peck, Daniel Perez-Gelabert, Andrew Smith, Michael Thomas, Julien Touroult, Robert Turnbow, R. Winton and others. Natalia Vandenberg, David Furth and Daniel Perez-Gelabert arranged for loans from the USNM, Anthony Cognato provided specimens from the MSUC, Robert Woodruff, Michael Thomas and Paul Skelley provided specimens from the FSCA, John Rawlins provided specimens from the CMNH and Stewart Peck provided thousands of specimens from his personal collection which will be deposited in the CNCI and the CMNO.

The excellent habitus photographs were taken and edited by Joseph Benzel, graduate student, Department of Bioagricultural Sciences and Pest Management, Colorado State University. Dr. Todd Gilligan and Dr. Terrance Walters, USDA, Colorado State University arranged for the use of the photographic equipment. Additional photographs were taken by the author and were edited and prepared for publication by J. Benzel.

Type material was generously loaned by Helen Perrin (MNHN), Harold Schillhammer (NHMW) and Natalia Vandenberg (USNM). Additional support was provided by Boris Kondratieff, Professor, Department of Bioagricultural Sciences and Pest Management and Curator, C. P. Gillette Museum of Arthropod Diversity, Colorado State University, Fort Collins, CO for providing work space, computer access, literature acquisition and student help plus other valuable, but intangible, assistance.

A special note of appreciation is extended to Stewart Peck, Ottawa, ON and Michael Ivie, Bozeman, MT for agreeing to place their holotypes in the Canadian National Collection of Insects, Ottawa, ON where a large collection of West Indian Scolytidae is housed.

The entire manuscript was reviewed by Thomas Atkinson, Austin, TX and Robert Rabaglia, Washington D. C. Their efforts are especially appreciated and their comments greatly improved this monograph and prevented the author from making embarrassing mistakes. A special note of thanks is extended to Drs. Paul Skelley and Michael Thomas for their diligent editing and formatting of the manuscript prior to publication. Their efforts on my behalf is greatly appreciated.

## AUTHOR BIOGRAPHY



Donald Bright collecting on St. Lucia, July 2009  
(Photo courtesy D. Bright)

Dr. Donald E. Bright was born in Columbus, Ohio, but attended elementary and high school in Granite City, Illinois, USA. He received his B. Sc. degree in entomology from Colorado State University (Ft. Collins), his M. Sc. degree in zoology from Brigham Young University (Provo, Utah), and his Ph.D. degree in entomology from the University of California (Berkeley). He joined the Entomology Research Institute (Canadian National Collection of Insects, Arachnids and Nematodes) of the Research Branch of Agriculture Canada in 1966 and remained there under its various name changes until his retirement in 2003. He was responsible for research on the systematics of the beetle family Scolytidae, commonly known as bark beetles, which contains some of the most important forest pests in North America and was also responsible for research and identification of the beetle family Curculionidae or weevils, this family also contains numerous agricultural and forestry pest species. He provided identifications of these insects to various national and international organizations. Within his research organization he held several management positions, serving as a Section Head and Project Leader, and served on numerous committees. He was a member of the Entomological Society of Canada and served as Treasurer as well as a member of other various committees. He is also a member of the Entomological Society of America, the Coleopterists Society (served as Secretary and President and awarded Honorary Member in 2016), and the Wiener Coleopterologen Verein (Vienna). In 1991 he was a Visiting Researcher at the Institut für Forstentomologie, Universität für Bodenkulture, Wien, Austria, and in 1992 was Visiting Scholar at the University of California, Berkeley. He is the author of more than 100 research publications on the systematics of the Scolytidae and Curculionidae and is currently recognized as one of the leading world authority on the classification of the Scolytidae. Currently he is a Faculty Affiliate in the Department of Bioagricultural Sciences and Pest Management at Colorado State University, Fort Collins and is continuing his research on the systematics and biodiversity of the Scolytidae and Curculionidae. His interest in the West Indies fauna began with the effort to identify and curate a large collection of Scolytidae collected by H. F. Howden and E. C. Becker in 1966 in Jamaica. This study resulted in a paper on the Scolytidae of Jamaica published in 1972. Several additional papers were published, culminating in the present contribution.

## INTRODUCTION

The islands of the West Indies (Fig. 1) have been increasingly recognized as one of the world's 34 biodiversity "hotspots" (Myers et al. 2000; Myers 2003; Mittermeier et al. 2004b). This designation has been primarily based on well-known groups of organisms such as vascular plants, birds, terrestrial mammals, etc. Since most insect groups, except perhaps butterflies, are poorly documented, insects are not usually considered in these biodiversity analyses. However, insects, especially beetles, may constitute over 90% of the total fauna.

As a measure of the biological uniqueness and richness, Mittermeier et al. (2004a) estimate that 50% of the vascular plant species in the Caribbean Region are endemic. Likewise, 46% of the mammal species, 28% of the bird species, 94% of the reptile species, 99% of the amphibian species and 40% of the freshwater fish species are endemic to the region. At the generic level, endemism is evident in the vascular plants (205 of 2500 genera), mammals (15 of 57 genera), birds (35 of 205 genera), reptiles (8 of 46 genera), amphibians (1 of 7 genera) and freshwater fishes (5 of 67 genera). A similar pattern is displayed at the family level. The number of endemic genera totals 269, making the Caribbean Region second in the world in endemism, exceeded by Madagascar and the Indian Ocean islands.

Recently the insect (especially Coleoptera) fauna of the West Indies has received intensive attention. Peck and Perez-Gelabert (2012) have reviewed the endemic beetle genera of the West Indies. They tabulated 205 genera in 25 families as endemic. The families with endemic genera were the Cerambycidae (41), Chrysomelidae (28), Curculionidae (26) and the Staphylinidae (25). They further extrapolated the data to estimate that 700 genera of insects could be endemic to the West Indies. This figure greatly exceeds the total of 269 endemic genera of all plants and non-marine vertebrates and further demonstrates the biological richness of the insect fauna of the West Indies. It should be noted that most of the Coleoptera families have not been thoroughly reviewed for the Caribbean Region. When this is done, I would expect to see an even greater increase in the number of endemic West Indian genera and species.

Likewise, the fauna of the Scolytidae, or bark and ambrosia beetles, in the West Indies has received increased attention, primarily due to the collecting efforts of M. A. Ivie and his colleagues, S. B. Peck, R. H. Turnbow, M. C. Thomas, C. W. O'Brien, H. F. Howden †, R. E. Anderson, A. B. T. Smith, E. C. Becker †, and the team from the Carnegie Museum of Natural History lead by J. E. Rawlins and my personal collecting. The collections of these individuals (and numerous others) have greatly increased the amount of material that is available for critical examination. Over the past several decades, I have examined several large collections of Scolytidae from the West Indies. These collections provided a wealth of new information concerning the bark-beetle fauna of the West Indies and form the basis of this monograph. In 1972, Bright (1972) reviewed the bark-beetle fauna of Jamaica and in a series of subsequent papers Bright (1981a, 1982, 1985 and 2006 [with J. A. Torres]) recorded a number of new species, new distributions and other items of taxonomic or faunistic interest. A checklist of the West Indian species of Scolytidae was published (Bright 1985), listing 187 species. Some locality records were updated and/or corrected in the Catalog of World Scolytidae (Wood and Bright 1992) and in the three supplements of that catalog (Bright and Skidmore 1997, 2002; Bright 2014).

This is the first serious attempt to document the bark and ambrosia beetle fauna of the West Indies. This work, combined with Wood's 1982 monograph of the North and Central American Scolytidae and his 2007 monograph of the South American Scolytidae, will result in a complete monographic treatment of the entire New World scolytid fauna. To my knowledge, no other Coleoptera family can make the same claim. This is not to say that the fauna of the New World is adequately known. Much additional work is needed, but it is hoped that a solid foundation has been developed which will allow future workers to progress faster. I have attempted here to present a complete review of the West Indian fauna, including keys to genera, keys to species, a diagnosis of each genus and species and distributional data for each species. The present contribution treats 386 species of Scolytidae, slightly more than double the number of species recorded in 1985.

In comparison with the large islands of the Greater Antilles, Cuba is conspicuous by the paucity of records. Political difficulties have made collecting on the island difficult, if not impossible. A collecting trip by S. B. Peck in 1998 provided a number of valuable records and additional records were recently obtained by M. A. Ivie, but much more collecting needs to be done on the island. Recently, A. B. T. Smith

and R. Anderson from the Canadian Museum of Nature, Ottawa, Ontario collected on the island and obtained an additional number of valuable records. Most of the other large islands have been extensively, but not adequately, collected, judging by the large number of species known by one or a very few specimens. Vázquez et al. (2003) prepared a checklist of the Scolytidae known from Cuba and listed 74 species in 34 genera; 85 species in 38 genera are recorded from the island herein. The fauna of most of the smaller islands of the Lesser Antilles has been at least partially sampled, but most have not been extensively collected, although the fauna of these islands is probably limited.

Scolytidae, commonly known as “bark and ambrosia beetles” are small, cylindrical beetles that, for the most part, feed and reproduce in the tissues of living, dying, or recently dead trees and shrubs. Many species may be found in diverse hosts such as seeds, grass stems, cactus, large leaf petioles of various trees, cones of coniferous trees and shaded-out twigs, branches, limbs, etc. The division of “bark beetles” and “ambrosia beetles” refers to the habitat of the individual species. In general, “bark beetles” feed and reproduce on or in the phloem/cambial interface under the bark. Adults form galleries in the inner bark, in which eggs are laid and larvae develop. Adults of “ambrosia beetles” bore deep into the wood and introduce fungi which develop on the walls of the gallery and upon which the larvae feed. Numerous variations to this brief general biology are known and are too numerous to mention here. Interested readers should consult the voluminous references found in a Scolytidae literature search.

## ZOOGEOGRAPHY OF THE WEST INDIES

There are a number of zoogeographical difficulties in the West Indies arising from the instability of the region. Volcanoes have emerged from the sea, mountain ranges have folded, risen and crumbled again and even the great depths of the sea, such as the Bartlett Trough between Cuba and Jamaica, are of comparatively recent date. The result of these movements has been continual shifting which has been difficult to understand and difficult to reconstruct fully (de Beaufort 1951).

A detailed analysis of the zoogeographical patterns of this region is given by Hedges (2001). It is beyond the scope of this study to extensively review the data given by Hedges and the interested reader should consult his paper. Briefly, two major models have been suggested. One model proposes that a proto-Antillean biota connecting North and South America in the late Cretaceous was broken and reformed by plate tectonic movement to form the current island arrangements and biotas. A second model proposes that organisms dispersed over water during the Cenozoic Period. Most biographical studies addressing these problems have been based on well-studied groups of vertebrates or on the study of individual micro- or mega-fossil floras. The over-water dispersal model is currently favored based on 1) most West Indian vertebrate groups are depauperate at the higher taxonomic levels, yet they often have unusually high levels of radiation (endemism) and 2) times of divergence estimated by molecular clocks indicate that most lineages arrived during the Cenozoic when there were no continental connections with the islands.

Perhaps the greatest advance has been made in achieving an adequate plate tectonic model for the Caribbean region. There is now some agreement toward a model that illustrates a Cretaceous volcanic island arc that extended from the Mexico/Chortis block in the north to Ecuador in the south and gradually moved through the developing space between North and South America to collide with the Bahamas Platform in the middle Eocene. Throughout this 70 million year history an immensely complex pattern of collision/separation and submergence/emergence provided abundant opportunity both for variance and dispersal in the migration, evolution and speciation of the flora and fauna of the Greater Antilles (Graham 2003).

The West Indies comprise three major geological regions of different ages and origins (Peck and Perez-Gelabert 2012). The largest area is the older portions of the Caribbean Tectonic Plate, which is composed of the Greater Antilles islands of Cuba, Hispaniola, Jamaica, Puerto Rico and the adjacent Virgin Islands. This area may have land areas dating from the late Mesozoic or early Tertiary, but most land area was available for colonization only from the mid-Tertiary. The second group comprises the slightly raised limestone platforms of the Bahamas, the Turks and Caicos and the Cayman Islands. These have a Tertiary age and origin and have changed considerably during the Pleistocene of the interglacial high sea levels. The third group consists of the tops of volcanoes at the edge of the Caribbean Plate and comprises the islands of the Lesser Antilles and the oceanic islands of the Netherlands Antilles



© MAGELLAN Geographix<sup>SM</sup> Santa Barbara, CA (800) 929-4627

**Figure 1.** Map of the West Indies.

off the coast of present-day Venezuela. These are mostly of mid- to late-Tertiary age and have been available for colonization only from the Pleistocene to the present.

Peck (2005, 2006, 2009a, 2009b, 2009c, 2010, 2011a, 2011b, 2016) presented comprehensive reviews of the geological history of Cuba, Dominica, St. Lucia, St. Vincent, Barbados and the entire Lesser Antilles. Peck and Thomas (2014) reviewed the distribution and diversity of Coleoptera in various islands of the Lesser Antilles.

## HISTORY

Other than mention in catalogs and checklists and a few papers describing new species, there has not been a comprehensive taxonomic study of the Scolytidae in the West Indies prior to my study of the Jamaican fauna in 1972.

Eggers, in a series of papers published mostly between 1931 and 1951, described numerous species and genera, mostly from Guadeloupe. Likewise, Schedl, in numerous papers published from 1931 to 1977, added many additional species and genera.

The first major attempt to tabulate the West Indian scolytid fauna was prepared by Blackwelder (1947) who compiled a checklist of the Coleoptera of Mexico, Central America, the West Indies and South America. Ninety-four genera were listed from the entire tropical New World, most of which contained West Indian species. However, the checklist is now out-of-date since considerable changes in nomenclature have taken place.

Woodruff et al. (1998) presented a checklist of the insects of Grenada and the Grenadines. Two species of Scolytidae from Grenada are listed in that checklist; 67 species from Grenada are treated herein.

Peck, in a series of papers from 2005 to 2016, provided checklists of the Coleoptera fauna of Cuba (2005), Dominica (2006), Barbados (2009a), St. Lucia (2009b), Lesser Antilles islands (2009c, 2016), northern Leeward Islands of Antigua, Barbuda, Nevis, Saba, St. Barthelemy, St. Eustatius, St. Kitts and St. Martin (2011a), Martinique (2011b) and the Guadeloupe Archipelago (2014, with M. C. Thomas). These papers provided a wealth of information concerning Coleoptera diversity, bionomics and zoogeography. In addition, these papers often contain information on vegetation types, climate, habitats and information on the entomological history of the various islands.

Ivie et al. (2008b) published a comprehensive treatment of the Coleoptera of Montserrat, including a detailed history of entomological work on the island, with additional information concerning endemism, biodiversity, speciation and other aspects of taxonomic interest. A list of the Scolytidae recorded from Montserrat was published (Ivie et al. 2008a). Twenty-eight species were listed and an additional 14 species were identified only to genus, a total of 42 species were recognized. Fifty-nine species from Montserrat are treated herein.

Perez-Gelabert (2008) likewise provided similar information for Hispaniola (Haiti and Dominican Republic), with similar additional information on various aspects of entomological history, endemism and a bibliography of Hispaniola-related studies.

## METHODS

As used in this monograph, the West Indies includes the Greater and Lesser Antilles, the Bahamas and the oceanic islands of the Netherlands Antilles (Aruba, Bonaire and Curaçao). The continental islands Trinidad and Tobago are not included although the fauna of these islands was reviewed in order to determine zoogeographical features. Likewise, the Florida Keys and adjacent islands are not specifically included, but their fauna was reviewed. Bermuda, an Atlantic island, is not included, although one species treated herein is recorded from the island.

The holotypes and some allotypes of new species described in this monograph that originated from the collection of the WIBF have been deposited in the CNCI and are credited to the WIBF in the type statement; i.e. "WIBF [CNCI]". Likewise, the same procedure is used to designate the depository of holotypes and allotypes from the Stewart B. Peck, Robert H. Turnbow, Jr., and Robert E. Woodruff collections in the appropriate institution; i.e. "SBPC [CNCI]", "RHTC [FSCA]", and "REWC [FSCA]".

Keys to subfamilies, genera and species are designed for identification, not to indicate any phylogenetic concepts. Species and genera are treated alphabetically under their respective higher categories. Subfamilies are treated in an arbitrary order but beginning with the more primitive subfamilies, e.g. Scolytinae and Hylesininae and ending with a more advanced subfamily Corthylinae. The intermediate subfamilies are treated in no particular order.

Each species is briefly described, emphasizing those characters that will permit recognition. Complete distributions, synonyms, host information and literature citations for all previously described species treated herein can be found by consulting Wood and Bright (1992), Bright and Skidmore (1997, 2002) and Bright (2014). In the interest of space, only synonyms that refer to West Indian species are listed.

A number of species, previously recorded from the West Indies, have not been seen during preparation of this monograph. These are most often misidentifications and should be removed from the faunal list of West Indian species. A list of these omitted species is given in Appendix 1.

The vast majority of specimens, probably over 90%, seen during this study were collected in passive traps, such as black light traps, mercury vapor traps, ultra-violet light traps, flight intercept traps and from beating vegetation, sifting litter, etc. Very few were actually collected from host plants. As a result, host information is missing for most of the specimens examined. A notable exception was provided by Juan A. Torres who lived in Puerto Rico and for at least 10 years collected extensively from host plants from the island and some adjacent islands. A report of his Puerto Rican collecting was provided by Bright and Torres (2006).

An additional complication is that a number of species are known from a few specimens and, in some cases, from one or two specimens. A logical, perhaps more scientific, procedure would be to ignore those species known from only a few specimens. However, to do so would hamper any attempt to describe the biodiversity of the West Indies. If those few specimens are distinctly different morphologically and I felt they could be recognized by future investigators, they are named, placed in the key to species and, in most cases, are illustrated. All such specimens are placed in recognized museums where they are readily available for future studies.

Measurements of length are taken from the anterior margin of the pronotum to the apex of the elytral suture. The head, if visible, is not included nor are any extensions on the elytral apex.

The habitus photos at the end of this publication were taken with a Canon EOS 7D Digital SLR (Canon U. S. A., Melville, NY) mounted on a Visionary Digital BK Lab System (Dun Inc., Palmyra, NY). All are a combination of many layers produced with a Zerene Stacker (Zerene Systems, Richland, WA). The antennal and tibial photos were taken with a Dino-Eye Digital Microscope Eye-Piece Camera, Model AM-423U and the remainder of photos were taken with a Dino-Light Edge Digital Microscope Camera, Model AM-4815ZT with Extended Depth and EDR feature. All photographs were edited using Adobe Photoshop CS6 Extended system (Adobe Systems Inc., San Jose, CA).

In the list of references included in the treatment of each previously described species, I have listed the reference to the original description, followed by a reference to the taxon in the 1992 World Catalog (Wood and Bright 1992), then followed, if appropriate, by references to the subsequent Supplements to the World Catalog (Bright and Skidmore 1997, 2002; Bright 2014). The 1992 World Catalog together with its Supplements contains all of the references to a particular taxon in the world literature, except that the third Supplement (Bright 2014) contains references just to the end of 2010. In the present contribution, any post-2010 taxonomic references are included after the "Bright 2014" reference. In a few cases, additional references of special interest are listed. In the list of references included in the synonymy of each previously described genus, I have followed the same procedure.

In the case of very common species, not all locality records seen are recorded under "Specimens Examined". Often, several different collectors have collected specimens from the same localities, differing in details of dates, collecting method, collector's names or other minor items concerning localities. It would be redundant to record numerous records differing in such minor details and would not assist in any zoogeographical analysis, nor would it add additional information. However, all individual island records seen are included under "Specimens Examined".

Under "Specimens Examined", I have bolded and capitalized the island names in order to make them more visible. Also, in the case of island groups such as the Bahamas and the Virgin Islands, I have likewise bolded the individual island names (if known); these are in lower case. Data in this section has frequently been slightly edited to reduce redundancy and to be more consistent in presenting data. A slash mark has been used to indicate individual labels. Island names listed under "Type Material" have been capitalized and bolded. Label data on type material has been quoted as on the labels; separate labels are divided by a slash mark.

Atkinson and Peck (1994) published a checklist of the bark and ambrosia beetles in southern Florida. Many of the species included therein have been seen from the West Indies. However, several of the species listed in their checklist were not seen from the West Indies during this study but most likely will be found there in the future, especially those species from extreme southern Florida (south of latitude of Miami) or from the Florida Keys. In order to facilitate future identification of these species, I have included most of them in the appropriate generic key. Only a very brief comment is included regarding these species and these species are not included in Appendix 2.

The species concept used in this monograph reflects my understanding of the concept explained in Wheeler and Platnick (2000). Their concept defines species as the smallest unit of a sexual population definable by a set of unique character states.

**Antennal funicle segments.** The antenna of all species of Scolytidae consists of a scape, pedicel, funicle and club. In some genera, the funicle may be absent or greatly reduced and not readily visible. In almost all papers published before 2013 and most published after that date, comments regarding the number of segments in the antennal funicle have included the pedicel as one of the segments. Several recent papers, e. g. Hulcr and Cognato (2010, 2013) excluded the pedicel in the count. Hulcr et al. (2015) briefly reviewed the antennal terminology for the Scolytidae in relation to other groups of insects. The

morphology of the insect antenna was described by Snodgrass (1935), who explained that the pedicel and the flagellum (=funicle) are moved by muscles in the scape that are inserted on the base of the pedicel, but the flagellum and its segments are never provided with muscles. This distinction has been followed by Matheson (1951), Imms (1957), DuPorte (1959) and all later textbooks of entomology that I have examined. Gordh and Headricks (2001) defined the pedicel as “The second segment of the insect antenna, with intrinsic musculature and forming the pivot between the scape and funicle”. I have reluctantly adopted this concept herein, even though it is at odds with almost all previous generic descriptions and can result in unintended confusion. Adherence to this concept presents some additional difficulties. Several genera included in this monograph, such as *Crypturgus* Erichson, *Monarthrum* Kirsch, *Amphicranus* Erichson, *Microcorthylus* Ferrari, *Corthylocurus* Wood and *Corthylus* Erichson are described as having a 1-segmented antennal funicle. Microscopic examination of the antenna of specimens in these genera showed that the funicle is either absent or is much reduced and not readily observed (Fig. 398, 411, 412, 414). The “1-segmented funicle” is evidently the pedicel. In an attempt to avoid confusion with previous generic descriptions, I have added a note (“pedicel excluded”) in most places where the number of funicle segments mentioned in this monograph differs from that in previously published papers.

**Materials examined.** This study is based on the examination of well over 10,000 mounted specimens and an additional several thousand specimens in alcohol. Many of these specimens are in the West Indies Beetle Fauna Project Collection housed presently at the Montana State University, Bozeman, MT and in the Stewart B. Peck collection mostly housed in the Canadian Museum of Nature, Ottawa, ON with additional specimens in the Canadian National Collection of Insects, Ottawa, ON. Other significant collections include the United States National Museum of Natural History, Washington D. C.; the Florida State Collection of Arthropods, Gainesville, FL; the collection at the Carnegie Museum of Natural History, Pittsburg, PA; the A. J. Cook Arthropod Research Collection at Michigan State University, East Lansing, MI and the personal collections of R. H. Turnbow, Ft. Rucker, AL; R. E. Woodruff, Gainesville, FL; C. W. O’Brien, Green Valley, AZ and my own collection housed in the CNCI. In addition, a number of specimens, mostly from Puerto Rico, were collected as a result of an Early Detection survey conducted by the U. S. Forest Service; these specimens are mostly deposited in the USNM and the MSUC.

The following collections provided specimens for this monograph. The acronyms refer to locations where specimens examined are located.

<b>AMNH</b>	—	American Museum of Natural History, New York, New York, USA.
<b>CMNH</b>	—	Carnegie Museum of Natural History, Pittsburg, Pennsylvania, USA.
<b>CMNO</b>	—	Canadian Museum of Nature, Ottawa, Ontario, Canada.
<b>CNCI</b>	—	Canadian National Collection of Insects, Arachnids and Nematodes, Ottawa, Ontario, Canada.
<b>CSCA</b>	—	California State Collection of Arthropods, Sacramento, California, USA.
<b>DBPR</b>	—	Departamento de Biología, University of Puerto Rico, San Juan, Puerto Rico.
<b>FMNH</b>	—	Field Museum of Natural History, Chicago, Illinois, USA.
<b>FSCA</b>	—	Florida State Collection of Arthropods, Gainesville, Florida, USA.
<b>IJCK</b>	—	Institute of Jamaica Collection, Kingston, Jamaica.
<b>INHS</b>	—	Illinois Natural History Survey, Champaign, Illinois, USA.
<b>MNHN</b>	—	Muséum National d’Histoire Naturelle, Paris, France.
<b>MSUC</b>	—	Michigan State University Collection, East Lansing, Michigan, USA.
<b>NHMB</b>	—	Natural History Museum, Basel, Switzerland.
<b>NHML</b>	—	The Natural History Museum, London, United Kingdom.
<b>NHMW</b>	—	Naturhistorisches Museum, Wien, Austria.
<b>PRDA</b>	—	USDA, APHIS, PPQ, Carolina, Puerto Rico.
<b>REWC</b>	—	R. E. Woodruff Collection, Gainesville, Florida, USA.
<b>RHTC</b>	—	Robert Turnbow Collection, Enterprise, Alabama, USA.
<b>SBPC</b>	—	Stewart Peck Collection, Ottawa, Ontario, Canada.
<b>SLWC</b>	—	Steven L. Wood Collection, now in USNM.
<b>THAC</b>	—	Thomas H. Atkinson Collection, now at Texas A & M University, College Station, Texas, USA.
<b>UPRC</b>	—	University of Puerto Rico and Agricultural Experiment Station, Mayagüez, Puerto Rico.

- USNM** — United States National Museum of Natural History, Smithsonian Institution, Washington, District of Columbia, USA
- WIBF** — West Indian Beetle Fauna Project Collection, Montana State University, Bozeman, Montana, USA.

## TAXONOMIC CONSIDERATIONS

The classification used herein follows the system recently proposed (Bright 2014). That classification recognized the Scolytidae as a separate and distinct family in the superfamily Curculionoidea. Within the Scolytidae, 13 subfamilies and 30 tribes are recognized, of which seven subfamilies and 18 tribes occur in the West Indies.

My classification differs from that first proposed by Crowson (1955) and elaborated by Farrell et al. (2001) by recognizing the Scolytidae as a family and not a subfamily of the Curculionidae. My argument is based on the morphological distinctness and the lack of any evidence of intergradation between the Curculionidae and the Scolytidae. The rationale for my position was expanded in 2014 and a rebuttal of my position was published by Jordal et al. (2014). A study by Gillett et al. (2014) provided additional insights into the question of the phylogeny of weevils. Their figure 5 shows the “Scolytinae” distinctly separated from all other subfamilies of the Curculionidae with no overlap or intergradation. In addition, their analysis supported a separate origin of the wood-boring behavior by the Scolytidae (their Scolytinae) and the Platypodidae (their Platypodinae) and the Cossoninae (Curculionidae). A separate origin of the wood-boring habit, along with the development of a complex host-finding behavior, a unique chemical communication system and the co-evolution of a synergistic association with wood-inhabiting fungi are all characteristic of the Scolytidae and are evidently not shared by the Curculionidae (Bright 2014). The wood-boring habit is evident in some subfamilies of the Curculionidae (Cryptorhynchinae, Molytinae and Cossoninae), but these associations are evidently a recent occurrence and should not be considered indicative of a phylogenetic relationship.

Based on the above comments, I prefer to consider the Scolytidae as a distinct family within the Curculionoidea which enables the development of a logical taxonomic hierarchy and allows the placement of apparently related taxa in an evolutionary format.

## KEY TO SUBFAMILIES OF WEST INDIAN SCOLYTIDAE

1. Lateral margin of protibia unarmed except for a single curved process at outer apical angle (Fig. 336); lateral line of pronotum sharply elevated (Fig. 416); antennal club flattened, sutures strongly procurved (Fig. 372, 373) ..... **SCOLYTINAE** (p. 8)
- Lateral margin of protibia armed by several to many tooth-like processes, none of which curve toward inner process (Fig. 361) or lateral margins parallel, unarmed (Fig. 367); lateral line of pronotum elevated or not; antennal club variable ..... **2**
  
- 2(1). Head, in normal position, visible from above (as in Fig. 498); pronotum weakly if at all declivous on anterior half; usually each basal margin of elytra weakly to strongly procurved and armed by a series of marginal crenulations (as in Fig. 498) (except *Hylastes*, Fig. 490) ..... **HYLESININAE** (p. 14)
- Head, in normal position, not visible from above (as in Fig. 514); pronotum weakly to strongly declivous on anterior half; basal margin of elytra forming a straight, transverse line across body, margin unarmed or with a fine, raised line (as in Fig. 514) ..... **3**
  
- 3(2). Metepisternum largely covered by elytra, visible only in front (as in Fig. 483); antennal club evenly, strongly flattened, with distinct to obscure sutures or grooves (Fig. 407, 408), often asymmetrical, exceedingly large or elaborately pubescent (Fig. 411, 412); protibia slender, with three to five socketed denticles on outer margin ..... **CORTHYLINAE** (p. 310)
- Metepisternum visible to its posterior end (as in Fig. 424); antennal club either solid or thickened basally and obliquely truncate, or flattened with distinct sutures; protibiae flattened, with

- sides parallel (Fig. 367, 368) or broader in middle or distally, with or without socketed denticles on outer margin (Fig. 361–366) ..... 4
- 4(3). Protibia with sides either parallel or distal portion slightly wider than base (Fig. 367), outer margins without denticles or serrations, distal margin armed by two to five denticles with a distinct, curved mucro at inner angle (Fig. 367); anterior coxae separated; antennal funicle 4- or 5-segmented (pedicel excluded) (Fig. 386–389); female frons often concave ..... **MICRACIDINAE** (p. 70)
- Protibia wider apically, lateral margin arcuate or straight, armed by several to many denticles or tooth-like processes (Fig. 362–365); anterior coxae contiguous or separated; antennal funicle either not visible (Fig. 398), or if visible, then 1- to 5-segmented (pedicel excluded, as in Fig. 374); female frons usually not concave ..... 5
- 5(4). Costal margins of elytra slightly ascending posteriorly (Fig. 443–445); antennal club strongly flattened with sutures on both faces, those on posterior face strongly procurved and limited to apical half (Fig. 391, 392); body vestiture usually scalelike ..... **CRYPHALINAE** (p. 103)
- Costal margins of elytra descending posteriorly (as in Fig. 450, 451); antennal club flattened with sutures similar on both faces, or obliquely truncate (as in Fig. 402) with sutures on posterior face absent, or, if present, restricted to less than apical one-fourth; body vestiture hairlike or scalelike ..... 6
- 6(5). Antennal funicle 4- to 6-segmented (pedicel excluded, Figs. 396, 379); anterior coxae contiguous or widely separated; basal margin of elytra usually finely elevated; lateral margin of pronotum acutely elevated (Fig. 453) ..... **HEXACOLINAE** (p. 183)
- Antennal funicle 3- or 4-segmented (pedicel excluded, as in Fig. 399) or not readily visible (Fig. 398); anterior coxae usually contiguous but may be widely separated; basal margin of elytra not elevated; lateral margin of pronotum rounded or basal half and basal margin may have a fine, raised line ..... 7
- 7(6). Antennal funicle not readily visible, only pedicel visible (Fig. 398); antennal club solid with one suture visible near apex (Fig. 398); length 1.1–1.3 mm ..... **CRYPTURGINAE** (p. 219)
- Antennal funicle 3- or 4-segmented (pedicel excluded, as in Fig. 399); club thickened basally and obliquely truncate (as in Fig. 402), or flattened, usually with distinct sutures (as in Fig. 399); length usually greater than 1.3 mm ..... **IPINAE** (p. 220)

### SUBFAMILY SCOLYTINAE

Members of this subfamily may be characterized by the presence of a single curved process located at the outer apical angle of the protibia (Fig. 366), by the unarmed lateral margin of the protibia (Fig. 366), by the sharply elevated lateral margin of the pronotum (Fig. 416, 417, 418) and by the flattened antennal club with strongly procurved sutures (Fig. 372, 373). This subfamily contains one tribe with four genera, three of which occur in the West Indies.

### KEY TO THE GENERA OF WEST INDIAN SCOLYTINAE

1. Ventral profile of abdomen horizontal or ascending gradually (Fig. 416); elytral bases with a fine raised line; scutellum flush with elytral bases ..... **Loganius Chapuis** (p. 9)
- Ventral profile of abdomen ascending abruptly or nearly vertical at segment 2 (Fig. 417, 418) elytral bases depressed in scutellar area, appearing emarginate in median area; scutellum depressed ..... 2
- 2(1). Lateral margin of elytra deeply, broadly excised, metepisternum expanded into this notch (Fig. 417); abdomen abruptly sloping upward at posterior margin of segment 2 (Fig. 417) ..... **Scolytopsis Blandford** (p. 12)

- Lateral margin of elytra straight and overlapping metepisternum (Fig. 418); abdomen nearly vertical at anterior margin of segment 2 (Fig. 418) ..... *Scolytus Geoffroy* (p. 13)

## TRIBE SCOLYTINI

### Genus *Loganius* Chapuis

*Loganius* Chapuis 1869: 52; Smith and Cognato 2013: 551.

Members of *Loganius* may be distinguished from those in related genera in the tribe by the scutellum which is longer than wide and flush with the elytral bases, by the venter of the abdomen ascending gradually to the elytral apex, by the antennal club with three procurved sutures and by the presence of one or two small denticles on the anterior margin of the mesotibia and metatibia. In addition, the frons is concave in the male and convex to shallowly impressed in the female, the antennal funicle is 6-segmented (pedicel excluded) (Fig. 372), the pronotum is broad and without asperities or other modifications, the elytral bases bear a fine, raised line and the declivity is gradually convex and without modifications.

Since 1971 this genus has been treated as a synonym of *Cnemonyx* Eichhoff. In a comprehensive revision of the Scolytini, Smith and Cognato (2013) removed the genus from synonymy and recognized 17 species, most occurring in Mexico and Central America with one species in South America. Two species are known from the West Indies (Bright and Skidmore 2002).

Most Mesoamerican species breed in hosts in the Euphorbiaceae (Atkinson 1993c, Smith and Cognato 2013). The two species treated here breed in the machineel tree, *Hippomane mancinella* L. (Atkinson 1993c).

### Key to species of *Loganius* in the West Indies

1. Epistomal margin deeply arcuate (Fig. 3); costal margin of elytra not serrate from sutural apex to level of declivital base; interstitial setae on declivity distinct, short, slightly flattened; length 2.0–2.4 mm; generally distributed ..... *L. ficus* Schwarz (p. 9)
- Epistomal margin straight in male, weakly arcuate in female (Fig. 2); costal margin of elytra serrate from sutural apex to level of declivital base; interstitial setae absent or obsolete, if present, then very fine, very short; length 1.2–1.7 mm; generally distributed ..... *L. vagabundus* (Wood) (p. 10)

### *Loganius ficus* Schwarz

Figures 3, 366, 372, 416, 486.

*Loganius ficus* Schwarz 1896: 44; Smith and Cognato 2013: 552.

*Cnemonyx ficus*: Wood and Bright 1992: 315; Bright and Skidmore 1997: 72; Bright and Skidmore 2002: 47; Bright 2014: 82.

*Ceratolepis nubilus* Blackman 1943a: 380 (Virgin Islands).

**Description (Male).** Length 2.0–2.4 mm, 2.3 times longer than wide; reddish-brown. Frons broadly, moderately concave from epistomal margin to upper level of eyes; surface finely, closely punctured, finely reticulate, with elongate, narrow scales; epistomal margin elevated, deeply arcuate, shining. Antennal club 1.4 times longer than wide, with three strongly procurved sutures; funicle with tufts of long setae. Pronotum as long as wide, widest on basal third; sides strongly arcuate, anterior margin broadly rounded; discal surface smooth, with minute, impressed punctures. Elytra 1.3 times longer than wide; sides parallel on basal half, narrowly rounded to apex; discal striae weakly or not impressed, striae punctures small, deeply impressed; discal interstriae 3.0–4.0 times wider than striae, smooth, shining, each with uniseriate row of moderately large, impressed punctures, these slightly larger than those in striae and with a few, very short setae or narrow scales; costal margin acute, smooth without granules. Declivity steeply con-

vex; striae narrower than on disc, slightly impressed; interstriae weakly convex, surface dull, shagreened, each with a median row of granules and with rows of short, stout bristles.

**Female.** Similar in size to male; frons less deeply concave and setae on antennal funicle slightly shorter.

**Distribution.** This species occurs from southern Florida and throughout the West Indies wherever its host plant is found.

**Specimens examined.** **BAHAMAS: Andros Island**, Mangrove Cay, May–June 1917, W. M. Mann (1–AMNH). **Great Abaco Island:** Man-O’War Cay, VIII.1971, H. and A. Howden (10–CNCI). **Great Inagua Island**, Salt Pond Hill, blacklight trap, 10.VII.2007, Thomas, Turnbow and Smith (2–FSCA). **Mayaguana Island**, 30.VIII.63, Chad M. Murvosh, blacklight trap (9–FSCA). **San Salvador Island**, Gerace Research Center, 22 June 2003, at blacklight, scrub forest edge at open catchment, W. E. Steiner and J. M. Swearingen (1–USNM). **CAYMAN ISLANDS: Grand Cayman**, 3 km W. Colliers, 19°21’N, 81°07’W, 21 February 1993 / at blacklight in cut-over forest near ponds, W. E. Steiner and J. N. Swearingen (3–USNM); Boatswain Point, Lime Tree Estate, 16 Feb. 1985, E. J. Gerberg (1–FSCA); Botanic Garden, 9.VI.2008, M. C. Thomas, R. H. Turnbow, B. K. Dozier, blacklight trap (1–FSCA); **Little Cayman**, 3 mi. E. jct. Olivine Kirk Dr. and Buy Banks Rd., blacklight, 6 July 2013, R. Turnbow (2–RHTC); Salt Rock Nature Trail, blacklight trap, 7 July 2013, R. Turnbow (1–RHTC). **GRENADA:** Saint Andrew, Mirabeau Agriculture Laboratory, 9.IV.1990, A. Thomas, light trap (1–SBPC). **JAMAICA:** Port Antonio, Bonnie View, 18.VII.1952, A. M. Laessle (2–FSCA). **MARTINIQUE:** 2 km W Ste-Luce, Hotel Pierre, 14°27.01’N, 60°55.98’W, 1 m / mangrove uv trap, 19–24.VII.2012, S. Peck, collr. (17–SPBC, CNCI). **MONTSERRAT:** Rendezvous Bay, 16°48.50’N, 62°12.30’W, 08–09 Aug. 2005 (4–WIBF). **NETHERLANDS ANTILLES: Curaçao**, Christoffel N. P., North Car Route, 12°21’2.23”N, 69°6’10.14”W, 14.XI.2014, M. C. Thomas (26–FSCA); Christoffel N. P., South car Route, dry wash across road, 12°20’51.68”N, 69°6’24.68”W, 9.XI.2014, M. C. Thomas (4–FSCA); Weg Naar, Playa Kanoa, 12°9’37.82”N, 68°52’49.13”W, 9.XI.2014, M. C. Thomas, blacklight trap (68–FSCA, CNCI); same localities and dates, R. Turnbow (97–RHTC, CNCI). **PUERTO RICO: Mona Island**, Sendero Capitán, 50 m, at Hg and uv lights (1), at night, incl. Hg/uv lights (2) N. Franz, V.23 or V.19.2008 (3–UPRC). **SAINT KITTS-NEVIS: Saint Kitts**, SE Peninsula, Majors Bay, 3.IX.1991 (1) and 7.IX.1991 (1), blacklight trap, R. E. Woodruff (2–SBPC); SE Peninsula, E of Great Salt Pond, 9.IX.1991, light trap, FAO Insect Survey, R. E. Woodruff (1–SBPC). **SAINT LUCIA:** Praslin, 50 m, 25.VII.2007 / mango litter, S. and J. Peck (1–SBPC). **SAINT VINCENT AND THE GRENADINES: Mayreau Island**, Saltwhistle Bay, 12–27.VIII.2009 / thorn shrub at pond, uv trap, S. Peck (2–SBPC); **Mayreau Island**, Station Hill, / disturbed woodlands 11–15.VIII.2008, S. Peck and M. de Silva (15–SBPC); **Mayreau Island**, east beach, / manchineel forest uv light, 13.VIII.2008, S. Peck and M. de Silva (15–SBPC); **Union Island**, Chatham Bay, / dry second growth, coastal woodland uv trap, S. Peck and M de Silva (1–SBPC). **TURKS and CAICOS ISLANDS: Grand Turk Island**, 19.II.1953, E. B. Hayden (2–AMNH); **Grand Turk Island**, North Wells, 3 February 2001 / at blacklight in mixed scrub near salt pond, W. E. Steiner and J. M. Swearingen (15–USNM); Providenciales, Malcolm Roads area on west coast, 29 January 1998 / at blacklight in sandy scrub forest, W. E. Steiner and J. M. Swearingen (1–USNM). **VIRGIN ISLANDS (BRITISH): Guana Island**, 9–15.X.2002, B. and B. Valentine, at uv light (1–WIBF). **Virgin Gorda Island**, Fisher’s Cove, 20.IX.1990, R. M. and H. V. Baranowski, blacklight trap (1–FSCA). **VIRGIN ISLANDS (U. S.): Saint Croix**, Golden Grove, 21 May 1980, at uv light / D. F. Keaveny (1–WIBF). **Saint John**, Great Cruz Bay, 15–19.VI.1996 and 20–23.VI.1996, uv, B. and B. Valentine (8–WIBF).

**Records from literature.** **BAHAMAS: Great Inagua**, North Coast Road (Turnbow and Thomas 2008); **CUBA:** (Vázquez et al. 2003).

**Comments.** Adults of this species may be easily distinguished from those of *L. vagabundus* Wood by the deeply emarginate epistoma, by the undulating costal margin of the elytra, by the much larger size and by the declivital vestiture as described in the key.

Adults of this species occur in larger branches and trunks ranging from 3–25 cm in diameter (Atkinson 1993c).

### ***Loganius vagabundus* Wood**

Figure 2.

*Loganius vagabundus* Wood 1961: 89; Smith and Cognato 2013: 552.

*Cnemonyx vagabundus*: Wood and Bright 1992: 318; Bright and Skidmore 1997: 73; Bright and Skidmore 2002: 47; Bright 2014: 83.



**Figures 2–3.** Frons and epistoma of *Loganius* spp. **2)** *L. vagabundus*. **3)** *L. ficus*.

**Description (Male).** Length 1.2–1.7 mm, 2.5 times longer than wide; reddish-brown. Frons convex on upper half, flattened on a triangular area on lower half, strongly impressed above epistoma; surface reticulate, closely, deeply punctured; epistomal margin smooth, shining, very weakly arcuate. Antennal club 1.4 times longer than wide, with three strongly procurved sutures; funicle with long tufts of setae. Pronotum as long as wide, wider on basal fourth; sides arcuate, anterior margin narrowly rounded; discal surface smooth, shining, with very faint indications of longitudinal lines and a very few, minute, impressed punctures. Elytra 1.5 times longer than wide; apex narrowly rounded; discal striae weakly or not impressed, striae punctures moderately large, close, deeply impressed; discal interstriae slightly wider than striae, smooth, shining, with uniseriate row of punctures slightly larger than those in striae; costal margin strongly serrate. Declivity steeply convex; striae 1 and 2 strongly impressed; interstriae 1, 2, 3, 5, 7 and 9 more strongly convex, each interstriae with a median row of small granules and a row of short, narrowly flattened scales.

**Female.** Similar in size to male. Frons convex, with a brush of short setae on lower half, epistomal margin straight and setae on antennal funicle slightly shorter.

**Distribution.** This species occurs from southern Florida to Panama and throughout the West Indies to Trinidad.

**Specimens examined.** **ANTIGUA:** Christian Valley, blacklight trap, 10–12.V.1991, FAO Insect Survey (1–SBPC); English Harbor, April 2, 1958, J. F. G. Clarke (1–USNM). **CAYMAN ISLANDS:** **Grand Cayman**, 3 km W. Colliers, 21 February 1993 / at blacklight in cut-over forest near ponds, W. E. Steiner and J. M. Swearingen (1–USNM). **DOMINICA:** St. Paul Parish, Springfield Est., 351 m, 15.34544N, 61.36892W, 01–03 June 2011, M. A. & L. L. Ivie colrs, uv light (1–WIBF). **DOMINICAN REPUBLIC:** Province La Altagracia: N. de Este, Boca de Yuma, 05 Aug 1999, 2 m., at light, M. A. Ivie and K. A. Guerrero (2–WIBF); La Altagracia, Parque del Este, 2.9 km SW Boca de Yuma, 11 m, 28 May 2004, semi humid dry forest uv light, J. Rawlins, C. Young, C. Nunez, J. Fetzner (1–CMNH); Province La Altagracia, 2 km W. La Laguna Nisibon, 19.VI.1998, blacklight trap near beach dunes, R. E. Woodruff: H. Freytag (4–REWC); Province La Altagracia, Nisibon, Finca Papaguillo, blacklight trap, R. E. Woodruff, R. M. Baranowski, 16–19.VI.1999 (1–REWC); San Cristobal, 35 m, 1971 and 1973, J. and S. Klapperich (7–CNCI); Province Hato Mayor, 3 km S Sabana de la Mar, 21 m, 03 Aug 1999, at night, M. A. Ivie and K. A. Guerrero (1–WIBF); Province Pedernales, 24 km N Cabo Rojo, 11.VI.1998, 3000 ft., blacklight trap, R. E. Woodruff: Freytag (9–REWC); Pedernales, 26 km N Cabo Rojo, 760 m, 17 July 1987, J. Rawlins, D. Davidson (1–CMNH); Pedernales, 25 km N Cabo Rojo, mercury vapor and blacklight, 10 July 1996, R. Turnbow (18–RHTC). **GRENADA:** Saint Andrew, Mirabeau Agriculture Laboratory, 10.IX.1990, J. Telesford, light trap (1–CNCI). **MARTINIQUE:** 2 km W Ste-Luce, Hotel Pierre, 1 m / mangrove uv trap, 19–24.VII.2012, S. Peck (1–SPBC). **MONTSERRAT:** Rendezvous Bay, 08–09 Aug 2005, WIBF group (2–WIBF). **NETHERLANDS ANTILLES:** **Curaçao**, Christoffel N. P., North car Route,

12°21'2.23"N, 69°6'10.14"W, 14.XI.2014, M. C. Thomas (11-FSCA); Christoffel Park, Northern Route, 12°21'02"N, 69°06'11"W, 12 Nov. 2014, R. Turnbow (1-RHTC); Piscadera, 0.5 km N Carmabi, 12°7'36.88"N, 68°58'1.14"W, 6.XI.2014, M. C. Thomas, blacklight trap (1-FSCA); Christoffel Park, Mountain Route, 12°20'29"N, 69°06'29"W, blacklight trap, 6 Nov 2014, R. Turnbow (1-RHTC). **SAINT KITTS-NEVIS: Saint Kitts**, SE Peninsula, east of Great Salt Pond, 9.IX.1991, light trap, FAO Insect Survey, R. E. Woodruff (1-SBPC). **SAINT LUCIA: Mon Repos**, Fox Grove Inn, 90 m, 8–18.VII.2007, uv light, S. and J. Peck (1-SBPC); Praslin, 50 m, 25.VII.2007, mango litter, S. and J. Peck (2-SBPC); Micoud Dist., Escap Community, 46 m, 01–16 June 2009, at house, R. C. Winton et al. (1-WIBF); Savannes Bay Mangrove Reserve, 9.VII.2009, in broken branch, D. E. Bright (10-CNCI). **SAINT VINCENT AND THE GRENADINES: Mayreau Island**, east beach, manchineel forest uv light, 13.VIII.2008, S. Peck and M. de Silva (6-SBPC). **VIRGIN ISLANDS (BRITISH): Guana Island**, 9–15.X.'02, B. and B. Valentine, at uv light (1-WIBF). **Jost Van Dyke Island**, Little Harbor (3-USNM). **Virgin Gorda**, Fisher's Cove, 20.IX.1990, R. M. and H. V. Baranowski, blacklight trap (1-FSCA). **VIRGIN ISLANDS (U. S.): St John**, Great Cruz Bay, 15–19 and 20–23.VI.1996, u/v, B. and B. Valentine (3-WIBF).

**Record from literature. PUERTO RICO:** Mona Island (Wood 1961).

**Comments.** Adults of this species may be readily recognized by the characters given in the key and by the comments given under *L. ficus*.

In Florida adults of this species were found in small branches 1–3 cm in diameter (Atkinson 1993c, Atkinson and Peck 1994). *Pisidia piscipala* (L.) Sarg. (= *Ichthyomethia piscipula* (L.) Hitch., Leguminosae) is recorded as a host (Wood 1982) but is an error in identification (Atkinson 1993c).

One female specimen, probably of this species, was seen from Trinidad: Arima Valley, 800–1200 ft., Feb. 10–22, 1964, collected by J. G. Rosen and P. Wygodzinsky (CNCI).

### Genus *Scolytopsis* Blandford

*Scolytopsis* Blandford 1896a: 123; Wood and Bright 1992: 320; Bright and Skidmore 1997: 74; Bright and Skidmore 2002: 432 (checklist); Bright 2014: 84.

Members of *Scolytopsis* may be distinguished by the deeply incised basal half of the elytral margin in which the metepisternum is expanded into (Fig. 417). In addition, the antennal club is flattened with portions of a septum partly visible, the frons is flattened in the male and convex in the female, the antennal funicle is 6-segmented (pedicel excluded), the pronotum is convex, punctured with the lateral margin marked by a fine raised line, the elytra are distinctly striate, the elytral declivity is gradually convex and unarmed and the ventral sternites, from sternite 2, ascend to meet the elytral apex.

Members of this genus occur in the inner bark of host plants, where they construct biramous parental galleries and long larval mines in a pattern similar to those of species of *Scolytus* (Wood 1982).

Five species are included in this genus, all from the New World (Bright and Skidmore 1992). One species occurs in the West Indies.

### *Scolytopsis puncticollis* Blandford

Figures 417, 487.

*Scolytopsis puncticollis* Blandford 1896a: 123; Wood and Bright 1992: 321; Bright and Skidmore 1997: 74; Bright and Skidmore 2002: 47; Bright 2014: 84.

*Scolytopsis cubensis* Wood 1961: 87 (Cuba).

**Description (sex?).** Length 2.0–2.5 mm, 2.2 times longer than wide. Frons strongly convex, transversely impressed above epistoma except for a median callus; surface coarsely, closely punctured, most punctures longitudinally strigose; vestiture consisting of very short, stout bristles on lower half and a pair of small, longer tufts of setae on epistoma. Antennal club 1.3 times longer than wide, sutures not evident except for a remnant of a septum on suture 1. Pronotum as long as wide, widest near base; sides weakly arcuate, anterior margin broadly rounded; discal surface shining, with large, scattered punctures and numerous, minute, impressed punctures. Elytra 1.4 times longer than wide, 1.4 times longer than pronotum; discal striae weakly impressed, punctures coarse, deep; discal interstriae slightly wider

than striae, punctures equal to those in striae, deep, close; surface dull, reticulate-granulate on basal three-fourths. Elytral declivity gradual, unarmed. Metepisternum very large, expanded into a broadly excised emargination on the humeral margin of the elytra. Abdomen ascending abruptly to elytral apex.

**Distribution.** This species occurs from southern Mexico to Costa Rica and Brazil and in Cuba. A questionable record from Florida is recorded by Peck and Thomas (1998).

**Specimens examined. CUBA:** Baranguá, IX.12.1927, taken on sticky shield, L. C. Scaranuzza (1–CNCI); Cayamas, 5–IX., E. A. Schwarz (1–USNM).

**Comments.** Adults of this species may be easily recognized by the very large metepisternum that fits into a large emargination on the costal margin of the elytra and by the other characters mentioned in the diagnosis. This is the only species of *Scolytopsis* known from the West Indies.

Wood (2007) reports that this species was abundant in cut branches (*Laguncularia racemose*) in Veracruz, Mexico collected by T. H. Atkinson.

### Genus *Scolytus* Geoffroy

*Scolytus* Geoffroy 1762: 309; Wood and Bright 1992: 321; Bright and Skidmore 2002: 432 (checklist); Bright 2014: 84.

Adults of *Scolytus* may be easily distinguished from those in related genera by the straight elytral lateral margin (not deeply incised) and by the abruptly ascending ventral segment 2 (Fig. 418). In addition, the frons of the male is flattened and the frons of the female is convex, the antennal funicle is 6-segmented (pedicel excluded), the antennal club is flattened and generally oval (Fig. 373), the pronotum is convex and punctured with a raised line on the lateral margin and the elytra are basically flat without a distinct declivity and are distinctly striate.

Members of this genus are phleophagous and, in tropical species, are bigamous. Parental galleries are constructed in the phloem-cambium region of trunks or large branches of the host plant.

One species has been collected in the West Indies.

### *Scolytus dimidiatus* Chapuis

Figures 373, 418, 488.

*Scolytus dimidiatus* Chapuis 1869: 57; Wood 1982: 447; Wood and Bright 1992: 329; Bright and Skidmore 1997: 76; Bright 2014: 86.

**Description (Male).** Length 2.1–3.2 mm, 1.8 times as long as wide; very dark brown to black. Frons almost flat, surface minutely reticulate with a few, widely spaced fine punctures; lower third strongly, transversely impressed with a strongly elevated, transverse elevation on median fifth above impressed area; vestiture confined to lateral margins, consisting of a dense row of very long, dark hairs extending from base of mandibles to upper level of eyes. Pronotum very slightly longer than wide; discal surface with fine punctures. Elytra very slightly longer than wide, as long as pronotum; striae weakly impressed, with small punctures; interstriae smooth, shining, 3.0 times wider than striae, with very fine punctures in a median row. Sternite 2 nearly vertical, flat, with a coarse, median, sub-conical spine and a conspicuous tuft of setae immediately above spine; surface dull, reticulate, with fine, deep punctures.

**Female.** Similar to male except frons weakly convex, reticulate, median half with coarse, longitudinal striations, margins on upper half with a dense row of very long hairs, tips of some of these hairs reaching the epistomal margin; sternite 2 weakly convex, spine slightly smaller than in male, tuft of hair above tubercle much smaller or absent.

**Distribution.** This species occurs from Veracruz, Mexico to Venezuela and in Cuba and Jamaica.

**Specimens examined. CUBA:** Soledad, Cienfuegos, Jan. 1928 (3–CNCI); Loma del Gato, Cobre Range, July 3–7, 1936, 3000 ft. / Cuba 1936, Darlington (2–CNCI). **JAMAICA:** Manchester, Grove Place (1–IJCK).

**Comments.** This is the only extant species of *Scolytus* recorded from the West Indies, with the possible exception of *S. propinquus* (see Appendix 1). One fossil species, *S. poinari* Bright, was described from amber from the Dominican Republic (Bright and Poinar 1994).

Adults of this species may be easily recognized by the characters given in the key, diagnosis and illustrations. They do not resemble the adults of any other species of West Indian Scolytidae.

## SUBFAMILY HYLESININAE

Members of this subfamily may be distinguished by the head which is visible from above when in normal position, by the pronotum which is weakly if at all declivous on anterior half and by the weakly to strongly procurved basal margin of the elytra which is armed by a series of marginal crenulations (except *Hylastes*).

In the West Indies, the subfamily contains seven tribes and 15 genera (excluding *Dendroctonus* in key).

## KEY TO THE TRIBES AND GENERA OF WEST INDIAN HYLESININAE

1. Eye completely divided, halves widely separated, sometimes connected by one row of facets; crenulations on elytral base poorly formed; antennal funicle 5-segmented (pedicel excluded) (tribe Phrixosomatini) ..... ***Phrixosoma* Blandford** (p. 16)
- Eye entire to weakly emarginate; crenulations on elytral base variable; antennal funicle 3- to 6-segmented (pedicel excluded) ..... **2**
  
- 2(1). Protibia with a curved bifid process and mesotibia and metatibiae with a single curved spine extending beyond spine on inner apical angle; prothorax usually longitudinally strigose; antennal funicle 5-segmented (pedicel excluded) (tribe Bothrosternini) ..... **3**
- All tibiae bearing several teeth, none extending beyond tarsal insertion; prothorax never longitudinally strigose; antennal funicle with variable number of segments ..... **6**
  
- 3(2). Lateral margins of pronotum rounded ..... **4**
- Lateral margins of pronotum with a sharply elevated, costate line ..... **5**
  
- 4(3). Sutures of antennal club transverse, straight (Fig. 376); rostrum distinctly wider than distance between eyes; frons convex to weakly, transversely impressed, without large, median tubercle ..... ***Cnesinus* LeConte** (p. 22)
- Sutures of antennal club strongly procurved; rostrum width at tip equal to distance between eyes; frons excavated in both sexes, with a median tubercle just above epistomal margin (Fig. 424) ..... ***Pagiocerus* Eichhoff** (p. 29)
  
- 5(3). Proepisternal area slightly excavated, cavity filled by yellow pubescence, especially in female (Fig. 422); prothoracic piece with a subacute, transverse crest; elytral interstriae flat ..... ***Bothrosternus* Eichhoff** (p. 21)
- Proepisternal area not excavated and not especially pubescent; prothoracic piece without a transverse crest; elytral interstriae narrow, carinate ..... ***Sternobothrus* Eggers** (p. 30)
  
- 6(2). Lateral prosternal area sharply elevated from coxae to anterior margin; crenulations on elytral bases usually poorly developed; antennal funicle 6-segmented (pedicel excluded), club conical; head slightly prolonged, subrostrate ..... **7**
- Lateral prosternal area without elevated ridge; crenulations on elytral bases distinct; antennal funicle 3- to 6-segmented (pedicel excluded), club flattened; head not prolonged ..... **8**

- 7(6). Pronotum smooth, densely punctured; frons not sexually dimorphic; basal margins of elytra straight to very weakly arcuate, unarmed; body less than 3.0 mm long, elongate, slender (Fig. 490) (tribe Hylastini) ..... **Hylastes Erichson** (p. 18)
- Pronotum asperate on antero-lateral areas; frons sexually dimorphic; basal margins of elytra arcuate, armed with a row of small crenulations; body very large, over 5.0 mm long, stout, robust (Fig. 491) (tribe Hylesinini) ..... **Phloeoborus Erichson** (p. 20)
- 8(6). Scutellum visible, elytral bases notched for its reception; tarsal segment 3 stout, usually somewhat bilobed; crenulations on elytral bases widely distributed ..... **9**
- Scutellum obsolete, elytral bases slightly if at all emarginate at suture; tarsal segment 3 slender; crenulations on elytral bases restricted to area between suture and interstriae 4 (tribe Hypoborini) ..... **14**
- 9(8). Antennal club deeply divided into three movable, sublammellate segments (Fig. 377, 378) (tribe Phloeotribini) ..... **Phloeotribus Latreille** (p. 32)
- Antennal club not divided into separate segments ..... **10**
- 10(9). Antennal club strongly flattened, subcircular, sutures slightly procurved, setae obscure; elytral declivity evenly convex, without distinct armature; vestiture never scalelike; length 5.0–7.0 mm (tribe Tomicini) ..... **Dendroctonus Erichson** (p. 36)
- Antennal club oval to subglobular, sutures transverse to oblique, marked by rows of setae; elytral declivity convex to variously impressed, usually with distinct granules or tubercles; vestiture often scalelike; length less than 5.0 mm (tribe Phloeosinini) ..... **11**
- 11(10). Antennal club strongly asymmetrical, without sutures; antennal funicle attached to side of club (Fig. 379, 380) ..... **Chramesus LeConte** (p. 36)
- Antennal club symmetrical, sutures clearly marked by rows of setae; antennal funicle attached at base of club ..... **12**
- 12(11). Eye entire; antennal funicle 6-segmented (pedicel excluded); elytral bases strongly procurved, profoundly produced anteriorly; pronotum armed or not (Fig. 429, 499) ..... **Dendrosinus Chapuis** (p. 51)
- Eye weakly emarginate; antennal funicle 4- or 5-segmented (pedicel excluded); elytral bases weakly procurved, not produced anteriorly; pronotum unarmed by asperities ..... **13**
- 13(12). Antennal funicle 4-segmented (pedicel excluded), club flattened, sutures distinct, oblique (Fig. 382); procoxae moderately separated ..... **Phloeosinus Chapuis** (p. 52)
- Antennal funicle 4- to 5-segmented (pedicel excluded), club subglobular, sutures obsolete or marked by rows of sparse setae (Fig. 381); procoxae contiguous ..... **Cladoctonus Strohmeier** (p. 44)
- 14(8). Antennal funicle 3-segmented (pedicel excluded), club devoid of sutures (Fig. 384); pronotal asperities mostly confined to anterior third; protibia slender, lateral margin armed by four socketed teeth ..... **Liparthrum Wollaston** (p. 65)
- Antennal funicle 4-segmented (pedicel excluded), club with distinct to obsolete sutures ..... **15**
- 15(14). Antennal club clearly marked by three sutures (Fig. 383); pronotal surface with asperities confined to two or three clusters each containing one to five asperities ..... **Chaetophloeus LeConte** (p. 53)
- Antennal club without sutures (Fig. 385); pronotal surface densely micro-asperate over entire surface ..... **Trypanophellos Bright** (p. 67)

## TRIBE PHRIXOSOMATINI

### Genus *Phrixosoma* Blandford

*Phrixosoma* Blandford 1897: 148; Wood and Bright 1992: 189; Bright and Skidmore 2002: 399 (checklist); Bright 2014: 38.

Members of *Phrixosoma* may be recognized by the completely divided eye and by the 5-segmented (pedicel excluded) antennal funicle. In addition, the antennal club is asymmetrical with three recurved sutures, the pronotum is unarmed and the elytral declivity is convex with distinct striae and finely granulate interstriae.

Members of this genus are monogamous and are found under the bark of limbs and trunks of trees in the family Guttiferae (Wood 2007).

The genus contains 22 species (Bright and Skidmore 2002). Three species are treated herein from the West Indies.

### Key to the species of *Phrixosoma* in the West Indies

1. Length 2.4 mm, 2.0 times longer than wide; Guadeloupe ..... *P. caraibicum* Schedl (p. 17)
- Length 1.8–2.1 mm, either 1.8 times longer than wide or 2.2 times longer than wide ..... **2**
- 2(1). Length 2.1 mm, 2.2 times longer than wide; Cuba ..... *P. parvum* Blackman (p. 17)
- Length 1.8–1.9 mm, 1.8 times longer than wide; Saint Lucia and Saint Vincent and the Grenadines ..... *P. antillicum* Bright, sp. nov. (p. 16)

### *Phrixosoma antillicum* Bright, sp. nov.

Figures 419, 489.

**Type Material.** **HOLOTYPE** (sex?) labeled: “WEST INDIES: **ST. VINCENT:** Hermitage Forest, E. of Spring Valley, 15–27.VIII.2006, forest edge FIT and Malaise trap, 348 m., S. and J. Peck” / “HOLOTYPE *Phrixosoma antillicum* D. E. Bright 2016” (SBPC [CNCI]). **PARATYPES** (2) 1 labeled: “**ST. LUCIA:** Barre de L’Isle, canopy FIT, 13.9368°N, 60.9593°W, 08–14 JULY 2009, 340 m, C. A. Maier and M. L. Gimmel” (WIBF) and 1 labeled: “SABA: NETH. ANTL.; trail to Mt. Scenery; 17.63132N, 63.3879W; 638 m elev, 20 MAY 2008; beating, D. S. Sikes et al” (WIBF).

**Description (sex?).** Length 1.8–1.9 mm, 1.8 times longer than wide. Frons convex, with a fine, shining, weakly elevated longitudinal carina extending from epistomal margin to level of upper margin of eyes; surface dull, minutely reticulate, densely, very finely granulate over entire surface, with short, fine, yellowish setae. Antennal club broadly oval, 1.1 times longer than wide, widest distally, with two weakly arcuate, transverse sutures. Pronotum 1.9 times wider than long, widest at base; sides broadly arcuate, strongly converging toward broadly rounded anterior margin; basal margin with a fine raised line except opposite scutellum; entire surface evenly, weakly rugose, moderately shining, with short, yellowish setae. Elytra (measured from scutellum to apex) 1.3 times longer than wide; basal margins broadly arcuate, with closely placed very fine crenulations; sides parallel on basal half, strongly arcuate and converging to narrowly rounded apex; discal striae moderately impressed in regular, even, longitudinal rows, punctures small, closely placed, each with a minute seta; discal interstriae 2.0 times wider than striae, flat, each with three rows of narrow scales, scales in median row longer and more erect. Declivity unmodified; striae and interstriae as on disc.

**Distribution.** This species is known from Saint Lucia and Saint Vincent and the Grenadines.

**Etymology.** This species is named for its geographical distribution.

**Comments.** Adults of this species may be distinguished by their smaller size, by the fine, longitudinal carina on the frons and by the distribution. The sexes are virtually indistinguishable.

***Phrixosoma caraibicum* Schedl**

*Phrixosoma caraibicum* Schedl 1966: 101; Bright 2014: 38.

*Phrixosoma caraibica*: Wood and Bright 1992: 189.

**Description (sex?).** Length 2.4 mm, 2.0 times longer than wide. Frons convex, without a discernable longitudinal carina; surface dull, minutely reticulate, densely, very finely granulate over entire surface, with short, fine, yellowish setae. Antennae missing from holotype. Pronotum 1.3 times wider than long, widest at base; sides broadly arcuate, strongly converging toward broadly rounded anterior margin; basal margin with a fine raised line except opposite scutellum; entire surface evenly, weakly rugose, moderately shining, with short, yellowish setae. Elytra (measured from scutellum to apex) 1.5 times longer than wide; basal margins broadly arcuate, with closely placed, very fine crenulations; sides parallel on basal half, strongly arcuate and converging to narrowly rounded apex; discal striae moderately impressed in regular, even, longitudinal rows, punctures small, closely placed, each with a minute seta; first discal interstriae 2.0 times wider than striae, second interstriae 4.0 times wider than striae, remaining interstriae 2.0 to 3.0 times wider than striae, all interstriae flat, densely, minutely rugose, vestiture mostly absent (rubbed). Declivity unmodified; striae and interstriae as on disc.

**Distribution.** This species is known from Guadeloupe.

**Specimen examined. GUADELOUPE:** Island record only (1–NHMW).

**Comments.** The above description was prepared from the holotype. No other specimens have been seen. The antennae are missing from the holotype, having been removed and separately slide-mounted by Schedl.

Adults of this species are the largest specimens of this genus known from the West Indies. The holotype is badly rubbed so the vestiture is not described but specimens should be readily recognized by the large size, distribution and by the characters mentioned in the above description.

***Phrixosoma parvum* Blackman**

*Phrixosoma parva* Blackman 1943a: 393; Wood and Bright 1992: 190.

*Phrixosoma parvum*: Bright 2014: 39.

**Description (sex?).** Length 2.1 mm, 2.2 times longer than wide. Frons convex, weakly concave above epistomal margin; surface densely, finely granulate, dull, with abundant, short, yellowish setae. Eye almost completely divided, halves connected by one row of facets, space between halves with short, yellowish setae as on frons. Pronotum 1.1–1.2 times longer than wide; densely, evenly granulate over entire surface, with short, recumbent setae. Elytra 1.5 times longer than wide; discal striae distinctly impressed, with large, close punctures; discal interstriae slightly wider than striae, with short, semierect setae in three rows, setae in center row slightly longer, setae three-ranked from base of disc to declivity, slightly irregular near base except on interstriae 1 where three rows are distinct. Declivity convex, unmodified except interstitial setae very slightly longer.

**Distribution.** This species is known from Cuba.

**Specimen examined. CUBA:** Cayamas / E. A. Schwarz (1–USNM).

**Comments.** The above diagnosis was prepared from the holotype. I have seen no other specimens.

## TRIBE HYLASTINI

### Genus *Hylastes* Erichson

*Hylastes* Erichson 1836: 47; Wood and Bright 1992: 43; Bright and Skidmore 2002: 356 (checklist); Bright 2014: 13.

Members of *Hylastes* may be readily recognized by the elongate, punctured pronotum, by the subrostrate head, by the transverse, unarmed basal margins of the elytra and by the head which is visible from above. In addition, the antennal funicle is 6-segmented (pedicel excluded), the antennal club is conical with the basal segment usually longer than the others, the elytral striae are not impressed and the declivity is evenly convex and unarmed.

Members of this genus are often confused with weevils in the genus *Rhyncolus* Germar (Curculionidae: Cossoninae: Rhyncolini). The close resemblance is superficial, caused by convergent evolution because both *Rhyncolus* and scolytids occur under bark. The two genera are easily distinguished; adults of *Hylastes* species have elongate, oval eyes, those of *Rhyncolus* species have round eyes. In addition, adults of *Rhyncolus* species bear a distinct hypostomal tooth near the mandibles, while those of *Hylastes* bear no such tooth. Numerous other characters distinguish the two genera.

The species of *Hylastes* occur under the bark in the lower boles and roots of pine trees.

Fifteen species of *Hylastes* occur in the New World (Wood 1982), two of these are known to occur in the West Indies; one additional species is found in southern Florida and may eventually be found in the Greater Antilles where pines occur.

### Key to the species of *Hylastes* in the West Indies

1. Frons entirely devoid of a median carina; small species, less than 3.5 mm in length; frons densely punctured, with abundant, short, hairlike setae; pronotum closely punctured, each puncture separate; length 2.3–2.8 mm; Dominican Republic ..... *H. tenuis* Eichhoff (p. 19)
- Frons with a definite median carina; larger species, 3.3–5.0 mm ..... **2**
- 2(1). Stout species, 2.4–2.5 times longer than wide; frons punctured on lower portion, coarsely granulate above upper eye level; discal interstriae coarsely roughened and sculptured; Florida ..... *H. salebrosus* Eichhoff (p. 18)
- Slender species, 3.4 times longer than wide; frons distinctly granulate, each granule bearing a flattened seta; pronotum deeply punctured, two to four punctures may overlap, forming an elongate puncture; length 3.8 mm; Jamaica ..... *H. suspectus* Bright (p. 18)

### *Hylastes salebrosus* Eichhoff

*Hylastes salebrosus* Eichhoff 1868b: 146; Wood and Bright 1992: 61.

This species has not been recorded or collected from the West Indies but it may occur in the Bahamas, Cuba or the Dominican Republic. It occurs in the southeastern United States as far south as Biscayne Bay in Dade County, Florida. It should be found in the roots and stumps of dead or dying pines. It is not included in the species count nor in Appendix 2.

### *Hylastes suspectus* Bright

*Hylastes suspectus* Bright 1972: 31; Wood and Bright 1992: 62.

**Description (Female).** Length 3.8 mm, 3.4 times longer than wide. Frons generally convex, dull, shallowly punctured and distinctly granulate, each granule distinctly elevated and bearing an erect, spatulate seta, surface with a distinct, elevated median carina extending from epistomal margin to upper level

of eyes; epistoma broadly, shallowly concave. Antennal club 1.2 times longer than wide. Pronotum 1.4 times longer than wide, widest in front of middle; surface dull, deeply punctured, punctures large, deeply impressed, often two to four punctures coalesce into one elongate puncture; interpuncture space convex, minutely reticulate; median line evident, extending from near base to anterior third. Elytra 1.9 times longer than wide, narrower than pronotum; surface shining; striae weakly impressed, punctures large, deeply impressed; interstriae 2.0 times wider than striae, strongly rugose, weakly granulate. Declivity convex; interstriae more strongly convex, more strongly granulate than on disc; vestiture consisting of short, hairlike setae on discal interstriae, becoming scalelike and more abundant on declivity.

**Male.** Unknown.

**Distribution.** This species is known from Jamaica.

**Specimen examined. JAMAICA:** Saint Andrew Parish, Hope River, 26 May 1908, M. Cameron (1–NHML).

**Comments.** This species is of questionable validity. In the original description, I expressed the opinion that this species might be introduced into Jamaica; however, the species could not be matched to any North American, European, or Asian species. No additional specimens have been seen despite the extensive collections from Jamaica obtained by H. F. Howden and E. C. Becker housed in the CNCI.

### *Hylastes tenuis* Eichhoff

Figures 364, 420, 490.

*Hylastes tenuis* Eichhoff 1868b: 147; Wood and Bright 1992: 62; Bright and Skidmore 1997: 14; Bright and Skidmore 2002: 14.

**Description (Female).** Length 2.3–2.8 mm, 2.8 times longer than wide. Frons weakly, transversely impressed just below upper level of eyes, slightly inflated on lower portion, transversely impressed just above epistomal margin, completely devoid of a median carina; surface reticulate with fine, close, deep punctures. Antennal club 1.2 times longer than wide. Pronotum 1.2 times longer than wide, widest near middle; interpuncture surface shining to dull, punctures small, close, deeply impressed; interpuncture space flat, smooth to minutely reticulate; median line obscure. Elytra 1.9 times longer than wide, slightly wider than pronotum; surface shining; discal striae impressed, punctures large, deeply impressed; discal interstriae as wide as striae, finely rugose, very finely granulate, punctures confused. Declivity convex; interstriae slightly wider than striae, more strongly convex, granules not evident; vestiture consisting of short, hairlike setae on discal interstriae, declivity with abundant scalelike ground cover and rows of longer bristles.

**Male.** Similar to female except for abdominal tergites.

**Distribution.** This species occurs across the United States from California to New York, south to Florida and central Mexico. In the West Indies it is known from the Dominican Republic and Haiti.

**Specimens examined. DOMINICAN REPUBLIC:** Province Pedernales, ca. 35 km. NNW Cabo Rojo, 1370 m, El Aceitillar, 26 Aug–09 Sept. 1988, pine forest flight intercept trap, M. A. Ivie, T. K. Philips and K. A. Johnson (10–WIBF, CNCI); Province Pedernales, ca. 30 km north of Cabo Rojo, 3290 ft., 21 July 1999, M. A. Ivie and G. O. Dominici, uv and mercury vapor light (2–WIBF); Province Pedernales, 30 km N. Cabo Rojo, 140 m, 19 Aug 1988, 1065 m, pine forest, under bark, M. Ivie, Philips and Johnson (2–WIBF); Pedernales, Sierra de Baoruco, Aceitillar, 23.6 km NE Pedernales, 1600 m, 14 June 2003 / C. Young, J. Rawlins, C. Nunez, R. Davidson: Acevedo, M. de la Cruz, open pine forest with grassland, uv light (2–CMNH); Pedernales, 30 km N Cabo Rojo, 1070 m, / 27 September 1991, R. Davidson, C. Young, S. Thompson, J. Rawlins, pine woods (3–CMNH). **HAITI:** Ferathe, Baptist Haiti Mission / 4.IV.1985, pheromone trap *Pinus occidentalis*, R. Billings (1–CNCI); Refuge, 22 km SE Fond Verrettes, 5500 ft., 18.VII.56, B. and B. Valentine (1–CNCI) [identified as *tenuis*].

**Records from literature. DOMINICAN REPUBLIC:** fthills cord. Cent. S. of Santiago, June '38, Dom Rep., Darlington (1–MCZ) (Atkinson 1989).

**Comments.** Wood (1982) treats two, very similar, largely sympatric, species, i.e., *H. tenuis* Blackman and *H. fulgidus* Eichhoff. Adults of these species are primarily distinguished by the shining, non-reticulate, interpuncture space on the pronotum (*H. fulgidus*) vs. the dull, reticulate, interpuncture space on

the pronotum (*H. tenuis*). My examination of hundreds of specimens from southern California indicated that this character is variable. Specimens from the same locality, collected on the same date, showed a complete range of variation from a dull to brightly shining interpuncture surface and from a smooth to slightly reticulate to densely reticulate surface. Two specimens from the same locality and collection event in the Dominican Republic displayed the pronotal character states of both *H. tenuis* and *H. fulgidus*. Other characters, such as size, number of socketed teeth on the anterior tibia and length of setae showed similar variability. For this study, I have used the older name for the West Indian specimens. Synonymy of the two above-mentioned species is not proposed at this time because more study is required.

## TRIBE HYLESININI

### Genus *Phloeoborus* Erichson

*Phloeoborus* Erichson 1836: 54; Wood and Bright 1992: 97; Bright and Skidmore 2002: 391 (checklist); Bright 2014: 25.

Adults of *Phloeoborus* species may be easily recognized by their very large size and stout body, by slightly fattened, conical antennal club with two transverse sutures and by the large mycangia on the pleural area of the female pronotum. In addition, the antennal funicle is 6-segmented (pedicel excluded) (Fig. 374), the frons is sexually dimorphic with the male impressed and the female convex, the eyes are large, oval and may almost meet of the vertex, the pronotum may be armed with large asperities or not, the elytral striae are usually impressed, the elytral interstriae are variously modified with transverse crenulations or granules and the elytral declivity is convex and unarmed.

This genus occurs in the in the tropical rainforest of the Neotropical Region. The species are xylophagus, boring into the wood of dying trunks and limbs. Twenty-four species are currently recognized (Wood 2007), one of these occurs in Jamaica.

### *Phloeoborus scaber* Erichson

Figures 374, 421, 491.

*Phloeoborus scaber* Erichson 1836: 55; Wood and Bright 1992: 100; Bright and Skidmore 1997: 22; Bright 2014: 26.

**Description (Male).** Length 7.1–8.7 mm, 1.9 times longer than wide; dark reddish-brown. Frons wider than long, distinctly arcuately impressed below eyes, impression divided by a longitudinal raised carina, lateral margins slightly elevated, bluntly carinate above antennal insertions, bearing a blunt convex protuberance before lateral margin; surface moderately shining, densely punctured except near carina, punctures large, shallowly impressed. Antennal club acuminate, 1.3 times longer than wide; two distinct sutures visible. Eyes coarsely granulate, nearly touching on vertex. Pronotum subquadrate, 1.5 times wider than long; sides broadly arcuate, anterior margin broadly rounded; surface moderately shining, roughly, closely punctured and asperate except for a small area on disc between median line and lateral margin, asperities more common on anterior and lateral areas; median line evident on disc, broad and impunctate; preplural area not foveolate. Elytra 1.2 times longer than wide; sides parallel, posterior margin broadly rounded; discal striae distinctly impressed in regular rows, punctures large, deep, separated by a distance equal to their own diameters; discal interstriae dull, minutely reticulate, convex, at least 3.0 times wider than striae, surface transversely rugose, rugae biserrate beyond middle, becoming uniseriate over declivity. Declivity convex, steep; striae and interstriae as on posterior portion of disc except tubercles on interstriae smaller, blunter, more widely spaced: ninth interstriae elevated, serrate from near middle of elytra to near apex.

**Female.** Similar in size and proportions to male. Frons not as deeply impressed; pronotal sculpture finer, preplural area foveolate, fovea fringed with yellowish setae; elytral sculpture finer.

**Distribution.** This species occurs from southern Mexico to northern South America. In the West Indies it is known from Jamaica.

**Specimens examined. JAMAICA:** Bath, July 1967, W. Klopp (1-FSCA); Portland Parish, Port Antonio, several dates and collectors (3-CNCI, IJCK); Saint Andrew Parish, Hardwar Gap, 11 July 1966, Howden and Becker (1-CNCI) and same locality, 19 July 1966, A. T. Howden (1-CNCI); Pt. Antonio, 2/13 (1) and 4/1/06 (2), A. E. Wright (3-CNCI).

**Records from literature. JAMAICA:** Dolphin Head, Jamaica, 22 March 1955, A. M. Nadler (Schedl 1966); Bonnie View, Port Antonio, 25-VII-1952, at light, A. M. Laessle (Wood 2007).

**Comments.** According to Blandford (1897), this is probably the most common species of the genus. The adults vary greatly in the structure and placement of the pronotal and elytral punctures and asperities and in the degree of development of the frontal impression.

Host plants include *Brosimum* sp., *Ficus* sp. and *Protium tenuifolium* (Wood 2007).

The adults of this species are the largest specimens of Scolytidae found in the West Indies.

## TRIBE BOTHROSTERNINI

### Genus *Bothrosternus* Eichhoff

*Bothrosternus* Eichhoff 1868b: 150; Wood and Bright 1992: 215; Bright and Skidmore 2002: 305 (checklist); Bright 2014: 42.

Members of *Bothrosternus* may be distinguished by the straight, transverse sutures of the antennal club, by the widely separated anterior coxae with a transverse, subcarinate ridge between the coxae, by the excavated and pubescent pleural area of the female prothorax and by the costate lateral margin of the pronotum.

Members of this genus construct galleries in the pith of small twigs or vines where they cultivate a fungus used as food for the larvae.

Twelve species are placed in this genus (Bright and Skidmore 2002) but the taxonomy is uncertain. One species has been found in the West Indies.

### *Bothrosternus isolatus* Bright

Figures 375, 422, 492.

*Bothrosternus isolatus* Bright 1972: 28; Wood and Bright 1992: 215; Bright and Skidmore 1997: 45; Bright and Skidmore 2002: 34.

**Description (Male).** Length 2.4–2.5 mm; 2.2 times longer than wide. Frons transversely impressed just below level of eye emargination, upper portion convex, reticulate, moderately shining; surface punctured in median area, reticulate at lateral angles; epistomal region flattened below impression; vestiture consisting of stout, yellowish setae restricted to transverse impression and along lateral margin to near upper level of eyes. Antennal club 2.0 times longer than wide; funicle densely pubescent. Pronotum 1.1 times wider than long, widest near middle; sides strongly arcuate; anterior margin broadly rounded; surface closely, coarsely punctate, punctures reticulate, longitudinally confluent; interpuncture space smooth, shining, moderately elevated; vestiture consisting of extremely short, fine, spatulate setae scattered over surface. Elytra 1.6 times longer than wide; discal striae deeply impressed, punctures not visible; discal interstriae weakly convex, 4.0 times wider than striae, dull, reticulate, sparsely granulate, granules more prominent on interstriae 1. Declivity convex, interstriae 1 and 2 faintly impressed; striae more deeply impressed than on disc; interstriae as on disc except granules more prominent; interstriae 1 and 2 extending to apex, 3 joining 9; vestiture consisting of a row of spatulate setae on each interstriae on posterior third of elytra.

**Female.** Length 2.6 mm, 2.1 times longer than wide; dark reddish-brown. Frons transversely flattened above epistoma to level of eye emargination, surface of flattened area densely punctate-granulate

with a prominent, transverse, beaded elevation occupying median three-fourths slightly above level of antennal insertion, flattened area with long, abundant setae extending along sides of eyes nearly to upper eye level; median two-thirds from impressed area to vertex strongly convex, glabrous, shining, marked with extremely fine, close, transverse lines; area above eye level dull, weakly punctured, rugose-reticulate. Pronotum and elytra as in male.

**Distribution.** This species is known from Jamaica to Saint Lucia.

**Specimens examined. DOMINICA:** G'leau Gommier, March 17, 1956, J. F. G. Clarke (1-USNM); 1.6 mi. W of Pont Casse, IV.28.1964, O. S. Flint (1-CNCI); Pt. Casse, 18 August 1986, C. W. and L. O'Brien (1-CNCI); Clarke Hall, 21–31 Jan. 1965, W. W. Wirth, light trap (1-USNM). **GADELOUPE:** BT., Saint Sofiaia, 6 km SW Ste. Rose, V.26.1985, C. W. and L. B. O'Brien (1-CNCI). **JAMAICA:** Saint Andrew Parish, Clydesdale, 18 July 1966, H. and A. Howden (1-CNCI). **SAINT LUCIA:** Barre de L'Isle, 25–28 June 2009, uv light, E. A. Ivie (1-WIBF), same locality, 29 June 2009, 340 m, uv light trap, C. A. Maier and M. L. Gimmel (3-WIBF); Gros Piton, 14–24 May 2009, uv light, R. C. Winton and E. A. Ivie (1-WIBF).

**Comments.** Since this species is the only representative of *Bothrosternus* known from the West Indies, it may be easily recognized by the characters summarized above.

### Genus *Cnesinus* LeConte

*Cnesinus* LeConte 1868: 171; Wood and Bright 1992: 205; Bright and Skidmore 2002: 312 (checklist); Bright 2014: 43.

Members of *Cnesinus* may be readily distinguished by the elongate, convex pronotum with elongate punctures resembling longitudinal scratches, by the rounded lateral margin of the pronotum, by the rostrum which is wider than the distance between the eyes and by three transverse sutures on the elongate antennal club. In addition, the antennal funicle is 6-segmented (pedicel excluded), the procoxae are moderately separated, the elytral striae are usually narrow and impressed, the elytral interstriae are weakly convex and the declivity is convex and may be impressed and frequently armed with granules or unarmed.

This is a large genus in the New World, with over 100 described species (Wood and Bright 1992). Seven species are herein recorded from the West Indies.

### Key to the species of *Cnesinus* in the West Indies

1. Declivital interstriae 3 strongly elevated on lower half, with a row of large granules on summit; declivital interstriae 2 with several smaller granules on inner slope; declivital interstriae 1 and 3 impressed below elytral surface; length 3.0–3.4 mm; Cuba ..... ***C. cubensis* Blackman** (p. 24)
- Declivital interstriae not elevated or very weakly elevated; declivital interstriae 1 and 2 weakly to not impressed; length less than 3.0 mm ..... **2**
- 2(1). Elytral vestiture abundant, covering entire elytra from base to apex ..... **3**
- Elytral vestiture largely confined to declivital area, may extend to elytral base on interstriae 1 ..... **4**
- 3(2). Female frons with a distinct, transverse carina just above level of antennal insertion; male frons without a carina but with two swellings above level of antennal insertions; elytra evenly light to dark reddish-brown; length 2.2–2.5 mm; Greater Antilles ..... ***C. strigicollis* LeConte** (p. 28)
- Female frons without a transverse carina; male frons without small swellings near antennal insertions; elytra light to dark reddish-brown, often with an arcuate band of dark brown scales

- at declivital base or declivity darker brown; length 2.2–2.5 mm; Lesser Antilles .....  
 ..... *C. guadeloupenis* Eggers (p. 25)
- 4(2). Larger species, 2.4–2.5 mm in length; declivital interstitial setae hairlike on female, these stouter on male; female frons with a small tubercle on epistoma, male frons deeply, transversely impressed; Dominican Republic ..... *C. amplus* Bright, sp. nov. (p. 23)
- Smaller species, less than 2.4 mm in length; interstitial setae elongate, narrow or spatulate-shaped; frons variable ..... **5**
- 5(4). Frons of male and female densely pubescent over entire surface from epistoma to upper eye level of eyes; length 2.0–2.3 mm; Guadeloupe, Dominica, Saint Lucia, Saint Vincent and the Grenadines ..... *C. longicollis* Eggers (p. 27)
- Frons of male and/or female pubescent along epistoma and along inner margin of eye ..... **6**
- 6(5). Scalelike setae on declivital interstriae very short, as long as or shorter than interstitial width; length 2.1 mm; Montserrat ..... *C. brevisetosus* Bright, sp. nov. (p. 24)
- Setae on declivital interstriae slightly longer than interstitial width; length 1.7–2.2 mm; Guadeloupe, Martinique, Dominica, Saint Lucia ..... *C. insularis* Eggers (p. 26)

***Cnesinus amplus* Bright, sp. nov.**

Figure 4.

**Type Material.** HOLOTYPE (female) labeled: “DOMINICAN REPUBLIC: La Vega, vic. La Cienaga, July 18 1996, R. Turnbow” / “HOLOTYPE *Cnesinus amplus* D. E. Bright 2016” (RHTC [FSCA]). ALLOTYPE labeled with same data as holotype plus my allotype label (RHTC [FSCA]).

**Description (Female).** Length 2.4–2.5 mm, 2.2 times longer than wide; elytra, legs, antenna reddish, abdomen, head and pronotum black. Frons deeply, transversely impressed from epistoma to above level of eye emargination, lateral margins of impression acutely elevated, convex above, with a strongly elevated, recurved, transverse carina above level of eye emargination; area above carina strongly convex, reticulate, moderately shining; vestiture sparse, with a few setae present along epistomal margin; epistoma bearing a small tubercle at mid-point. Pronotum as long as wide, widest at middle; sides weakly arcuate, anterior margin broadly rounded; discal surface very densely punctures, with elongate punctures, interspaces shining, smooth; vestiture hairlike, sparse, inconspicuous, slightly longer on anterior and lateral areas. Elytra 1.5 times longer than wide; discal striae punctured in regular rows, punctures moderately large, moderately deep; discal interstriae 2.0 times wider than striae, brightly shining, weakly crenulate, glabrous except for a very few, widely scattered setae. Declivity convex, interstriae 1 weakly impressed, remainder of interstriae not impressed; each interstriae with an indistinct row of minute tubercles and a median row of longer, erect, stout, bristle-like setae.

**Male.** Similar in size and proportions to female, darker in color. Frons similar to female except transverse impression narrower, with a broad, slightly shining epistomal callus and a transverse row of stout setae, transverse carina and epistomal tubercle absent, a few distinct, erect, stout setae are present between eyes and along lateral margins of impression.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** From *amplus*, Latin for large, referring to the size of the adult.

**Comments.** Adults of this species may be recognized by their larger size, by the hairlike interstitial setae on the female declivity and the slightly stouter setae on the male declivity and by the small tubercle on the female epistoma. Males may be recognized by the characters of the frons mentioned in the above description.

***Cnesinus brevisetosus* Bright, sp. nov.**

Figure 6.

**Type Material.** HOLOTYPE (male) labeled: “MONTSERRAT: Ridge above Hope Ghaut, 1051 ft., 16°45.169’N, 62°12.736’W, K. A. Marske and For. Staff, canopy fogging, dawn” / “16 May 2002” / “HOLOTYPE *Cnesinus brevisetosus* D. E. Bright 2016” (WIBF [CNCI]).

**Description (Male).** Length 2.1 mm, 2.5 times longer than wide; reddish-brown. Frons weakly, transversely impressed just above epistoma, strongly convex above, convex area moderately shining, densely minutely reticulate and very weakly, minutely punctured, impressed area minutely reticulate; surface with scattered, short, hairlike setae, slightly more abundant along inner margin of eyes. Epistoma slightly elevated, shining. Pronotum 1.1–1.2 times longer than wide; sides straight, very slightly incised behind middle, anterior margin broadly rounded; discal surface glabrous, with densely placed, elongate punctures on anterior half and with smaller, less elongate punctures on posterior half, interpuncture space brightly shining. Elytra 1.4–1.5 times longer than wide; sides parallel, apex narrowly rounded; discal striae weakly impressed, punctures large, slightly impressed; discal interstriae flat, 2.0 times wider than striae, weakly crenulate and irregularly punctured; glabrous. Declivity convex, very slightly impressed between interstriae 3; striae slightly more deeply impressed than on disc, punctures slightly more impressed; interstriae narrower than on disc, all interstriae with a median row of closely placed, small granules; vestiture abundant, consisting of a median row of erect, spatulate scales in each interstriae, these as long as interstitial width.

**Female.** Unknown.

**Distribution.** This species is known from Montserrat.

**Etymology.** From *brevis*, Latin for short and *seta*, Latin for setae, referring to the short setae on the elytra.

**Comments.** The male of this species may be distinguished by the short interstitial scales on the declivity and by the sparse pubescence on the frons.

***Cnesinus cubensis* Blackman**

Figure 5.

*Cnesinus cubensis* Blackman 1943a: 371; Wood and Bright 1992: 207; Bright 2014: 44.

**Description (Male).** Length 3.0–3.4 mm, 2.4 times longer than wide; dark reddish-brown. Frons weakly, transversely concave from epistoma to level of eye emargination, with a dense brush of short, yellowish setae just above epistoma, these directed dorsad; surface above strongly convex, nearly impunctate, very minutely punctured on area above and lateral. Antennal club narrowly oval, 2.0 times longer than wide, with two distinct transverse sutures. Pronotum 1.1 times longer than wide, widest in front of middle; sides straight, subparallel, slightly converging toward base, anterior margin broadly rounded; discal surface moderately shining, densely punctate-strigose, with numerous, short, recumbent yellowish setae. Elytra 1.6 times longer than wide; sides parallel on basal two-thirds, broadly rounded at apex; discal surface shining, with striae punctured in regular rows, punctures large, weakly impressed; discal interstriae flat, slightly wider than striae, with a sparse median row of very small granules. Declivity convex; interstriae 3 strongly elevated on lower half, with several large granules on summit and on lateral slope; interstriae 1 and 2 strongly impressed; all interstriae with small but distinct granules; vestiture consisting of numerous, elongate, flattened, yellowish scales covering surface of elytra from basal margins to apex.

**Female.** Unknown.

**Distribution.** This species is known from Cuba.

**Specimens examined. CUBA:** Cayamas (holotype-USNM); Cienfuegos Province, Jardín Botánico de Cienfuegos, 73 m, mercury vapor light, 21.V.2013, A. B. T. Smith, F. Cala-Riquelme, A. Deler-Hernández (1-CMNO); Santa Clara, north end of Lago del Hanabanilla, 1 July 1990, J. E. Rawlins, S. Thompson (1-CMNH).

**Comments.** Males of this species may be easily recognized by the strongly elevated declivital interstriae 3 which bears several large granules along the summit.

***Cnesinus guadeloupensis* Eggers**

Figures 9, 361, 376, 423, 493.

*Cnesinus guadeloupensis* Eggers 1940: 137; Wood and Bright 1992: 209.

**Description (Female).** Length 2.2–2.5 mm, 2.4 times longer than wide; elytra light to dark reddish-brown, often with an arcuate band of darker setae at base of declivity. Frons strongly, transversely impressed above epistoma, convex above impression; surface impunctate, minutely reticulate, glabrous, lateral area near eye with long, yellowish, scalelike setae; epistomal margin acutely elevated, area above margin bearing a row of stout, yellowish setae. Antennal club 2.0 times longer than wide, with three transverse sutures. Pronotum as long as wide, widest in front of middle, sides straight on basal two-thirds, converging to base, anterior margin broadly rounded; discal surface longitudinally strigose, ridges shining, grooves slightly wider than ridges, dull, obscurely punctured; vestiture hairlike, scattered along lateral margin and covering anterior slope. Elytra 1.7 times longer than wide; sides straight, parallel on basal three-fourths, apex broadly rounded; discal striae weakly impressed, punctures large, distinct; discal interstriae 2.0–3.0 times wider than striae, flat, subcrenulate; vestiture moderately abundant over entire surface, consisting of narrow, recumbent, hairlike scales and median interstitial rows of longer, erect, hairlike scales, elytral surface visible beneath vestiture. Declivity convex, steep, very weakly impressed between interstriae 3; striae 1 impressed, 2 and 3 less so; each interstriae with a median row of small, rounded granules.

**Male.** As in female except frons convex area above epistomal impression nearly flat, with scattered shorter setae and epistomal margin slightly more evident with one transverse row of stout setae.

**Distribution.** This species occurs throughout the West Indies.

**Specimens examined. DOMINICAN REPUBLIC:** Pedernales, 23.5 km N Cabo Rojo, 540 m, 13–19 July 1990, L. Masner, J. Rawlins, C. Young, deciduous forest intercept trap (1-CMNH). **GRENADA:** Saint Andrew, Mirabeau Agriculture Laboratory, 2.IV.1990, A. Thomas, light trap (2-SBPC); Saint George Par., Grand Anse, 21–25.V.1992, H. V. and R. M. Baranowski, blacklight trap (1-FSCA), same locality, various dates and collectors, light trap (5-SBPC); Point Salinas, 27.VI.1987, R. E. Woodruff (1-REWC). **GADELOUPE:** Basse-Terre, Pointe a Lezard, blacklight trap, 20 May 2012, R. Turnbow (2-RHTC); Basse-Terre, Pigeon, 10 Sept 2010, R. Turnbow (1-RHTC); Trois-Rivières, Grand Anse, 10–15.VII.1991, D. and J. P. Roguet (1-CNCI); Basse-Terre: Pigeon, jct. Bois Mahler rd., N16°46.41', W61°09.61', 31.V.2012 / streamside forest uv trap, 3 m, S. Peck, collr. (1-SBPC); Basse-Terre: Mahault Rivière Colas, 80 m, N16°11.26', W61°46.71' / xeric forest, streamside uv trap, 15.V.2012, S. Peck, collr. (3-SBPC, CNCI); Basse-Terre: Monchy, ravine Renoir, N16°05.41', W61°45.98', xeric mangrove transition forest uv trap, 19.V.2012, S. Peck (3-SBPC, CNCI). **MARTINIQUE:** Anse Dufour, Anse L'Ane, 13.VII.2001, Roguet, D., Cauvin, M., Marquet, J. (1-CNCI); Le Lorrain, Morne Maxime, 5.VII.2001, Roguet, D., Marquet, J. and J. Cauvin (3-CNCI); Presquille de la Caravelle, 22.VII.2001, Roguet/Marquet (1-CNCI); 2 km E Saint Esprit, May 17, 1985, C. W. and L. O'Brien (3-CNCI); 5 km SE Le Marin, Forêt Creve Coeur, 35 m / dry forest uv trap, 19.VII.2012, S. Peck (15-SPBC, CNCI). **MONTSERRAT:** Woodlands, Mahogany Rd., 21 July 2005 (1-WIBF); Woodlands, Cassava Ghaut, Beattie House, 30 May-06 June 2002, uv light, M. A. Ivie (1-WIBF); Woodlands, Riverside House, 140 ft., 24 July 2005, uv light (1-WIBF); Cassava Ghaut, Beattie House, 23 Mar-03 Apr. 2002, 632 ft., A. Krakower, uv light (1-WIBF), same locality, 06–12 June 2002, A. Krakower, uv light (1-WIBF), same locality, 21–30 June 2002, 632 ft., M. A. Ivie, uv light (1-WIBF), same locality, 30 May-06 June 2002, uv light, M. A. Ivie (1-WIBF); Blades, 6.VI.1993: Jeffers, blacklight trap (1-FSCA); Saint Anthony Par., Plymouth, 8.VIII.1992, H. V. and R. M. Baranowski, blacklight trap (1-FSCA). **SAINT LUCIA:** Escap Community, Micoud, trail to beach, 7.VII.2009 / in small dead branch, D. E. Bright (6-CNCI); Micoud Dist., Escap Community, 55 m, various dates and collectors (3-WIBF); nr. Micoud, trail toward Fond Bay, 15 m, A. R. Cline, S. D. Gaimari, various dates in May 2009, blacklight trap (15-CSCA, CNCI); Chassin trap site, 94 m, 17–23 May 2009, uv light, R. C. Winton and E. I. Ivie (1-WIBF); Castries, Union Ag. Sta., 24–25.V.1987, blacklight trap, R. E. Woodruff (2-REWC); Mon Repos, Fox Grove Inn, 80 m, 8–18.VII.2007 / uv light, S.

and J. Peck (1–SBPC). **SAINT VINCENT AND THE GRENADINES:** *Saint Vincent*, Biabou, 20.VI.1987, black-light trap, R. E. Woodruff (1–REWC); *Canouan Island*, Corbec Bay, / dry shrub woodland, uv trap, 7.VIII.08, S. Peck and M. DeSilva (3–SBPC); *Canouan Island*, Mahaut Bay, 7.VIII.2008 / dry shrub woodland, uv light, 100m, S. Peck and M. DeSilva (2–SBPC); *Mayreau Island*, 21.VIII.2009, uv trap, S. Peck (1–SBPC); *Union Island*, Chatham Bay, / dry hillside woodland, uv light, S. Peck and M. DeSilva (1–SBPC).

**Comments.** Adults of this common West Indian species may be recognized by the arcuate band of dark brown setae at the declivital base or by the presence of darker brown setae on the declivity. In addition, the female frons is flattened and does not bear a transverse carina or swelling. The male frons does not have small swellings near the antennal insertions. The elytral vestiture is abundant and extends from the base to the elytral apex.

This species was originally described from at least two specimens, maybe three. The mounting card in the MNHN has two specimens on it, one is missing the head and the other one, on the right side, is in good condition and is here designated the lectotype. It bears the labels “Guadeloupe, Vitrac” / “3 Riv.” and an illegible word / Collection E. Fleutiaux” / “*Cnesinus guadeloupensis* n. sp. Type Eggers det. 1932” / a red label with “TYPE” and my lectotype label.

### *Cnesinus insularis* Eggers

Figure 7.

*Cnesinus insularis* Eggers 1940: 138; Wood and Bright 1992: 209.

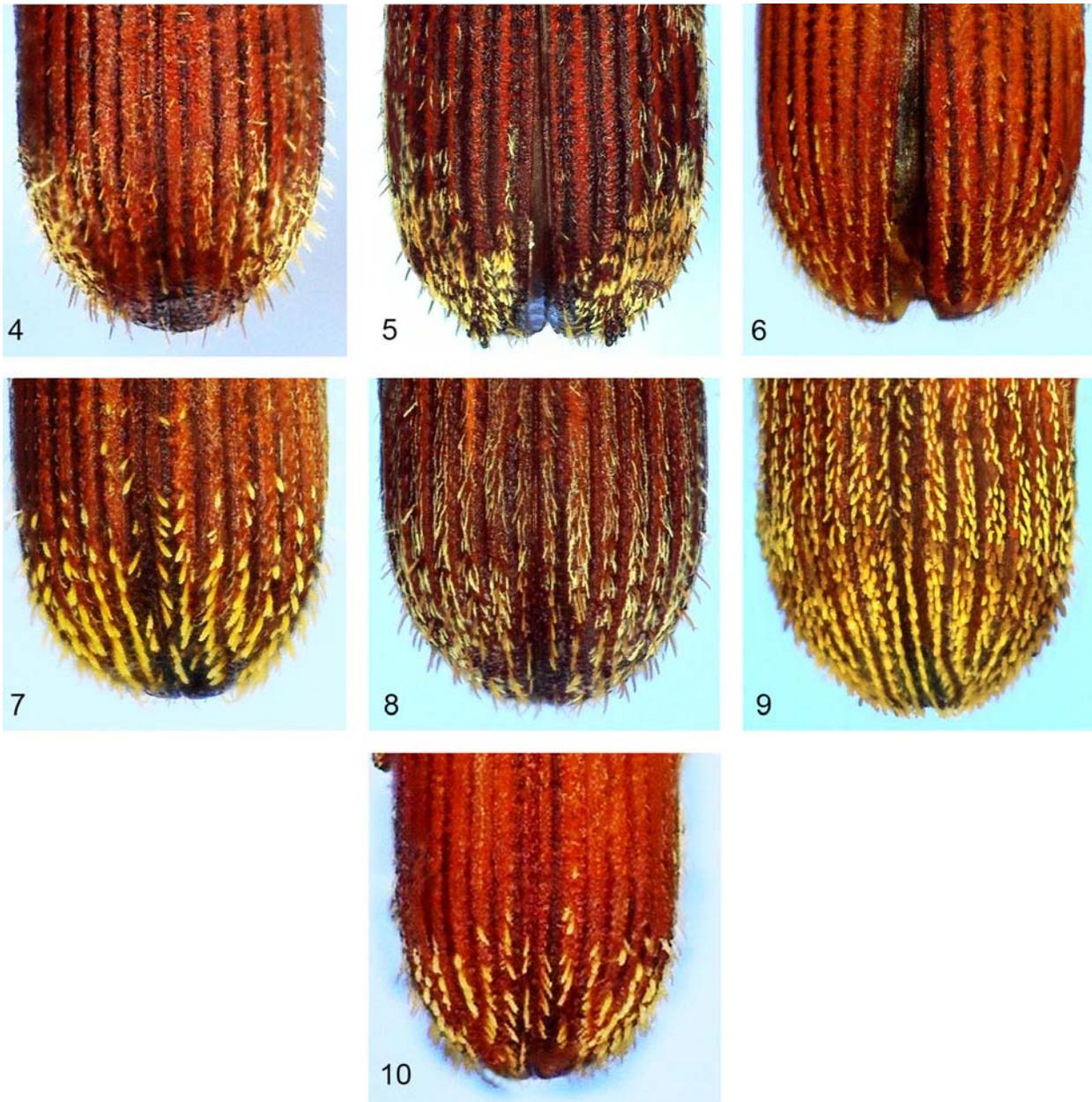
**Description (Male).** Length 1.7–2.2 mm, 2.5 times longer than wide; dark reddish-brown. Frons transversely impressed just above epistoma, strongly convex above, convex area moderately shining, minutely punctured, impressed area minutely reticulate, usually with a pair of obscure swellings; surface with scattered, short, hairlike setae, somewhat more concentrated along inner margin of eyes. Epistoma slightly elevated, bearing a transverse row of erect, short, yellowish, hairlike setae. Antennal club 2.0 times longer than wide, with long setae on margin, these as long or longer than club width. Pronotum as long as wide; sides straight, slightly converging behind middle, anterior margin broadly rounded; discal surface glabrous, with densely placed, elongate punctures, interpuncture space brightly shining. Elytra 1.4 times longer than wide; sides parallel, apex narrowly rounded; discal striae weakly impressed, punctures small, very slightly impressed; discal interstriae flat, 2.0 times wider than striae, weakly crenulate and irregularly punctured; interstriae 1 with a median row of erect, hairlike to spatulate scales extending to base. Declivity convex, slightly impressed between interstriae 3; striae slightly more deeply impressed than on disc, punctures slightly more impressed; interstriae narrower than on disc, interstriae 2 and 3 each with a median row of very small granules; interstriae 3 slightly more strongly elevated, narrow; vestiture confined to declivital area except on interstriae 1 where it extends to base.

**Female.** Frons convex, less deeply impressed than in male, without pair of obscure swellings; otherwise very similar to male.

**Distribution.** This species is known from Guadeloupe, Dominica, Martinique and Saint Lucia.

**Specimens examined. DOMINICA:** Springfield Estate, Mt. Joy, 31.V-16.VI.2004 / ridge top forest flight intercept trap, S. and J. Peck, 550 m. (1–SBPC); Springfield Estate, 29.V-16.VI.2004, forest edge Malaise trap, S. and J. Peck (1–SBPC); Springfield Estate, 30.V-16.VI.2004, 830–860 m, mature second forest flight intercept trap, S. and J. Peck (1–SBPC); 1250', 5 mi E Dublanc, 20 Aug 1986, C. W. and L. O'Brien (1–CNCI). **GADELOUPE:** Gourbryre, Acc. 4860 (2–AMNH); Trois Rivières (lectotype-USNM); Basse-Terre: Sofaia, 6 km. SW Ste. Rose, V-26–1985, C. W. and L. B. O'Brien (1–CNCI). **MARTINIQUE:** Grand Rivière, Fond Marin, 21.VII.2011, Roguet/Marquet (1–CNCI). **SAINT LUCIA:** Chasssin trap site, 94 m, various dates in May and June 2009, uv light, various collectors (6–WIBF); Quilles Forest Reserve, 323 m, 10 May 2009, on log, I. A. Foley and R. C. Winton (3–WIBF); same locality and collectors, “Plagiopogon log”, 07–10 May 2009 (3–WIBF).

**Comments.** Adults of this species may be recognized by the deeply, transversely impressed frons extending from the epistoma to the level of the eye emargination, by the steeply convex elytral declivity with the first and second interstriae slightly impressed and by the presence of a row of narrow, erect scales in each declivital interstriae.



**Figures 4–10.** Declivities of *Cnesinus* spp. **4)** *C. amplus*. **5)** *C. cubensis*. **6)** *C. brevisetosus*. **7)** *C. insularis*. **8)** *C. strigicollis*. **9)** *C. guadeloupensis*. **10)** *C. longicollis*.

The lectotype from Trois Rivières, Guadeloupe, designated by Anderson and Anderson (1971) was examined.

***Cnesinus longicollis* Eggers**

Figure 10.

*Cnesinus longicollis* Eggers 1940: 137; Wood and Bright 1992: 209.

**Description (Female).** Length 2.0–2.3 mm, 2.9 times longer than wide; reddish-brown. Frons slightly flattened and slightly concave below upper level of eyes, convex above, weakly, transversely impressed above epistoma; vestiture abundant over entire surface from epistomal margin to upper level of eyes and

laterally almost from eye to eye, consisting of abundant, short, yellowish setae, all of equal length. Pronotum 1.1–1.2 times longer than wide, widest in front of middle; sides straight to very weakly emarginate from widest point to base, anterior margin broadly rounded; surface glabrous, densely, minutely punctured, punctures close, twice as long as wide; discal interpuncture spaces smooth, brightly shining, becoming more obscurely punctured and somewhat duller on anterior quarter. Elytra 1.9 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae not impressed, punctured in regular rows, punctures weakly impressed, moderately large; discal interstriae flat, 1.5–2.0 times wider than striae, glabrous, very minutely rugulose. Declivity steeply convex; striae slightly impressed, deeper than on disc; interstriae narrower than on disc, each with a median row of minute granules and with a median row of erect, narrowly flattened scales, these as long as or slightly longer than interstitial width. Apex of last abdominal sternite narrowly, evenly rounded with a faint elevated line.

**Male.** Similar to female except setae on frons slightly less abundant and apex of last abdominal sternite weakly impressed on a small round area at apex, bordered on each side by a slightly elevated margin.

**Distribution.** This species is known from Dominica, Guadeloupe, Saint Lucia and Saint Vincent and the Grenadines.

**Specimens examined. DOMINICA:** 1250', 5 mi E Dublanc, 20 Aug. 1986 (2), 16 Aug. 1986 (1), C. W. and L. B. O'Brien (3–CNCI); Saint Paul Par., Pont Cassé, 19 June 2004, R. Turnbow (1–RHTC). **GADELOUPE:** Basse-Terre, Tour du Houëlmont, 19 May 2012, R. Turnbow (1–RHTC); Island record only (holotype-USNM). **SAINT LUCIA:** Woodlands (near bat cave), 02 June 2009, S. M. Clark (1–WIBF); Barre de L'Isle, 349 m, 08 July 2009, M. L. Gimmel, at uv light (1–WIBF). **SAINT VINCENT AND THE GRENADINES: Saint Vincent,** Saint Patrick P., Belle Isle Hill, N slope, 9.3.1991, C. W. and L. B. O'Brien (1–CNCI); Emerald Valley Hotel, Buccament, 10–20.VI.2007, uv light, S. and J. Peck (1–SBPC).

**Comments.** Adults of this species may be readily recognized by the dense brush of setae on the frons of both sexes.

The holotype in the USNM was examined.

### *Cnesinus strigicollis* LeConte

Figure 8.

*Cnesinus strigicollis* LeConte 1868: 171; Wood and Bright 1992: 212; Bright and Skidmore 1997: 43; Bright and Skidmore 2002: 33; Bright 2014: 46.

**Description (Female).** Length 2.2–2.5 mm, 2.4 times longer than wide; elytra evenly light to dark reddish-brown. Frons strongly, transverse impressed above epistoma and below a strongly elevated, transverse, arcuate carina at level of eye emargination; surface above carina convex, impunctate, minutely reticulate, glabrous; lateral area near eye with long, yellowish, scalelike setae; epistomal margin acutely elevated, area above margin bearing a row of stout, yellowish setae. Antennal club 2.0 times longer than wide, with three, transverse sutures. Pronotum as long as wide, widest in front of middle, sides straight on basal two-thirds, converging to base, anterior margin broadly rounded; discal surface longitudinally strigose, ridges shining, grooves slightly wider than ridges, dull, obscurely punctured; vestiture hairlike, scattered along lateral margin and covering anterior slope. Elytra 1.7 times longer than wide; sides straight, parallel on basal three-fourths, apex broadly rounded; discal striae weakly impressed, punctures large, distinct; discal interstriae 2.0–3.0 times wider than striae, flat, subcrenulate. Declivity convex, steep, very weakly impressed between third interstriae; striae 1 impressed, 2 and 3 less so; each interstriae with a median row of small, rounded granules; vestiture moderately abundant over entire surface, consisting of narrow, recumbent, hairlike scales and median interstitial rows of longer, erect, hairlike scales, elytral surface visible beneath vestiture.

**Male.** As in female except frons devoid of transverse carina, impressed area above epistoma with two, obscure circular swellings, convex area above impression nearly flat, epistomal margin slightly more evident with one transverse row of stout setae.

**Distribution.** This species occurs throughout the eastern United States from Michigan and New York, south to the Florida Keys to southeast Mexico and in the West Indies in the Dominican Republic.

**Specimen examined. DOMINICAN REPUBLIC:** Pedernales, 23.5 km N Cabo Rojo, 540 m, 13–19 July 1990, L. Masner, J. Rawlins, C. Young, deciduous forest intercept trap (1–CMNH).

**Comments.** Adults of this species may be distinguished by the abundant, hairlike or very narrowly flattened elytral setae that occur over the entire elytral surface, by the uniform color of the elytral setae and the elytral surface (often with a darker transverse band at the declivital base), by the distinct, transverse carina on the female frons and by the size.

The host plants and biology of this species in the eastern United States are summarized in Wood (1982).

### Genus *Pagiocerus* Eichhoff

*Pagiocerus* Eichhoff 1868b: 148; Wood and Bright 1992: 213; Bright and Skidmore 2002: 391 (checklist); Bright 2014: 47.

Members of *Pagiocerus* may be recognized by the rounded lateral margins of the pronotum, by the rostrum which is equal to or narrower at the tip than the distance between the eyes, by the recurved sutures of the antennal club and by the prominent tubercle just above the epistomal margin. In addition, the frons of both sexes is impressed, the antennal funicle is 6-segmented (pedicel excluded), the pronotum is punctured and unarmed, the elytra are distinctly striate with conservative sculpture and the declivity is convex and without armature.

Members of this genus are monogamous and breed in large seeds (Wood 2007).

Five species are included in the genus (Bright and Skidmore 2002), most of which occur in South America. One species occurs in the West Indies.

#### *Pagiocerus frontalis* (Fabricius)

Figures 424, 494.

*Bostrichus frontalis* Fabricius 1801: 389.

*Pagiocerus frontalis*: Wood and Bright 1992: 213; Bright and Skidmore 1997: 44; Bright and Skidmore 2002: 33; Bright 2014: 47.

*Pagiocerus carabicus* Eggers 1940: 130; Schedl 1960: 6.

**Description (sex?).** Length 2.0–2.4 mm, 1.9 times longer than wide. Frons longer than wide, width at apex equal to distance between eyes, distinctly longitudinally concave from epistoma to near upper level of eyes, strongly margined opposite antennal insertions, surface brightly shining, weakly punctate; epistoma weakly elevated, with a strongly developed, median tubercle, this tubercle larger in males; vestiture consisting of minute setae near lateral carina and median tubercle. Antennal club 1.7 times longer than wide, oval, with two curved sutures. Pronotum as long as wide, widest behind middle; sides slightly arcuate; discal surface brightly shining, densely punctate, punctures oblong, longitudinally confluent; interspaces convex, smooth, shining; vestiture of extremely short, fine setae. Elytra 1.4 times longer than wide; discal striae deeply impressed, punctures large, deep, close; discal interstriae convex, 1.5–2.0 times wider than striae, brightly shining, irregularly punctate and rugose. Declivity convex; striae less deeply impressed than on disc; interstriae flatter; vestiture consisting of a uniseriate row of spatulate setae in each interstriae on posterior half of elytra.

**Distribution.** This species occurs throughout the tropical and subtropical areas of the New World and has been imported into Europe and Africa. It occurs throughout the West Indies.

**Specimens examined. CUBA:** Santiago de Cuba, Parque Nacional Gran Piedra near La Isabellica, 1075 m, 20.003–75.613, 27.I.2012, R. Anderson, wet pluviselva litter, 2012–008 (1–CMNO). **DOMINICA:** Roseau, 0–100 m (2–USNM); Springfield Estate, Mt. Joy, 31.V-16.VI.2004, ridge top forest, 550 m, S. and J. Peck (3–SBPC);

Springfield Estate, 30.V-16.VI.2004, 830–860 m, mature second forest, S. and J. Peck (12–SBPC), same locality, ridge top forest above Mt. Joy, 550' (2–SBPC); Saint David Par., 11 km NE Pont Casse, 20 June 2004, R. Turnbow (1–RHTC); Saint Peter Par., Syndicate, 20 June 2004, R. Turnbow (1–RHTC); Grand Bay Ag. Sta., citrus grove, VI.24.2004, C. W. and L. B. O'Brien (1–CNCI); Syndicate, citrus groves, VI.26.2004, C. W. and L. B. O'Brien (2–CNCI). **DOMINICAN REPUBLIC:** Dajabon, Mariano Cestero, 14.VIII.1980, 650 m, A. Norrbom (1–CMNH); Duarte, Reserva Loma Quita Espuela, Canelo, 13.2 km NNE San Francisco de Macoris, 515 m, 6 Apr 2004, C. Young, R. Davidson, J. Rawlins, wet broadleaf forest, uv light (5–CMNH); Pedernales, 60 km NW Cabo Rojo, Las Abejas, 1200 m, cloud forest, 30.XI.1991, sweeping, Masner and Peck (1–SBPC); Province Pedernales, 24 km N Cabo Rojo, 11 July 1993, beating vegetation, D. Sikes and R. Rosenfeld (1–WIBF). **JAMAICA:** Claradon Parish, Kellits, Mason R. Bog, 2300', 4.VIII.1974, S. and J. Peck (1–SBPC); Manchester Parish, Mandeville (2–SBPC); Portland Parish, Paradise, 4.IV.1975, R. E. Woodruff, blacklight trap (1–FSCA); Saint Andrew Parish, Hardwar Gap, 4000' (2–CNCI); Newcastle (1–NHML); Saint Thomas Parish, Corn Puss Gap, 4 mi. N of Bath, 2100', VIII.1974 (3–CNCI); St Thomas Parish, Portland Gap, 5500', 1.VIII.1974, S. Peck (1–SBPC). **MARTINIQUE:** Falaise Gulch road nr. Ajoupa-Bouillon, V-16-1985, C. W. and L. B. O'Brien (3–CNCI); Grand Rivière, Fond Marin, 21.VII.2001, Roguet/Marquet (1–CNCI); Morne Rouge, GR Morne Jacob, 11.VII.2001, Roguet/Marquet (1–CNCI). **SAINT KITTS-NEVIS:** Saint Kitts, Brimstone Mtn. (1–USNM). **SAINT LUCIA:** Barre de L'Isle, various dates 2009, canopy Malaise, litter Malaise, various collectors (156–WIBF, CNCI); Piton Flore trap site, 532 m, various dates 2009, various collectors (76–WIBF). **SAINT VINCENT AND THE GRENADINES:** Saint Vincent, Hermitage Forest, E. of Spring Village, 15–27.VIII.2006, forest edge flight intercept trap and Malaise trap, 348 m, S. and J. Peck (1–SBPC).

**Record from literature. GUADELOUPE:** Island record only (Wood and Bright 1992).

**Comments.** Adults of this species may be easily recognized by the narrow, subrostrate frons which bears a distinct, erect tubercle on the epistoma and by the other characters given in the key to genera.

Host plants listed by Vázquez et al. (2003) for this species in Cuba include *Chimaris*, *Persea* and *Zea*. This species is an important economic pest of stored corn throughout the soft maize producing countries. It has been transported into the Old World in infested maize.

### Genus *Sternobothrus* Eggers

*Sternobothrus* Eggers 1943: 372; Wood and Bright 1992: 216; Bright and Skidmore 2002: 439 (checklist); Bright 2014: 47.

Adults of *Sternobothrus* are very similar to those in *Bothrosternus* and *Cnesinus*. Members of *Sternobothrus* may be distinguished from those in *Bothrosternus* by the widely separated anterior coxae which do not bear a subcarinate ridge between the coxae and by the smooth, not excavated or pubescent, pleural area of the female prothorax. They may be distinguished from *Cnesinus* species by the punctate pronotal disc and by the rounded lateral margin of the pronotum.

Members of this genus are pith borers in small twigs (Wood 1982, 2007).

The genus contains 10 species ranging from southern Mexico to Argentina (Wood 2007). Two species, one of which is questionable, have been recorded from the West Indies.

### Key to species of *Sternobothrus* in the West Indies

1. Sutural apex slightly emarginate, apices of elytra slightly explanate, margins coarsely serrate; length 2.2–2.5 mm; Grenada ..... *S. bicaudatus* (Blandford) (p. 30)
- Sutural apex evenly rounded, not emarginate, apices of elytra not explanate; length 3.5 mm; distribution questionable ..... *S. marginicollis* (Eggers) (p. 31)

### *Sternobothrus bicaudatus* (Blandford)

Figures 425, 495.

*Bothrosternus bicaudatus* Blandford 1896b: 133.

*Sternobothrus bicaudatus*: Wood and Bright 1992: 216; Bright and Skidmore 1997: 45; Bright 2014: 26.

**Description (Female).** Length 2.2–2.5 mm, 2.3 times longer than wide; dark reddish-black. Frons strongly concave, with an oval, impunctate, brightly shining, slightly inflated median space, this area mirror-like, remaining surface around this area dull, densely reticulate, with minute granules and a few, short, scattered setae; surface transversely impressed from epistoma to lower level of eyes, with a shining, transverse epistomal callus and a dense brush of flattened, reddish-brown setae above callus. Antennal funicle with dense, long setae. Pronotum slightly less than 1.1 times longer than wide, widest on anterior fourth; sides parallel on basal three-fourths; surface densely punctured, punctures slightly oval, close, interpuncture surface dull, minutely reticulate. Elytra 1.6 times longer than wide; sides parallel on basal two-thirds, apex narrowly rounded, sutural apex slightly notched, apices slightly explanate; discal striae slightly impressed, minutely reticulate, punctures obsolete; discal interstriae 2.0–3.0 times wider than striae, moderately shining, with fine, impressed, minute punctures scattered in no apparent order. Declivity convex, steep; striae more deeply impressed than on disc; interstriae narrower than on disc, each with a median row of close tubercles.

**Male.** Similar in size and proportions to female. Frons as in female except entire surface dull, minutely reticulate and punctate, lacking oval, median, shining area; epistomal callus absent, devoid of special pubescence. Antennal funicle glabrous. Pronotum and elytra as in female except declivital interstitial granules slightly larger.

**Distribution.** This species is known from Panama to Brazil and in the West Indies from Grenada.

**Specimens examined. GRENADA:** Grand Etang Forest Reserve, 16', 10–28.VIII.2010, 400 m, rainforest flight intercept trap, S. Peck (3–SBPC).

**Comments.** Adults may be readily recognized by the explanate apices of the elytra, by the slightly notched sutural apex and by the flat interstriae on the basal half of the elytra which become costate on the posterior half and on the declivity. In addition, specimens may be distinguished by the lack of a pleural excavation on the female prothorax, by the distinct carinate lateral margin of the pronotum, by the distinctive frons of the female as described above and by the distinctive elytral declivity.

This species has been collected from species of *Gutteria*, *Hirtella*, *Ocotea*, *Protium* and *Siparuma guianensis* (Bright and Skidmore 1997).

The above specimens were compared to specimens in the Wood collection (now in the USNM) that had been previously compared to Blandford's syntypes. *Sternobothrus tuberculatus* Eggers, from Brazil, was placed as a synonym of this species by Wood (2007).

### ***Sternobothrus marginicollis* (Eggers)**

*Cnesinus marginicollis* Eggers 1931: 15; Wood and Bright 1992: 209.

*Sternobothrus marginicollis*: Bright 2014: 26.

**Description (Male).** Length 3.5 mm, 2.1 times longer than wide; dark brown. Frons broadly, slightly concave from epistoma to above upper level of eyes; surface smooth, shining, with abundant, minute punctures; epistomal callus distinct, upper slope bearing one row of yellowish setae. Antennal funicle with dense, long setae. Pronotum 0.9 times than wide, widest on anterior fourth; sides parallel on basal three-fourth; surface smooth, shining, coarsely longitudinally strigose from base to anterior margin, punctures obscure. Elytra 1.4 times longer than wide; sides parallel on basal two-thirds, apex evenly, narrowly rounded, sutural apex not notched, apices evenly rounded; discal striae distinctly impressed, punctures small, shallow; discal interstriae 5.0 times wider than striae, moderately reticulate, with fine, impressed minute punctures scattered in no apparent order, interstriae 1 bearing a median row of small, rounded granules. Declivity convex, steep, slightly impressed between third interstriae; striae more deeply impressed than on disc; interstriae narrower than on disc, each with a median row of close tubercles.

**Female.** Unknown.

**Distribution.** The distribution of this species is questionable. The type locality is given as "Antillen oder Columbien, Nr. 48412".

**Specimens examined.** Antillen oder Columbien, Nr. 48412 (1–NHMB).

**Comments.** This species is included here because of the questionable locality as recorded above. Wood (2007) includes a description of this species but omits the species in his key to the South American *Sternobothrus* and does not mention any additional South American specimens seen nor does he include any additional comments. No specimens of this species have been seen from the West Indies during this study.

The male may be distinguished by the complete lack of interstitial costae, by the very wide discal interstriae, by the presence of small granules on the discal and declivital interstriae and by the large size. The female is unknown.

Because of the uncertainty that this species occurs in the West Indies, it is not included in Appendix 2 nor is it included in the counts of the number of species in the West Indies.

## TRIBE PHLOEOTRIBINI

### Genus *Phloeotribus* Latreille

*Phloeotribus* Latreille 1797: 50; Wood and Bright 1992: 217; Bright and Skidmore 2002: 396 (checklist); Bright 2014: 49.

Members of *Phloeotribus* may be easily recognized by the pseudo-lamellate, movable segments of the antennal club (Fig. 377, 378). This character alone will distinguish this genus from all other genera in the family. In addition, the lateral margins of the protibia are armed by several socketed denticles, the lateral margin of the pronotum is rounded, the antennal funicle is 4-segmented (pedicel excluded), the procoxae are widely separated, the elytral striae are weakly to strongly impressed, the elytral interstriae are variously granulate and the elytral declivity is convex and may or may not bear armature.

About 27 species occur in North and Central America and another 50 or more occur in South America (Wood 2007). Three species are recognized in the West Indies and one species (*P. texanus* Schaeffer) may eventually be found there.

All species are monogynous and breed under the bark of various trees and shrubs.

### Key to the species of *Phloeotribus* in the West Indies

1. Segments of antennal club very narrow, at least 6.0 times longer than maximum width; all declivital interstriae with small, rounded granules, these slightly larger and more acute on interstriae 7, 8 and 9; length 1.9–2.3 mm; Cuba to Dominica ..... *P. atlanticus* Schedl (p. 33)
- Segments of antennal club 2.0–4.0 times longer than maximum width; declivital interstriae 2, 3, 5, 7 and 9 with small, acute spines or tubercles; length 1.5–1.9 mm ..... **2**
- 2(1). Declivital interstriae 3, 5, 7 and 9 each bearing a row of small, acute spines, these all equal in length, interstriae 1, 2, 4 and 6 bearing a row of smaller granules; male frons with an acute spine above antennal insertion; Florida ..... *P. texanus* Schaeffer (p. 35)
- Declivital interstriae 3, 5, 7 and 9 each with a row of small granules, with a few granules or spines distinctly larger than others; male frons with a rounded elevation above antennal insertion (male of *P. caymanensis* unknown) ..... **3**
- 3(2). Length 1.5–1.7 mm; discal interstriae 2 with a row of very small, acute granules, with a larger, more acute spine at or just below declivital base and another similar spine at apex; declivital interstriae 3, 5 and 7 with a row of distinct, acute spines; strial punctures moderate in size, striae distinctly impressed; Guadeloupe, Dominica ..... *P. insularis* Eggers (p. 34)
- Length 1.7–1.9 mm; discal interstriae 2 with a row of very small, rounded granules, all of equal size; declivital interstriae 3, 5 and 7 each with one or two larger, acute granules; strial punctures very large, striae weakly impressed; Cayman Islands ..... *P. caymanensis* Bright, sp. nov. (p. 33)

***Phloeotribus atlanticus* Schedl, Resurrected Name**

Figures 378, 426, 496.

*Phloeotribus atlanticus* Schedl 1951: 81; Wood and Bright 1992: 233 (as synonym of *P. setulosus* Eichhoff).

**Description (Male).** Length 1.9–2.3 mm, 1.9–2.0 times longer than wide; reddish-brown, black on head and anterior half of pronotum. Frons longitudinally concave from epistoma to just below upper level of eyes, with a deeply impressed median line at level of antennal insertions; lateral margins of concavity elevated at level of antennal insertions by a rounded swelling; epistoma strongly elevated in median area as an arcuate carina bearing two very slightly elevated protuberances at lateral margins of elevation; surface reticulate, moderately shining, punctures sparse, very faint; lateral areas above antennal insertions and area at upper level of eyes sparsely granulate, granules small, prominent; vestiture consisting of yellowish, hairlike setae on epistoma and narrow, flattened scales on lateral areas above antennal insertions. Antennal club 2.4 times longer than wide, divided into three lamellae, each lamella at least 6.0 times longer than wide at base; funicle densely pubescent. Pronotum 1.2 times wider than long; sides evenly arcuate, anterior margin broadly rounded; surface reticulate, moderately shining; asperities on anterior slope erect, prominent, irregularly arranged; posterior portion closely punctate, punctures shallow, large; median line not evident; vestiture consisting of sparse, narrow scales, more hairlike on sides and in front. Elytra 1.3 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae slightly impressed, punctures large, slightly impressed; discal interstriae convex, slightly wider than striae, bearing a row of tubercles, these blunt, each one extending completely across interstriae; vestiture consisting of yellowish setae, equal to or slightly longer than distance equal to width of an interstriae, arising from each interstitial tubercle. Declivity convex; similar to disc except interstitial tubercles larger, more acute and interstriae narrower.

**Female.** Similar in size and proportions to male. Frons convex, transversely impressed above epistoma, with a very weakly inflated transverse callus at level of antennal insertion; surface reticulate-punctate; lateral areas not elevated. Antennal funicle very sparsely pubescent; club as in male. Pronotum and elytral disc as in male except sculpture finer; interstitial tubercles on elytral declivity smaller.

**Distribution.** This species is known from Cuba, Dominican Republic and Jamaica.

**Specimens examined.** **CUBA:** Matanzas, 1 km east Playa Larga, Zapata Swamp, 2 May 1983: J. Spangler and Iliana Fernandez G. (1-USNM). **DOMINICAN REPUBLIC:** Pedernales, 25 km N Cabo Rojo, 21 May 1992, R. Turnbow (1-RHTC); same locality, 10 and 12 July 1996, R. Turnbow (3-RHTC); Province Barahona, Larimar Mine, Filipinas, 3300 ft., 16–17.XII.1995, blacklight trap, R. E. Woodruff (2-REWC); Province Barahona, nr. Filipinas, Larimar Mine, 26.VI-7.VII.1992, R. E. Woodruff: Skelley, F. Skillman, at light (1-RHTC). **JAMAICA:** Trelawny Parish, Duncans, 2 August 1966, H. F. Howden (1-CNCI); Duncans, 21 August 1966, Howden and Becker (1-CNCI); Barbecue Bottom, 13 August 1966, H. F. Howden (1-CNCI); Good Hope, 17 August 1966, H. F. Howden (1-CNCI).

**Comments.** Schedl (1951) described this species from one female specimen from Cuba and in 1985 I placed this species in synonymy under *P. setulosus* Eichhoff. The examination of additional specimens, especially males, during this study and the discovery of additional characters has led me to reinstate Schedl's species as distinct.

Adults of *P. atlanticus* are almost identical to those of *P. setulosus* but the males of *P. atlanticus* may be distinguished by the distinctly elevated median portion of the epistoma. Females may be distinguished by the less prominently inflated longitudinal callus on the frons.

***Phloeotribus caymanensis* Bright, sp. nov.**

Figures 11, 377.

**Type Material.** **HOLOTYPE** (female) labeled: "CAYMAN BRAC, The Creek, uv trap, 6.XII.1995, C. R. Dilbert" / "HOLOTYPE *Phloeotribus caymanensis* D. E. Bright 2016" (CNCI). **PARATYPES** (3): all labeled with same data as holotype (CNCI).



**Figures 11–12.** Declivities of *Phloeotribus* spp. **11)** *P. caymanensis*. **12)** *P. insularis*.

**Description (Female).** Length 1.7–1.9 mm, 2.1 times longer than wide; light reddish-brown. Frons convex, weakly, transversely impressed above epistoma; surface dull, minutely reticulate, with a few scattered, minute granules; vestiture consisting of scattered, very narrowly flattened setae, these longer and more hairlike just above epistoma. Antennal club with three elongate segments; basal segment 2.7 times longer than wide, middle segment 4.3 times longer than wide, apical segment 2.7 times longer than wide. Pronotum 1.3 times wider than long; sides and anterior margin evenly rounded; anterior margin with eight erect, separated serrations; anterior slope with abundant, scattered, acute asperities and with deep, dense punctures between asperities; posterior half deeply, densely punctured, punctures separated by a distance much less than their diameters, surface between punctures smooth, shining; vestiture consisting of scattered, short, narrowly flattened, acute scales. Elytra 1.3–1.4 times longer than wide; sides parallel on basal two-thirds, apex narrowly rounded; discal striae punctured in even, regular rows, punctures very large, deeply impressed; discal interstriae less than half as wide as striae, each with a median row of small granules and erect, narrowly flattened setae, setae shorter than strial width. Declivity evenly convex; striae and interstriae as on disc except interstitial granules slightly larger and interstriae 3, 5, 7 and 9 each have two or three larger, acute, slightly curved granules or small spines; costal margin with small, widely separated, acute granules.

**Male.** Unknown, not present in material examined.

**Distribution.** This species is known from the Cayman Islands.

**Etymology.** This species is named for the type locality.

**Comments.** Females of this species may be recognized by the equal-sized granules in the second declivital interstriae, by the larger granules in declivital interstriae 3, 5 and 7, and by the very large strial punctures. The male is unknown.

***Phloeotribus insularis* Eggers**

Figure 12.

*Phloeotribus insularis* Eggers 1940: 123; Wood and Bright 1992: 223; Bright and Skidmore 1997: 48; Bright and Skidmore 2002: 517.

**Description (Male).** Length 1.5–1.7 mm, 1.9 times longer than wide; reddish-brown, usually black on head and anterior half of pronotum and ventral areas. Frons deeply, longitudinally concave from epistoma to upper level of eyes, with a weakly impressed groove in center; lateral margins of concavity not elevated except for a slightly rounded swelling at level of antennal insertions; epistoma flattened or very slightly elevated, surface shining, unmodified; lateral areas above antennal insertions and area at upper level of eyes reticulate, moderately shining; vestiture consisting of sparse, yellowish, hairlike setae on epistoma and sparse, hairlike setae in concavity above antennal insertions. Antennal club 1.5 times longer than wide, divided into three lamellae, each lamella 2.0 times longer than wide at base; funicle densely pubescent. Pronotum 1.3 times wider than long; sides evenly arcuate, anterior margin broadly rounded; surface reticulate, moderately shining; asperities on anterior slope erect, prominent, irregularly arranged; posterior portion irregularly, slightly rugose and with a few scattered granules; median line not evident; vestiture consisting of sparse, narrow scales, more hairlike on sides and in front. Elytra 1.2 times longer than wide; sides parallel on basal half, apex narrowly rounded; discal striae distinctly, moderately impressed, punctures very large, deeply impressed; discal interstriae convex, narrower than striae, each with a median row of small, rounded granules; consisting of erect, yellowish, narrow scales, longer than a distance equal to the width of an interstriae, arising from each interstitial tubercle. Declivity convex, commencing at posterior half of elytra; interstriae 1 more deeply impressed, unmodified; interstriae 2 with a large, acute spine at declivital base, remainder of interstriae as on disc; interstriae 3 similar to 2, with a larger acute tubercle slightly below level of spine in 2; interstriae 5, 7 and 9 each with larger, acute tubercles or spines on apical portions; all interstriae with a median row of erect, narrowly flattened scales.

**Female.** Similar in size and proportions to male. Frons convex, weakly flattened above epistoma, with a very weakly inflated, arcuate, transverse callus at level of antennal insertion; surface reticulate-punctate, with a few small, shining granules; lateral areas not elevated. Antennal funicle very sparsely pubescent; club as in male. Pronotum and elytral disc as in male except sculpture finer; interstitial tubercles on elytral declivity smaller.

**Distribution.** This species is known from Guadeloupe and Dominica.

**Specimens examined. DOMINICA:** 1.2 mi N Pont Casse, 17.VIII.1964, T. J. Spilman (1–USNM); Pt. Casse, ca 1900', 18 Aug. 1986, C. W. and L. B. O'Brien (1–CNCI); 5 mi. E. Dublanc, 1250', 20 Aug. 1986, C. W. and L. B. O'Brien (3–CNCI); St Paul Parish, Pont Casse, 19 June 2004, R. Turnbow (1–RHTC); Saint George Parish, Middleham Falls Trail, 29 June 2004, R. Turnbow (1–RHTC); Saint Peter Parish, Syndicate Trailhead, 28 June 2004, R. Turnbow (1–RHTC). **GADELOUPE:** Trois-Rivières (1–USNM).

**Comments.** Adults may be most easily recognized by the presence of a small, distinct, acute spine at or anterior to the declivital base in the second interstriae and another similar spine at the apex of this interstriae. The second interstriae between these spines often bears a row of very small granules. In addition, interstriae three, five and seven bear several acute spines.

The lectotype in the USNM was examined.

### ***Phloeotribus texanus* Schaeffer**

*Phloeotribus texanus* Schaeffer 1908: 222; Wood and Bright 1992: 235.

This species is known from the southeastern United States as far south as “Biscayne” (Wood 1982). It is not known from the West Indies but should be found in the Greater Antilles. Adults have been found in branches of *Celtis* sp.

Adults are 1.7 mm in length and may be recognized by the uniformly sized granules on the declivital interstriae and by the deeply convex male frons with an acute spine on the lateral margin above the antennal insertion. This species is not included in Appendix 2 nor in any count of the West Indian fauna.

## TRIBE TOMICINI

### Genus *Dendroctonus* Erichson

*Dendroctonus* Erichson 1836: 52; Wood and Bright 1992: 136.

This genus is included here because *D. terebrans* (Olivier) or *D. frontalis* Zimmermann (or one of its sibling species), might be encountered in the Greater Antilles on islands where pines naturally occur. *Dendroctonus terebrans* occurs in the eastern United States as far south as southern Florida and has been recorded from “Largo” and the Miami area in Dade Co. (Atkinson and Peck 1994, Wood 1982). *Dendroctonus frontalis*, with several sibling species, occurs throughout the eastern United States and in the pines of southern Mexico and in Central America. Neither species was reported in the Dominican Republic during large-scale outbreaks of *Ips* bark beetles in 1986–1987 (Haack et al. 1989). I see no logical reason why specimens of this genus could not occur in the Greater Antilles, and if one or more of these species do occur in the region they would be found in the stumps, roots and boles of native West Indian pines (*Pinus*).

The genus is not included in Appendix 2 nor in any count of the West Indian fauna.

## TRIBE PHLOEOSININI

### Genus *Chramesus* LeConte

*Chramesus* LeConte 1868: 168; Wood and Bright 1992: 262; Bright and Skidmore 2002: 309 (checklist); Bright 2014: 56.

Species of *Chramesus* may be recognized by the oval, unsegmented antennal club which is attached on the side to the 4-segmented funicle (pedicel excluded) (Fig.379). In addition, the procoxae are widely separated, the male frons is concavely impressed and the female frons is convex, the base of the elytra is elevated and crenulate, the elytral vestiture usually consists of abundant ground cover (sometimes absent) of randomly placed, small scales or setae and a median row of longer scales.

Members of this genus are mostly monogynous and phloeophagous, constructing egg galleries under the bark of various species of trees, shrubs or vines (Wood 2007).

About 90 species occur in North and South America (Bright and Skidmore 2002), eight species are here recorded from the West Indies.

### Key to the species of *Chramesus* in the West Indies

1. Discal interstriae elevated, interstriae 2 in male much wider than others at middle, all very densely scaly, especially in male; elytral striae narrow, deeply impressed; antennal funicle of male with a tuft of very long setae, female with a few long setae at distal end of funicle; length 1.7–2.1 mm, 1.5–1.6 times longer than wide; generally distributed ..... *C. rotundatus* (Chapuis) (p. 42)
- Discal interstriae flat, all of equal width, each with a row of erect setae or abundant short scales; elytral striae broad to narrow, moderately to deeply impressed; antennal funicle of male with or without a distinct brush of setae; length less than 1.7 mm ..... **2**
- 2(1). Discal interstriae with four or five rows of dense scales, these very short, with a median row of slightly longer scales; elytral striae much narrower than interstriae ..... **3**
- Discal interstriae with one to three rows of either very short scales or long, erect setae; elytral striae slightly narrower than interstriae to as wide as interstriae ..... **4**
- 3(2). Anterior two-thirds of pronotum with distinct asperities, these as long as or longer than surrounding scales; elytral striae narrow, with small, obscure punctures; female frons deeply,

- transversely impressed above epistoma; pronotal asperities large, distinct; length 2.0 mm, 1.8 times longer than wide; Virgin Islands (Saint Croix) .... *C. palearis* Bright, sp. nov. (p. 41)
- Anterior two-thirds of pronotum with scattered, minute, acute granules, these shorter than surrounding scales, devoid of distinct asperities; elytral striae wider, with distinct, impressed punctures; length 1.5 mm; Grenada ..... *C. lepidotus* Bright, sp. nov. (p. 38)
- 4(2). Discal interstriae 1, 2 and 3 with one or two rows of long, erect, acutely pointed setae, these as long or longer than interstitial width; discal interstriae 4–7 with one row of similar setae; male frons longitudinally concave, with an acute tubercle on lateral margin; length 1.4–1.6 mm; generally distributed ..... *C. opacicollis* Eggers (p. 40)
- All discal interstriae with three rows of short, spatulate scales, these much shorter than interstitial width, those in median row slightly longer than those in lateral rows; male frons broadly concave, without an acute tubercle on lateral margin ..... 5
- 5(4). Scales on discal interstriae very broad, those in median row slightly longer, those along lateral margin very short; scales on pronotal disc very broad, flat; male frons smooth below level of antennal insertions; length 1.4–1.5 mm, 2.0 times longer than wide ..... 6
- Scales on discal interstriae very small, narrow, those in median row longer, broadened at apex, those along lateral margin very short, hairlike to broad; scales on pronotal disc broad in male, more hairlike in female, widely separated; male frons with a small, median, bifid elevation at level of antennal insertions; length 1.5–1.8 mm ..... 7
- 6(5). Anterior margin of female pronotum with distinct serrations; median row of scales in all interstriae 2.0 times longer, more erect and broader than remaining scales; male antennal scape with a tuft of long setae; length 1.4–1.5 mm; Montserrat ..... *C. squamosus* Bright, sp. nov. (p. 44)
- Anterior margin of female pronotum without serrations; median row of scales in all interstriae as long as remaining scales, not more distinctly erect; male antennal scape with a few setae; length 1.5 mm; Saint Lucia, Saint Vincent and Grenadines, Guadeloupe, Martinique ..... *C. scabiosus* Bright, sp. nov. (p. 43)
- 7(5). Length 1.7–1.8 mm; declivital interstriae 3 very slightly elevated, broader, with denser vestiture; Puerto Rico, Dominican Republic ..... *C. atlanticus* Bright and Torres (p. 37)
- Length 1.5 mm; declivital interstriae 3 not elevated, narrower, with slightly sparser vestiture; Saint Lucia ..... *C. maieri* Bright, sp. nov. (p. 39)

### ***Chramesus atlanticus* Bright and Torres**

Figures 427, 497.

*Chramesus atlanticus* Bright and Torres 2006: 395.

**Description (Male).** Length 1.7–1.8 mm, 1.8 times longer than wide; light to dark reddish-brown, head usually darker. Frons evenly, slightly concave from epistoma to above upper level of eyes and laterally from eye to eye, with a very small, median, bifid tubercle just above epistomal margin at level of antennal insertions; lateral margins of concavity rounded, not distinctly elevated; surface of concavity shining, minutely reticulate, with very small obscure punctures, covered with sparse, erect, narrowly spatulate scales. Antennal funicle nearly glabrous, with a few, very short setae; club narrowly oval, 2.4 times longer than wide, with a fringe of longer setae around periphery. Pronotum 1.3–1.4 times wider than long; sides broadly arcuate; anterior margin broadly rounded, smooth; discal surface evenly convex, moderately shining, minutely reticulate, with widely scattered, very fine punctures and very small, acute, shining granules, each with a short, yellowish, backward-pointing, narrowly spatulate scale, these equal in length to those on frons, granules becoming slightly larger on lateral areas. Elytra 1.1 times longer than wide; sides parallel on anterior three-fourths; discal striae weakly impressed, punctured in regular rows, punctures of moderate size, distinctly impressed; discal interstriae weakly convex, mostly 3.0 to

4.0 times wider than striae, each with three rows of very short, spatulate, yellowish scales, scales in median row slightly longer, half as long as interstitial width. Declivity evenly convex; interstriae as on disc except scales very slightly shorter, stouter, and with a row of very small, acute granules in each interstriae.

**Female.** As in male except frons evenly convex, weakly transversely impressed at level of antennal insertions and without tubercles of other modifications; asperities on lateral portions of pronotum distinctly larger.

**Distribution.** This species is known from Puerto Rico and the Dominican Republic.

**Specimens examined. DOMINICAN REPUBLIC:** Province La Vega, nr. Buena Vista, Hotel La Montana, 10 April 1992, M. A. Ivie and W. Lanier (1-WIBF). **PUERTO RICO:** Guaynabo, various dates, light trap, J. Torres (39-USNM, CNCI).

**Comments.** Adults of this species may be recognized by the narrow scales on the discal interstriae, those in median row longer, broadened at apex and those along lateral margin very short, hairlike to broad, by the hairlike pronotal scales, by the unarmed anterior margin of the pronotum and by the male frons bearing a pair of very small, contiguous tubercles (or a small, bifid elevation) above the epistoma. The male is similar to that of *C. maieri* sp. nov. but differs by the larger elevation on the frons, by the slightly longer elytral scales and by the size.

In the original description of this species, I mentioned that the holotype, allotype and most of the paratypes would be deposited in the USNM. However, all the Puerto Rican specimens listed above were collected by J. A. Torres and deposited in the CNCI. Thus, the holotype, allotype and 23 paratypes plus 10 additional specimens not included as paratypes are in the CNCI; six paratypes are in the USNM.

***Chramesus lepidotus* Bright, sp. nov.**

Figure 16.

**Type Material.** (Male) labeled: “**GRENADA:** Saint Andrew, Mirabeau Agric. Lab., 28.I.1990, J. Telesford, light trap” / “**HOLOTYPE** *Chramesus lepidotus* D. E. Bright 2016” (FSCA).

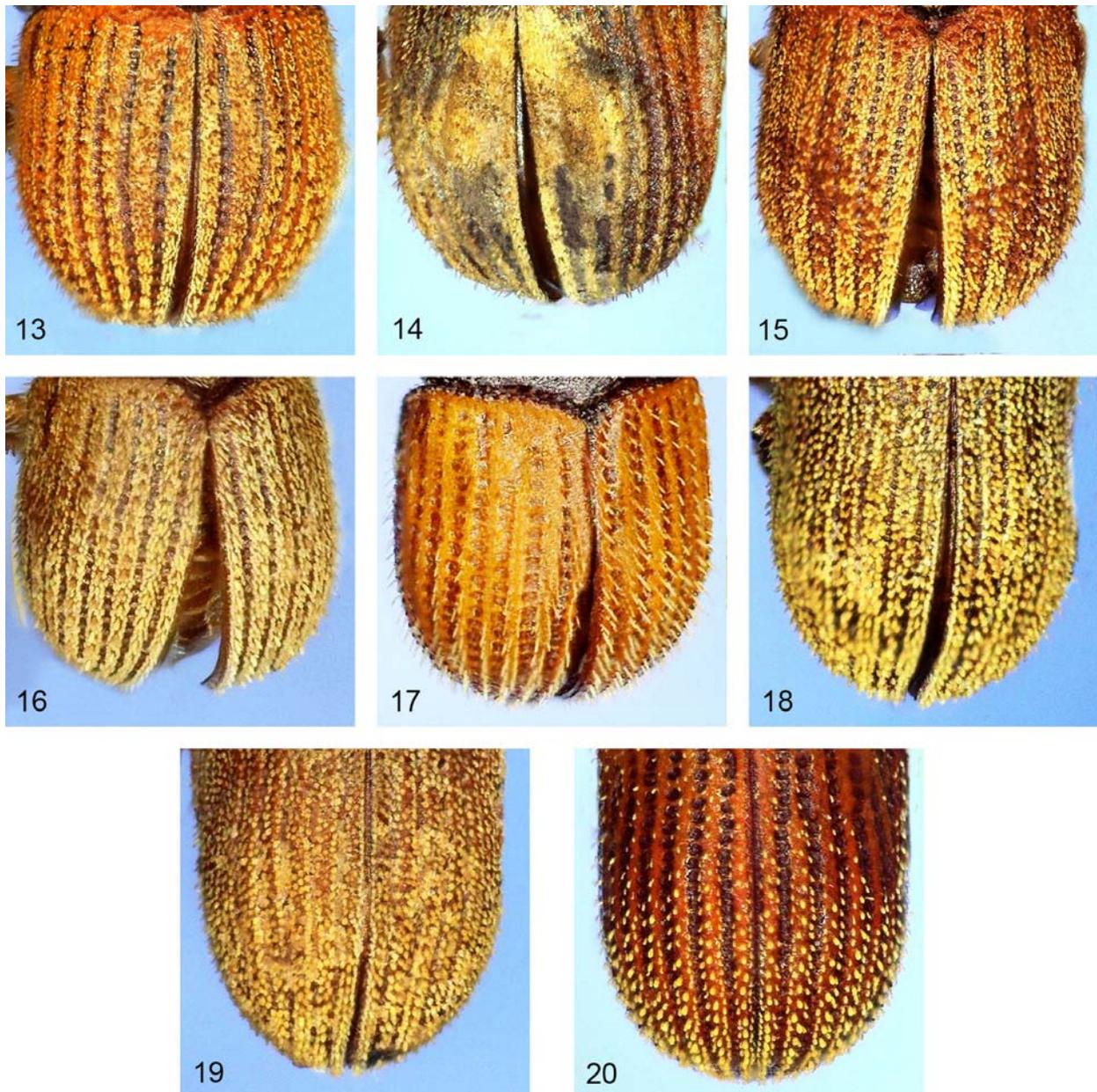
**Description (Male).** Length 1.5 mm, 1.7 times longer than wide. Frons concavely impressed from epistoma to above upper level of eyes, lateral margins obtusely elevated to upper eye level, more acutely elevated as a small subquadrate elevation just above antennal insertion; surface of concave area reticulate, with two low, glabrous swellings mesad of acute marginal elevations and with scattered, fine setae, those on periphery of concave area longer and incurved; epistoma narrowly elevated above epistomal margin. Antennal funicle narrowly elongate, 0.7 times as long as club, with a few long setae; club 1.9 times longer than wide, surface densely pubescent. Pronotum 1.35 times wider than long; sides broadly arcuate, strongly narrowed to narrowly rounded anterior margin; surface of disc dull, minutely reticulate, with dense, very short scales, devoid of asperities but with small, scattered granules. Elytra (measured along suture) as long as wide; sides straight on basal half, apex broadly rounded; discal striae moderately deeply impressed, glabrous; discal interstriae flat, 3.0–4.0 times wider than striae, all (except first) with four to five rows of small, narrow scales, scales in median row slightly longer. Declivity evenly convex; striae and interstriae as on disc except interstriae 2 and 3 are slightly narrower.

**Female.** Unknown.

**Distribution.** This species is known from Grenada.

**Etymology.** From *lepidotos*, Greek for scaly, referring to scaly vestiture of adult.

**Comments.** Males of this species may be distinguished by their smaller size, by the densely scaly elytra with the scales in four to five rows in each interstriae, by the lack of distinct asperities on the pronotal surface, by the concave frons which bears two low swellings mesad of the lateral margin, by the low elevation on the lateral margin of the concavity above the antennal insertions and perhaps by the distribution. The male resembles the male of *C. palearis* but differs by the smaller size, by the lack of a pair of small swellings on the frons and by other characters mentioned in the above key.



**Figures 13–20.** Declivities of *Chramesus* spp. **13)** *C. rotundatus* (female). **14)** *C. rotundatus* (male). **15)** *C. palearis*. **16)** *C. lepidotus*. **17)** *C. opacicollis*. **18)** *C. squamosus*. **19)** *C. scabriosus*. **20)** *C. maieri*.

***Chramesus maieri* Bright, sp. nov.**

Figure 20.

**Type Material.** **HOLOTYPE** (male) labeled: “**SAINT LUCIA:** Mont LaCombe, 13.9209°N, 60.9592°W, 231 m, 23–28 June 2009, Malaise, C. A. Maier and M. L. Gimmel” / “**HOLOTYPE** *Chramesus maieri* D. E. Bright 2016” (WIBF [CNCI]). **PARATYPE** (1) labeled: “**SAINT LUCIA:** Barre de L’Isle, 13.93682°N, 60.95936°W, 340 m, 08 JULY 2009, M. L. Gimmel, at uv light” (WIBF).

**Description (Male).** Length 1.5 mm, 1.8 times longer than wide; reddish-brown. Frons evenly, slightly concave from epistoma to above upper level of eyes and laterally from eye to eye, with a very small,

median, bifid tubercle just above epistomal margin at level of antennal insertions; lateral margins of concavity not distinctly elevated; surface of concavity shining, minutely reticulate, with very small, obscure punctures, covered with sparse, erect, narrowly spatulate scales. Antennal funicle nearly glabrous, with a few, very short setae, distinct brush of setae absent; club narrowly oval, 2.4 times longer than wide, with a fringe of longer setae around periphery. Pronotum 1.3–1.4 times wider than long; sides broadly arcuate; anterior margin broadly rounded, smooth; discal surface evenly convex; discal surface moderately shining, minutely reticulate, with widely scattered, very fine punctures and very small, acute, shining granules, each with a short, yellowish, backward-pointing, narrowly spatulate scale, equal in length to those on frons, granules becoming slightly larger on lateral areas. Elytra 1.1 times longer than wide; sides parallel on anterior three-fourths; discal striae weakly impressed, punctured in regular rows, punctures of moderate size, distinctly impressed; discal interstriae weakly convex, mostly 3.0–4.0 times wider than striae, each with three rows of very short, spatulate, yellowish scales, scales in median row slightly longer, half as long as interstitial width. Declivity evenly convex; very similar to *C. atlanticus*.

**Female.** Unknown.

**Distribution.** This species is known from Saint Lucia.

**Etymology.** This species is named for one of the collectors, Crystal Maier, formally a graduate student at Montana State University and the University of Kansas, and currently at the Field Museum of Natural History, Chicago, IL. She was one of the group of dedicated students that assisted the author in his collecting activities on Saint Lucia in 2009.

**Comments.** The male of this species is very similar to the male of *C. atlanticus* but differs by the presence of a much smaller, bifid median elevation on the frons at the level of the antennal insertions, by the much less dense vestiture on the elytra and by the smaller size.

### ***Chramesus opacicollis* Eggers**

Figure 17.

*Chramesus opacicollis* Eggers 1940: 124; Wood and Bright 1992: 267; Bright and Skidmore 1997: 60; Bright and Skidmore 2002: 39.

*Chramesus robustus* Schedl 1949b: 264; Wood and Bright 1992: 268. (Cuba). **New Synonymy.**

*Chramesus opacicollis nitidus* Eggers 1940: 125 (Martinique).

*Chramesus brevisetosus* Bright 1972: 40 (Jamaica).

**Description (Male).** Length 1.4–1.6 mm, 1.8 times longer than wide; head, pronotum and ventral surfaces black, elytra reddish. Frons longitudinally impressed from epistoma to near upper level of eyes, flattened above; lateral margins elevated, with a sharp tooth-like projection just below antennal insertions; surface dull, minutely reticulate, punctures not evident, with two, low, round swellings on inner slope of impression just above level of antennal insertions; vestiture consisting of sparse, fine, yellowish setae. Antennal club 2.5 times longer than wide; funicle with a few, long setae. Pronotum 1.4 times wider than long, widest behind middle; sides broadly arcuate, distinctly constricted behind narrowly rounded anterior margin; surface moderately dull, reticulate; asperities on anterior half widely scattered, small, extending to lateral margin; posterior area distinctly punctured, punctures impressed, separated by a distance equal to their own diameters; median line faintly elevated; vestiture consisting of narrow, spatulate scales arising from each puncture or asperity, shorter on posterior lateral areas. Elytra as long as wide; sides parallel on basal two-thirds, broadly converging to broadly rounded apex; discal striae slightly impressed, punctured in even rows, punctures large, wider than interstriae, distinctly impressed, each with a minute seta; discal interstriae narrower than striae, interstriae 1 (usually), 2 and 3 each with a double row of erect, acutely pointed, yellowish setae and minute granules, remaining discal interstriae with one median row of similar setae and granules, all setae slightly longer than interstriae width, no additional vestiture present. Declivity convex; similar to disc except striae slightly more deeply impressed and setae and small tubercles in single rows on all interstriae.

**Female.** Similar in size and proportions to male. Frons weakly convex, not longitudinally concave, weakly transversely impressed above epistoma; surface reticulate, punctures very faint. Pronotum with sides subparallel on basal half, then constricted to the broadly rounded anterior margin; surface as in male but devoid of asperities. Elytra as in male except interstriae a little more brightly shining and tubercles a little larger. Declivital interstitial scales shorter.

**Distribution.** This species is known from Cuba and Jamaica to Grenada.

**Specimens examined.** **CUBA:** Holguin Province, Estación Ecológica, 656 m, mercury vapor light, 12.V.2013, A. B. T. Smith, R. Anderson, G. Zhang (1-CMNO); Las Villas, T. Collantes, 7-73, a la luz (1-CNCI). **DOMINICA:** Clarke Hall, 1-10 March 1965, W. W. Wirth, light trap (1-USNM); 1250', 5 mi. E Dublanc, 16 August 1986, C. W. and L. B. O'Brien (4-CNCI); Saint Peter Parish, Syndicate Trailhead, 28 June 2004, R. Turnbow (1-RHTC). **GRENADA:** Saint Andrew, Mirabeau Agriculture Laboratory, various dates in 1990, various collectors, light trap (25-SBPC, FSCA, CNCI); Pearls Airport, 9.VI.1990, Frank and Thomas (1-SBPC). **GADELOUPE:** Bouillante, Cretes de Village aux battages, 19.VII.1999, D. and JP Roguet (1-CNCI); BT. Sofaia, 6 km SW Ste. Rose, 26.V.1985, C. W. and L. B. O'Brien (1-CNCI); Trois-Rivières, Leo Dufau (2-MNHN). **JAMAICA:** Saint Andrews, June 1989, C. Cottrell / ex. *Hibiscus elatus* twigs (2-CNCI); Saint Ann, Mt. Diablo, 20 August 1966, H. F. Howden (1-CNCI); Saint Thomas, Whitefield Hall, 28 July 1966, A. T. Howden (2-CNCI). **MONTSERRAT:** Cassava Ghaut, Beattie House, 23 March-03 April 2002 and 06-12 June 2002, 632 ft., A. Krakower, uv light (2-WIBF). **SAINT LUCIA:** Barre de L'Isle, various dates in 2009, 34 m, uv light, C. A. Maier, M. L. Gimmel, E. A. Ivie, R. C. Winton (4-WIBF); Gros Piton, 09-15 June 2009, C. A. Maier, E. A. Ivie, uv light (1-WIBF); Mont LaCombe, 271 m, 04-18 June 2009, uv light, R. C. Winton (6-WIBF, CNCI); Piton Flore, 512 m, 08-14 June 2009, uv light, R. C. Winton and C. A. Maier (1-WIBF). **SAINT VINCENT AND THE GRENADINES:** Saint Vincent, Hermitage Forest, E. of Spring Village, 15-27.VIII.2006, forest edge flight intercept trap and Malaise trap, 348 m, S. and J. Peck (2-SBPC).

**Comments.** Adults of this species may be recognized by the presence of long, acute setae in the discal and declivital interstriae. These setae are either in a single or double median row in each interstriae. The frons of the male is longitudinally impressed from the epistoma to near the upper level of the eyes, the lateral margins are elevated and bear a sharp tooth-like projection just below the level of the antennal insertions. The female frons is evenly convex and slightly impressed above the epistoma.

The above treatment is based on the holotype and a cotype of *C. opacicollis* in the MNHN and the holotypes of *C. robustus* and *C. brevisetosus* in the USNM. All were found to represent the same species. Eggers (1940) described a variety of *C. opacicollis* as *C. o. nitidus*. Four unlabeled specimens of this variety in the MNHN, one of which bears Eggers type label, were examined.

***Chramesus palearis* Bright, sp. nov.**

Figure 15.

**Type Material.** **HOLOTYPE** (female) labeled: "VIRGIN IS.: Saint Croix, Sprat Hall, 01-15 Dec. 1982, J. A. Yntema" / "HOLOTYPE *Chramesus palearis* D. E. Bright 2016" (CNCI).

**Description (Female).** Length 2.0 mm, 1.8 times longer than wide. Frons distinctly, transversely impressed from epistomal margin to very slightly above level of antennal insertions, flattened above to upper level of eyes; surface moderately shining, densely reticulate, with widely scattered, fine punctures; vestiture consisting of abundant, fine, slightly flattened, recumbent setae. Antennal funicle elongate, 0.8 times as long as club; club 2.5 times longer than wide, surface densely pubescent. Pronotum 1.4 times wider than long, widest at base; posterior margin bisinuate, median area strongly produced behind; sides arcuately converging to broadly rounded, anterior margin; anterior margin without serrations; surface shining, reticulate, with numerous, scattered, low asperities, these becoming more erect and acute toward lateral areas; several larger, more erect, acute asperities present on anterio-lateral areas behind anterior margin; vestiture consisting of numerous, recumbent, short, acutely pointed, elongate scales, these becoming more dense toward posterior margin. Elytra 1.1 times longer than wide; discal striae very narrow, very slightly impressed, punctures small, weakly impressed; discal interstriae 4.0-5.0 times wider than striae, flat, densely covered by small, semierect, light and dark brown scales, these completely concealing surface and arranged in four or five indistinct rows, those in median row slightly longer and more erect. Declivity convex; vestiture as on disc.

**Male.** Unknown.

**Distribution.** This species is known from Saint Croix in the U. S. Virgin Islands.

**Etymology.** From *pales*, Latin for chaff, referring to the scaly vestiture of the adult.

**Comments.** Females of this species may be distinguished by the larger size, by the very densely scaly elytral surface and by the distribution.

***Chramesus rotundatus* (Chapuis)**

Figures 13, 14, 379, 380.

*Rhopalopleurus rotundatus* Chapuis 1869: 47.

*Chramesus rotundatus*: Wood and Bright 1992: 268; Bright and Skidmore 1997: 60; Bright and Skidmore 2002: 510; Bright and Torres 2006: 395.

*Chramesus deplanatus* Eggers 1940: 124 (Guadeloupe).

**Description (Male).** Length 1.7–2.1 mm, 1.5–1.6 times longer than wide; dark reddish-brown. Frons deeply concave from epistoma to well above upper level of eyes, lateral margins acutely elevated with a sharp tooth above antennal insertion; surface dull, minutely reticulate, with a few, scattered setae. Antennal funicle club-shaped, with a tuft of long setae on distal end; club large, elongate-oval, 2.5 times longer than wide. Pronotum strongly convex from base to anterior margin, 1.6 times wider than long, widest at base; sides weakly arcuate, strongly converging from base to broadly rounded anterior margin; surface finely punctured and finely granulate, granules larger on lateral areas, interpuncture space finely reticulate; vestiture consisting of short, recumbent, hairlike setae. Elytra as long as wide, evenly convex from base to apex; sides broadly rounded to broadly rounded apex; discal striae deeply impressed, glabrous; interstriae 1 slightly impressed, slightly wider than adjacent striae; interstriae 2 broadly widened behind base, gradually narrowing toward apex, widened area slightly elevated to flat; remaining interstriae similar to first, not elevated, slightly wider than striae on disc, gradually narrowing to apex; vestiture consisting of very short, very dense, recumbent scales on interstriae 1–5, these scales becoming less abundant on more lateral interstriae, all interstriae with a median row of very short, erect, acutely pointed scales, these scales longer on interstriae seven to nine.

**Female.** Frons convex, weakly, transversely impressed slightly above level of antennal insertions; surface dull, minutely reticulate, faintly punctured. Antennal funicle with a few long setae. Elytra as in male except interstriae 2 less strongly widened, not elevated; vestiture less extensive, denser on first and second interstriae.

**Distribution.** This species is widely distributed in the West Indies.

**Specimens examined.** **DOMINICA:** Saint John Par., Cabrits National Park, blacklight trap, 28 June 2004, R. Turnbow (1–RHTC). **GADELOUPE:** Island record only (1–MNHN); Basse T., Gourbeyre, Palmiste, 05–20. Jan. 2003, J. Touroult (3–WIBF); Bas. Ter.: Rivière Sens, Sentier Houëlemont, 80 m, 19–31.V.2012, humid forest flight intercept trap, S. Peck (1–SBPC); Bas. Ter.: Mahault, Rivière Colas, 71 / xeric forest, streamside uv trap, 18.V.2012, S. Peck (1–SBPC); Basse-Terre: Pigeon, 10 Sept. 2010, R. Turnbow (5–RHTC, 3–CNCI). **MARTINIQUE:** Diamant, June 17, 1960: and C. Vaurie (1–CNCI); Le Robert Bord de Mer, 24.VII.1997, leg. D. Roguet (5–CNCI). **PUERTO RICO:** Cabo Rojo, Dic. 1960, Ramonita Gotte (1–CNCI). **SAINT LUCIA:** Chassin trap site, 94 m, 23–26 May 2009, uv light, R. C. Winton and C. A. Maier (1–WIBF); 11 km W Dennery, Barré de L’Isle Trail, 25.VII.2007 / uv light, S. and J. Peck (2–SBPC); Louvet trap site, 30 June–05 July 2009, uv light, C. A. Maier and K. J. Hopp (1–WIBF); nr. Micoud, trail towards Fond Bay, 15 m, A. R. Cline and S. D. Gaimari, 16–22–May–2009, ex blacklight trap (1–WIBF); Micoud, Escap Community, 46 m, various dates in 2009, at house, various collectors (5–WIBF); Mon Repos, Fox Grove Inn, 90 m, 20–28.VII.2007 / uv light, S. and J. Peck (3–SBPC); Barre de L’Isle, 340 m, 25–28 June 2009, uv light, E. A. Ivie (3–WIBF); Island record only, II.1978, S. Marshall (1–CNCI). **SAINT VINCENT AND THE GRENADINES:** **Mustique Island,** H. H. Smith (1–NHML); **Saint Vincent,** Leeward side, H. H. Smith (1–NHML).

**Comments.** Adults of this species are unique within the genus in the West Indies. They may be distinguished by the distinctly widened and elevated discal interstriae of each sex, with interstriae 2 much wider than the other interstriae at the middle in the male (Fig. 14), by the very densely scaly elytral interstriae, by the deeply concave male frons which bears a distinct tooth on the lateral margin above the antennal insertions and by the narrow, deeply impressed elytral striae. In addition, the antennal funicle of the male bears a tuft of very long setae (Fig. 379), while the female has a few long setae at the distal end of the funicle (Fig. 380).

*Chramesus deplanatus* was described from two specimens, one in “Sammlung Eggers” (the type) and “1 Cotype in Museum Paris” (Eggers 1940). The holotype was lost in the shipment of the Eggers collection to the USNM in 1948 (Anderson and Anderson 1971). Anderson and Anderson (1971) designated the remaining co-type as the lectotype, but did not label it as the lectotype. That specimen was examined during this study. It bears the labels “MUSEUM PARIS, Guadeloupe, (Mouflet), COLL: LABOULBENE” / “Guadeloupe, Mouflet” (handwritten) and Eggers co-type identification label. It bears a red “PARATYPE” label, obviously added sometime later. I have added a red label “LECTOTYPE desig. by Anderson and Anderson 1971” to further indicate its status. The species was treated as a synonym of *C. rotundatus* by Schedl (1963b).

***Chramesus scabiosus* Bright, sp. nov.**

Figure 19.

**Type Material.** **HOLOTYPE** (male) labeled: “SAINT LUCIA: Micoud Escap Community, 13.8324°N, 60.8986°W, 28 JUNE-03 July 2009, WIBF group, at house” / “HOLOTYPE *Chramesus scabiosus* D. E. Bright 2016” (WIBF [CNCI]). **ALLOTYPE** labeled with same data as holotype plus my allotype label (WIBF [CNCI]). **PARATYPES** (15): 2 labeled with same data as holotype (WIBF); 3 labeled with same data as holotype except collectors are “M. A. Ivie et al.” (CNCI, WIBF); 4 labeled: “WEST INDIES: SAINT LUCIA, nr. Micoud, trail towards Fond Bay, 13°49'48"N 60°53'42"W, 15 m, A. R. Cline and S. D. Gaimari collrs., 15-22-May-2009, ex blacklight trap” (CNCI, WIBF); 3 labeled: “WEST INDIES: SAINT VINCENT AND THE GRENADINES: Union Island, Chatham Bay, Water Rock Reserve, S. Peck” / “N12°36', W61°26', 14-20.VII.2009, uv traps-tall forest” (SBPC); 2 labeled: “W. I.: MARTINIQUE, 4 km SW Le Marin, Morne Aca, 260 m, N14°27.8", W60°53.9" / “Humid forest hilltop clearing FIT, S. Peck, 13-28.VI.2012” (SBPC); 1 labeled: “W. I., GUADELOUPE, Bas. Ter., Pigeon, Chalet Sou-le-Vent, N16°09.05, W61°45.97, 170 m” / “Hotel yard uv trap, 13.V.2012, S. Peck, collr.” (SBPC); 1 labeled: “GUADELOUPE: Basse-Terre, La Trace du Petit-Malendure, 21 MAY 2012, R. Turnbow” (FSCA).

**Description (Male).** Length 1.5 mm, 1.8 times longer than wide. Frons weakly, concavely impressed from epistoma to above upper level of eyes, lateral margins of impression not elevated or margined and without a tooth or other elevation; surface of concave area smooth and glabrous on lower half, reticulate on upper half with scattered, fine setae, those on periphery of concave area very slightly longer; epistoma smooth, bearing a few fine setae. Antennal funicle narrowly elongate, 0.5 times as long as club, with numerous long setae; club 2.0 times longer than wide, surface densely pubescent. Pronotum 1.2 times wider than long; sides broadly arcuate, strongly narrowed to narrowly rounded anterior margin; surface of disc dull, minutely reticulate, with dense, very short scales and numerous, small asperities, these as long as surrounding scales. Elytra (measured along suture) 1.2 times longer than wide; sides straight on basal half, apex broadly rounded; discal striae very narrow, very weakly impressed, glabrous; discal interstriae flat, 5.0-6.0 times wider than striae, all (except second) with three to five rows of small, broad scales, scales in median row slightly longer, interstriae 3 with four or five rows of scales. Declivity evenly convex; striae and interstriae as on disc except interstriae 2 and 3 slightly narrower, each with three rows of scales.

**Female.** Frons weakly convex to slightly flattened, very weakly flattened or impressed from epistomal margin to very slightly above level of antennal insertions, impression divided by a fine, longitudinal elevation; surface dull, densely reticulate and minutely granulate with a very small, smooth, glabrous area just above epistomal margin; vestiture consisting of moderately abundant, slightly flattened, recumbent setae, these slightly more abundant along inner margin of eyes. Antennal funicle as in male except with fewer setae. Pronotum and elytra as in male.

**Distribution.** This species is known from Union Island in Saint Vincent and the Grenadines, Guadeloupe, Martinique and Saint Lucia.

**Etymology.** From *scabiosus*, Latin for rough or scurfy, referring to the rough, scaly vestiture.

**Comment:** The adults of this species may be recognized by the small size, by the weakly convex to flattened female frons which is not impressed above the epistomal margin, by the weakly concave male frons the lateral margin of which is not elevated or otherwise modified, by the smaller pronotal asperities that are as long as the surrounding scales and by the elytral vestiture as described above.

***Chramesus squamosus* Bright, sp. nov.**

Figure 18.

**Type Material.** **HOLOTYPE** (male) labeled: “MONTSERRAT: Woodlands, Cassava Ghaut, Beattie House, 30 May-06 June 2002, uv light, M. A. Ivie” / “HOLOTYPE *Chramesus squamosus* D. E. Bright 2016” (WIBF [CNCI]). **PARATYPES** (19): all labeled with same data as holotype except date as follows, 2 labeled same as holotype, 3 labeled 21–30 June 2002, 12 labeled 23 Mar-03 Apr 2002, 1 labeled 03 Jan 2002, and 1 labeled 13–14 Jan 2002 (CNCI, WIBF).

**Description (Male).** Length 1.4–1.5 mm, 2.0 times longer than wide. Frons with a broad, flat, glabrous, triangular area above epistoma, broadly, deeply concave above this area to level of upper margin of eyes; surface moderately shining, densely reticulate, with scattered, short, yellowish setae; lateral margins acute, not elevated, without a tooth or tubercle. Antennal funicle with a brush of long, yellowish setae; club 2.0 times longer than wide. Pronotum 1.3 times wider than long, widest at middle; sides broadly arcuate, anterior margin broadly rounded; anterior margin with five or six erect serrations; discal surface shining, with scattered, very small, erect asperities, these slightly larger on lateral areas; entire surface with dense, recumbent, very small, round to slightly oval scales. Elytra 1.6 times longer than wide; sides parallel on basal two-thirds, broadly rounded at apex; striae very narrow, very slightly impressed; discal interstriae 3.0–4.0 times wider than striae, each with three rows of densely placed, small scales, those in median row slightly longer and more erect. Declivity convex; vestiture as on disc.

**Female.** Frons convex, slightly, transversely impressed just above epistoma; surface dull, densely reticulate, with abundant, short setae. Pronotum and elytra as in male, except declivital interstriae 2 is slightly narrower than on the disc, with a single row of short scales.

**Distribution.** This species is known from Montserrat.

**Etymology.** From *squama*, Latin for scale, referring to the scaly vestiture.

**Comments.** Adults of this species may be recognized by the very small size, by the very short, abundant scales on the pronotum and elytra, by the absence of a tooth on the lateral margin of the male frons and by the distribution.

**Genus *Cladoctonus* Strohmeier**

*Cladoctonus* Strohmeier 1911: 17; Wood and Bright 1992: 237; Bright and Skidmore 2002: 311 (checklist); Bright 2014: 60.

Species included in *Cladoctonus* may be distinguished from those in other genera in the Phloeosinini by the 5-segmented (pedicel excluded) antennal funicle, by the subglobular antennal club with sutures partly to completely absent and by the contiguous procoxae. In addition, the female frons is convex and is weakly impressed in the male, the pronotum is punctured and unarmed by granules or asperities, the elytral striae are not impressed but the individual punctures are impressed, the elytral interstriae are usually narrower than the striae and shining and the declivity is steeply convex.

Wood and Bright (1992) record seven species from tropical America, five species are reported herein from the West Indies. The species are phlephagous in a variety of host plants.

### Key to species of *Cladoctonus* in the West Indies

1. Length less than 1.6 mm, 2.4 times longer than wide ..... 2  
 — Length greater than 1.7 mm ..... 4
- 2(1). Declivital interstriae 2 not impressed, bearing a median row of small granules; declivital interstriae 3–7 with very small granules; length 1.4 mm; Virgin Islands ..... *C. minor* Bright, sp. nov. (p. 48)  
 — Declivital interstriae 2 slightly to not impressed, without granules; declivital interstriae 5, 7 and 9 each with large, acute granules ..... 3
- 3(2). Declivital interstriae 2 slightly impressed below level of one and three; discal striae slightly impressed, punctured in distinct rows; discal interstriae smooth, shining, with minute punctures or impunctate; length 1.3–1.5 mm; Greater Antilles ..... *C. cubensis* (Wood) (p. 46)  
 — Declivital interstriae 2 not impressed; discal striae not impressed, more irregularly punctured; discal interstriae with minute punctures; length 1.5 mm; Saint Vincent and the Grenadines .  
 ..... *C. peckorum* Bright, sp. nov. (p. 49)
- 4(1). Length 1.7–1.8 mm; elytral declivity evenly convex, all interstriae of equal height; costal margin of elytra acutely elevated, with four or five acute granules; Dominica, Saint Lucia ..... *C. tuberosus* Bright, sp. nov. (p. 51)  
 — Length greater than 1.8 mm; interstriae on elytral declivity variable in height, with or without granules or tubercles; costal margin of elytra not elevated, without granules ..... 5
- 5(4). Length 2.5 mm; declivital interstriae 1 devoid of distinct granules, interstriae 2–7 each with large, acute granules; female frons flattened from epistoma to above upper eye level, densely pubescent, with a large, shining, median tubercle at upper eye level; Grenada, Jamaica ..... *C. torosus* Bright, sp. nov. (p. 49)  
 — Length less than 2.5 mm; declivity and frons variable, not as above ..... 6
- 6(5). Each declivital interstriae bearing a row of small granules, these much shorter than interstitial width; length 2.0–2.2 mm; Guadeloupe ..... *C. major* (Eggers) (p. 47)  
 — Declivital interstriae 1, 3, 5, 7 and 9 each with a median row of small granules; length 1.8–2.1 mm ..... 7
- 7(6). Strial punctures on disc not especially large, interstriae wider than striae; Lesser Antilles ..... *C. interruptus* (Eggers) (p. 47)  
 — Strial punctures on disc especially large, interstriae narrower than striae; Greater Antilles ..... *C. brevisetosus* Bright (p. 45)

### *Cladoctonus brevisetosus* Bright

Figure 22.

*Cladoctonus brevisetosus* Bright 1972: 46; Wood and Bright 1992: 238; Bright 2014: 61.

**Description (Male).** Length 1.8–2.1 mm, 2.3 times longer than wide; light yellowish-brown to dark reddish. Frons convex, slightly flattened above epistomal margin; surface shining, punctures deep, separated by a distance equal to more than their own diameters on vertex, closer together above epistomal margin; vestiture sparse, consisting of small, hairlike setae arising from each puncture, these longer along epistomal margin, reaching their greatest length above epistomal lobes. Antennal club round, with one distinct and several indistinct sutures. Pronotum 1.1 times wider than long, widest at middle; sides

evenly arcuate, slightly constricted just behind the broadly rounded anterior margin; surface shining, distinctly, densely punctured over entire surface, punctures deep, closer than a distance equal to their own diameters, glabrous except for a single broken row of erect hairlike setae along anterior margin. Elytra 1.5 times longer than wide; sides parallel on basal three-fourths, then broadly rounded behind; striae slightly impressed on disc, more so over declivity, punctures large, deeply impressed and close; interstriae convex, as wide as striae, surface shining, smooth on disc becoming granulate toward declivity. Declivity broadly convex; all interstriae except 2, 6 and 8 slightly elevated and convex, 1 more distinctly elevated, each with a few sharp-pointed tubercles; interstriae 2 slightly impressed, flat, narrower than interstriae 1 or 3, devoid of tubercles; interstriae 9 with a slightly elevated ridge which joins costal margin near apex of interstriae 3; vestiture sparse, confined to declivity, consisting of short, hairlike setae arising from the base of each tubercle, these setae equal to or shorter than the width of an interstriae.

**Female.** Similar to male except frons evenly convex.

**Distribution.** This species is known from the Greater Antilles.

**Specimens examined.** **CAYMAN ISLANDS: Grand Cayman**, west end of Georgetown, light trap / 17.IV-26.VIII.1938, Oxf. Un. Cayman Is. Biol. Exped., C. B. Lewis, G. H. Thompson (1-NHML). **DOMINICAN REPUBLIC:** Barahona, Guarocuyo Hotel, 9.VI.1998, R. E. Woodruff; H. Freytag, blacklight trap, sea level (1-REWC); Province La Altagracia: N. de Este, Boca de Yuma, 05 Aug 1999, 2 m, at light, M. A. Ivie and K. A. Guerrero (2-WIBF). **JAMAICA:** Trelawny Parish, Duncans, 8 August 1966, Howden and Becker (1-CNCI); same locality, 4 August 1966, A. T. Howden (1-CNCI). **PUERTO RICO:** Guaynabo, 5.VIII.95 and 15.XII.95, J. Torres / ex: light trap (2-CNCI).

**Comments.** This species closely resembles *C. cubensis* (Wood) from Cuba, however, the holotype of Wood's species was compared to specimens of *C. brevisetosus* and found to differ in a number of respects. Declivital interstriae 1 and 3 of *C. brevisetosus* are more strongly elevated, the declivital tubercles are slightly larger, the elytral striae are more deeply impressed and the declivital setae are shorter. Adults of *C. brevisetosus* are slightly larger (1.7–2.1 mm vs. 1.6 mm) and the pronotum is slightly wider (1.1 mm vs. 1.0 mm).

### *Cladoctonus cubensis* (Wood)

Figure 21.

*Hoplitophthorus cubensis* Wood 1961: 107.

*Cladoctonus cubensis*: Wood and Bright 1992: 238; Bright 2014: 61.

**Description (Male).** Length 1.3–1.5 mm, 2.4 times longer than wide. Frons strongly convex, with a deep, transverse impression just above epistomal margin; surface smooth, shining, with coarse, close, deep punctures. Antennal club round, appearing inflated, with one recurved suture on basal half. Pronotum less than 1.1 times wider than long, widest at base; sides weakly arcuate, slightly converging toward broadly rounded, unarmed anterior margin; surface smooth, shining, glabrous, with coarse, deep punctures, these separated by much less than diameter of a puncture; interpuncture space smooth, without punctures. Elytra 1.5 times longer than wide; sides straight, parallel on basal three-fourths, broadly rounded at apex; discal striae weakly but distinctly impressed, with large, deep punctures; discal interstriae as wide as striae, smooth, usually with a median row of fine, minute punctures. Declivity steeply convex; interstriae 2 weakly impressed below level of 1 and 3, narrower than 1 and 3 and without tubercles; interstriae 1 and 3 slightly elevated, convex, each with a median row of small, acute tubercles; interstriae 5, 7 and 9 each with a median row of small tubercles and short setae.

**Female.** Similar to male except frons evenly convex, not impressed above epistoma.

**Distribution.** This species is known from the Greater Antilles, and is recorded from Campeche in Mexico (Wood and Bright 1992).

**Specimens examined.** **CUBA:** Cayamas (1-USNM). **DOMINICAN REPUBLIC:** Hato Mayor, Parque Los Haitises, near Cueva de Arena, 10 m., 7–9 July 1992 / C. Young, R. Davidson, S. Thompson, J. Rawlins, coastal vegetation on limestone (1-CMNH); Province La Altagracia: N. de Este, Boca de Yuma, 05 Aug 1999, 2 m., at light, M. A. Ivie and K. A. Guerrero (2-WIBF). **JAMAICA:** Manchester Parish, Mandeville, DeCarteret College, 18.V.1969, R. E. Woodruff and K. Stanton, blacklight trap (1-FSCA).

**Comments.** Adults of this species may be distinguished by the small size, by the distinctly impressed declivital interstriae 2 that does not bear tubercles, by the distinctly impressed elytral and declivital striae and by the slightly elevated declivital interstriae 1 and 3 each of which bear distinct, small granules. Adults are similar to those of *C. peckorum* but may be distinguished by the characters in the above key and in the comments under *C. peckorum*.

***Cladoctonus interruptus* (Eggers)**

Figures 381, 428, 498.

*Hoplites interruptus* Eggers 1940: 126.

*Cladoctonus interruptus*: Wood and Bright 1992: 239; Bright and Skidmore 1997: 53; Bright and Skidmore 2002: 36; Bright 2014: 61.

**Description (Male).** Length 1.8–2.1 mm, 2.4–2.5 times longer than wide; reddish-brown. Frons convex, slightly flattened above epistomal margin; surface shining, punctures deep, separated by a distance equal to more than their own diameters on vertex, closer together above epistomal margin; vestiture sparse, consisting of small, hairlike setae arising from each puncture, these longer along epistomal margin, reaching their greatest length above epistomal lobes. Antennal club round, with one distinct and several indistinct sutures. Pronotum 1.0 times wider than long, widest at middle; sides parallel on basal half, slightly constricted just behind the broadly rounded anterior margin; surface shining, distinctly, densely punctured over entire surface, punctures deep, closer than a distance equal to their own diameters, glabrous. Elytra 1.5 times longer than wide; sides parallel on basal three-fourths, then broadly rounded behind; discal striae not impressed on disc, slightly so over declivity, punctures on posterior half large, deep; discal interstriae convex, half as wide as striae, surface shining, smooth on disc, with a median row of very small punctures. Declivity broadly convex; interstriae 1 and 3 distinctly but slightly elevated, each with four to six acute tubercles; interstriae 2 impressed, narrower than 3, devoid of tubercles; interstriae 4–6 each with a few sharp-pointed tubercles; interstriae 9 acutely elevated from declivital base to apex, with several, widely separated serrations.

**Female.** Similar to male except frons evenly convex.

**Distribution.** This species is known from Antigua, Guadeloupe and Montserrat in the Lesser Antilles, and is recorded from Colombia (Wood 2007).

**Specimens examined.** **ANTIGUA:** Christian Valley, blacklight trap, 6–6.VIII.1991, FAO Insect Survey (3–FSCA, SBPC). **GADELOUPE:** Basse-Terre: Pigeon, Chalet Sou-le-Vent, 170 m / hotel yard uv trap, 13.V.2012, S. Peck (1–SBPC); Pointe-à-Pitre, Morne Joliviere, 12–31.VII.1999, uv, 160 w, leg. D. Roguet (6–CNCI); Trois-Rivières (2–NHMW). **MONTSERRAT:** Cassava Ghaut, Beattie House, 05–16 Feb 2002, 632 ft., A. Krakower, uv light (1–WIBF).

**Comments.** Adults of this species may be recognized by their larger size, by the slightly elevated declivital interstriae 1 and 3 which bear four to six acute tubercles, by the very large, deep punctures on the posterior half of the elytral disc and by the unarmed, impressed declivital interstriae 2.

The host of this species is *Citrus aurantium* (Wood 2007).

The holotype and five co-types of *Hoplites interruptus* in the MNHN and one co-type in the NHMW were examined.

***Cladoctonus major* (Eggers)**

Figure 23.

*Hoplites major* Eggers 1940: 125.

*Cladoctonus major*: Wood and Bright 1992: 239.

**Description (Male).** Length 2.0–2.2 mm, 2.4–2.5 times longer than wide; reddish-brown. Frons convex, slightly flattened above epistomal margin; surface shining, punctures deep, separated by a distance equal to more than their own diameters on vertex, closer together above epistomal margin; vestiture sparse,

consisting of small, hairlike setae arising from each puncture, these longer along epistomal margin, reaching their greatest length above epistomal lobes. Antennal club round, with one distinct and several indistinct sutures. Pronotum 1.1 times wider than long, widest at middle; sides parallel on basal half, slightly constricted just behind the broadly rounded anterior margin; surface shining, distinctly, densely punctured over entire surface, punctures deep, closer than a distance equal to their own diameters, glabrous. Elytra 1.5 times longer than wide; sides parallel on basal three-fourths, then broadly rounded behind; discal striae not impressed on disc, slightly so over declivity, punctures on posterior half large, deep; discal interstriae convex, half as wide as striae, surface shining, smooth on disc, with a median row of very small punctures. Declivity broadly convex; striae weakly impressed; interstriae weakly convex with interstriae 1 slightly higher than others, all interstriae bearing a median row of setae, these longer than interstitial width and bearing a median row of four to six very small, acute tubercles, these much shorter than interstitial width; interstriae 9 rounded, without serrations.

**Female.** Similar to male except frons broadly, weakly concave and bearing a dense brush of short setae.

**Distribution.** This species is known from Guadeloupe and Puerto Rico.

**Specimens examined.** **GADELOUPE:** Trois Rivières (4–MNHN). **PUERTO RICO:** San. Germán, San Germán, Site 9, EDRR, Maricao State Forest, 18.15118, -66.99364, 3–30.VII.2013 (1–MSUC); Mayagüez, Mayagüez, Site 10, EDRR, Alzamora Farm, 18.21822, -67.14791, 20.VI-3.VII. 2013, C. Torres and H. R. Torres (2–MSUC, 2–CNCI).

**Comments.** Adults of this species may be distinguished from similar species by the median rows of small granules and short setae in each declivital interstriae.

The type series of two specimens and two additional specimens in the MNHN were examined. The description above was prepared from the type and includes a few additional characters not seen on the type but are visible on other specimens.

***Cladoctonus minor* Bright, sp. nov.**

Figure 24.

**Type Material.** **HOLOTYPE** (male) labeled: “**BR. VIRGIN IS.: Guana Is.**, Quail Dove Ghut, 13 Nov-25 Dec. 1992, 600 ft., Lio Wei Peng, flight inter. trap #13” / “**HOLOTYPE** *Cladoctonus minor* D. E. Bright 2016” (WIBF [CNCI]). **PARATYPE** (1) labeled: “**VIRGIN ISLANDS: St John**, Estates Bordeaux and Lameshur, Bordeaux, Mt. Lameshur Bay Trail, 03 JAN 1993, VIBFP colrs.” (WIBF).

**Description (Male).** Length 1.4 mm, 2.3 times longer than wide. Frons strongly convex, slightly flattened above epistomal margin but not transversely impressed; surface smooth, shining, with coarse, close, deep punctures. Antennal club round, inflated, with one strongly recurved suture on basal half. Pronotum very slightly wider than long, widest at base; sides weakly arcuate, slightly converging toward broadly rounded, unarmed anterior margin; surface smooth, shining, glabrous, with coarse, deep punctures, these separated by much less than diameter of a puncture; interpuncture space with minute, impressed punctures and lines. Elytra 1.5 times longer than wide; sides straight, parallel on basal three-fourths, broadly rounded at apex; discal striae not impressed, with large, deep punctures; discal interstriae much narrower than striae, smooth, with a median row of fine punctures. Declivity steeply, evenly convex; all interstriae of equal height, none elevated or impressed and all with a median row of very small, acute granules or tubercles; interstriae 2 as wide as interstriae 1 or 3; remaining interstriae with a median row of small tubercles short setae.

**Female.** Similar to male except frons evenly convex, with abundant, short setae.

**Distribution.** This species is known from Guana Island in the British Virgin Islands and Saint John in the U. S. Virgin Islands.

**Etymology.** From *minor*, Latin for little, referring to the small size of the adult.

**Comments.** The adults of this species may be distinguished by their small size and by the evenly convex elytral declivity on which all interstriae are equally elevated and interstriae 2 is not impressed. Additional characters are mentioned in the above description.

***Cladoctonus peckorum* Bright, sp. nov.**

Figure 25.

**Type Material.** **HOLOTYPE** (male) labeled: “WEST INDIES: SAINT VINCENT AND GRENADINES: Union Island, Chatham Bay, Water Rock Reserve, S. Peck” / “N12°36', W61°26', 14–20.VIII.2009, uv traps-tall forest” / “HOLOTYPE *Cladoctonus peckorum* D. E. Bright 2016” (SBPC [CNCI]). **PARATYPES** (2): 1 labeled: “WEST INDIES: SAINT VINCENT, Emerald Valley Hotel, Buccament, 12–19.VI.2007, dry forest uv light, S. and J. Peck” (SBPC); 1 labeled “GUADELOUPE: Basse-Terre, Pointe a Lazard, 17 MAY 2012, R. Turnbow” (FSCA).

**Description (Male).** Length 1.5 mm, 2.4 times longer than wide. Frons strongly convex, with a moderately deep, transverse impression just above epistomal margin; surface smooth, shining, with coarse, close, deep punctures. Antennal club round, appearing inflated, with one recurved suture on basal half. Pronotum less than 1.1 times wider than long, widest at base; sides weakly arcuate, slightly converging toward broadly rounded, unarmed anterior margin; surface smooth, shining, glabrous, with coarse, deep punctures, these separated by much less than diameter of a puncture; interpuncture space smooth, without impressed punctures. Elytra 1.4 times longer than wide; sides straight, parallel on basal three-fourths, broadly rounded at apex; discal striae not impressed, with large, deep punctures; discal interstriae as wide as striae, smooth, usually with a median row of fine, minute punctures. Declivity steeply convex; interstriae 2 not impressed below level of 1 and 3, narrower than 1 and 3, without tubercles; interstriae 1, 3, 5, 7 and 9 slightly elevated, convex, each with a median row of moderately large, acute tubercles and a median row of short setae.

**Female.** Similar to male except frons evenly convex, not impressed above epistoma.

**Distribution.** This species is known from Guadeloupe and Union Island and Saint Vincent in Saint Vincent and the Grenadines.

**Etymology.** This species is named for its collectors, Stewart and Jarmila Kukalová-Peck, in recognition of their extensive activities in collecting throughout the West Indies.

**Comments.** Adults of this species are very similar to those of *C. cubensis* but differ by the unimpressed elytral striae which are more irregularly punctured, by the evenly convex declivity with the unimpressed interstriae 2 and by the slightly larger declivital tubercles.

***Cladoctonus torosus* Bright, sp. nov.**

Figure 26.

**Type Material.** **HOLOTYPE** (female) labeled: “GRENADA: Saint Andrew, Mirabeau Agric. Lab., 2.IV.1990, A. Thomas, light trap” / “HOLOTYPE *Cladoctonus torosus* D. E. Bright 2016” (FSCA). **ALLOTYPE** labeled: “JAMAICA: Manchester Par., Mandeville, DeCarteret College, 19.V.1969, R. E. Woodruff, blacklight trap” / “ALLOTYPE *Cladoctonus torosus* D. E. Bright 2016” (CNCI).

**Description (Male).** Length 2.5 mm, 2.7 times longer than wide; reddish-brown. Frons slightly flattened from epistomal margin to well above eyes, with a large, median rounded tubercle located just below upper eye level, surface below tubercle slightly transversely impressed; surface shining, punctures small, close, separated by a distance equal to their own diameters; vestiture dense over entire surface from epistoma to vertex, consisting of moderately long, hairlike setae arising from each puncture, these longer along epistomal margin. Antennal club round, with one distinct and several indistinct sutures. Pronotum 1.2 times wider than long, widest at middle; sides arcuate on basal half, slightly constricted just behind the broadly rounded anterior margin; surface shining, distinctly, densely punctured over entire surface,



**Figures 21–27.** Declivities of *Cladoctonus* spp. **21)** *C. cubensis*. **22)** *C. brevisetosus*. **23)** *C. major*. **24)** *C. minor*. **25)** *C. peckorum*. **26)** *C. torosus*. **27)** *C. tuberosus*.

punctures deep, closer than a distance equal to their own diameters, glabrous. Elytra 1.6 times longer than wide; sides parallel on basal three-fourths, then broadly rounded behind; discal striae not impressed, punctures very small, very slightly impressed; discal interstriae 3.0–4.0 times wider than striae, surface shining, smooth on disc, with a median row of very small punctures. Declivity broadly convex; striae more distinctly impressed than on disc; interstriae 1 with a median row of very small granules, remaining interstriae each with a median row of six to eight large, acute granules; interstriae 9 acutely elevated from declivital base to apex, with several, widely separated serrations.

**Female.** Length 2.2 mm, 2.7 times longer than wide. Frons similar to male except surface above median tubercle is convex, not flattened and declivital granules are slightly larger.

**Distribution.** This species is known from Grenada and Jamaica.

**Etymology.** From *torus*, Latin for protuberance or bulge, referring to the large swelling on the frons.

**Comments.** Adults of this species may be easily distinguished by the presence of a large, median swelling on the frons of both sexes at the level of the upper eye margin. In addition, the elytral declivity bears large, acute granules in a median row in each interstriae except 1.

***Cladoctonus tuberosus* Bright, sp. nov.**

Figure 27.

**Type Material.** **HOLOTYPE** (sex?) labeled: "WEST INDIES: SAINT LUCIA, nr. Micoud, trail towards Fond Bay, 13°49'48"N, 60°53'42"W, 15 m, A. R. Cline and S. D. Gaimari collrs., 19–May-2009, ex bl trap" / "HOLOTYPE *Cladoctonus tuberosus* D. E. Bright 2016" (WIBF [CNCI]). **PARATYPES** (4): 3 labeled with same data as holotype (CNCI, WIBF); 1 labeled: "DOMINICA, Saint John Par., Cabrits National Park, blacklight trap, 27 June 2004, R. Turnbow" (RHTC).

**Description (sex?).** Length 1.7–1.8 mm, 2.5 times longer than wide. Frons strongly convex, very weakly flattened above epistomal margin; surface smooth, shining, with small, deep punctures. Antennal club round, inflated, sutures not evident, with a few scattered setae. Pronotum as wide as long, widest at base; sides weakly arcuate, slightly converging toward broadly rounded, unarmed anterior margin; surface smooth, shining, glabrous, with large, deep punctures, these separated by much less than diameter of a puncture; interpuncture space smooth. Elytra 1.1 times longer than wide; sides straight, parallel on basal three-fourths, broadly rounded at apex; discal striae not impressed, with large, deep punctures; discal interstriae as wide as striae, smooth, with a median row of fine punctures. Declivity steeply, evenly convex; all interstriae of equal height, 1 and 3 with a median row of very small, acute granules or tubercles; interstriae 2 as wide as interstriae 1 or 3, without tubercles; remaining interstriae each with a median row of small tubercles; interstriae 9 with a row of acute, widely separated serrations.

**Distribution.** This species is known from Dominica and Saint Lucia.

**Etymology.** From *tuberosus*, Latin for full of bumps or tubercles, referring to the granulate appearance of the interstriae.

**Comments.** Adults of this species may be distinguished by their small size, by the evenly convex elytral declivity with all interstriae of equal height and interstriae 2 devoid of granules. Other characteristics are mentioned in the above description.

**Genus *Dendrosinus* Chapuis**

*Dendrosinus* Chapuis 1869: 28; Wood and Bright 1992: 236; Bright and Skidmore 2002: 343 (checklist); Bright 2014: 61.

Member of this genus may be readily distinguished by the widely separated anterior coxae, by the 6-segmented (pedicel excluded) antennal funicle, by the basal margin of the pronotum being deeply grooved for reception of the elytral bases and by the stout, black body. In addition, the frons of both sexes is flattened and, in the female, bears a curved brush of dark, long setae arising on each lateral area and meeting at the median line, the eyes are entire, the antennal club has two procurved sutures on the basal half, the elytral striae are very narrow and deeply impressed, the declivity is gradual, convex and unarmed and the abdomen ascends to meet the elytral apices.

The species of this genus occur in cut or broken limbs, vines and other woody plants. Adults construct transverse, biramous galleries in the xylem and deep into the wood. Larvae make long mines following the grain of the wood (Wood 1982).

Eight species are known from Florida to Argentina, one occurs in the West Indies (Wood and Bright 1992).

***Dendrosinus bourreriae* Schwarz**

Figures 429, 499.

*Dendrosinus bourreriae* Schwarz 1920: 225; Wood and Bright 1992: 236; Bright and Skidmore 2002: 36; Bright and Torres 2006: 394.

*Dendrosinus lima* Eggers 1930: 166 (Puerto Rico).

**Description (Female).** Length 3.8–4.0 mm, 1.6 times longer than wide; black. Frons flattened, transversely impressed just above epistoma; surface brightly shining in median portion, punctate-reticulate above epistoma, along sides and on vertex; vestiture consisting of long, black setae arising from lateral margins and curled into a complete circle in median portion and short, light yellow setae arising from punctate area above epistoma and on vertex. Antennal club 1.4 times longer than wide, oval, truncate at tip, two slightly angulate sutures evident on basal half. Pronotum 2.0 times wider than long, widest opposite lateral elytral angles; sides arcuate; anterior margin broadly rounded; posterior margin strongly extended toward scutellar notch; surface dull, reticulate, densely punctate, punctures close, deep; median line slightly elevated, narrow; vestiture consisting of short, black setae arising from each puncture. Elytra (measured along suture) as long as wide; sides arcuate, broadly rounded behind; anterior margin strongly extended laterally along pronotum making scutellar notch very deep; discal striae moderately impressed, punctures small, widely spaced; discal interstriae flat, 3.0–4.0 times wider than striae, surface dull, reticulate except for abundant, small, widely spaced, shining granules; vestiture consisting of black setae arising from each granule. Declivity not deeply sloping, unmodified.

**Male.** Similar to female except lower portion of frons is very slightly impressed.

**Distribution.** This species is known from the Florida Keys to the Bahamas, Dominican Republic, Jamaica, Navassa Island and Puerto Rico.

**Specimens examined.** **BAHAMAS: Grand Abaco Island:** Man-O-War Cay, 20.VII.1971, H. Howden (1–CNCI). **South Bimini Island,** various dates in 1951, C. and P. Vaurie (24–AMNH, CNCI). **DOMINICAN REPUBLIC:** Pedernales, 4 km W. Oviedo, 10 m, arid thorn forest, 28.XI-4.XII.1991, intercept trap, Masner and Peck (1–CMNH). **JAMAICA:** Trelawny Parish, Duncans, 15 August 1966, Howden and Becker (1–CNCI). **NAVASSA ISLAND:** central forest area, 70 m, 26 July-4 August 1998, W. E. Steiner and J. M. Swearingen / Malaise trap in gap of mixed forest on limestone (1–USNM).

**Records from literature.** **BAHAMAS: Exuma:** Island record only (Turnbow and Thomas 2008). **CUBA:** Island record only (Vázquez et al. 2003). **PUERTO RICO:** Guayanilla, dead wood (Wolcott 1936).

**Comments.** Adults of this species may be easily recognized by the generic characters summarized above and in the species description and by the illustrations. It cannot be confused with any other species of Scolytidae.

The holotype in the USNM and two paratypes in the CNCI were examined.

**Genus *Phloeosinus* Chapuis**

*Phloeosinus* Chapuis 1869: 37; Wood and Bright 1992: 239; Bright and Skidmore 2002: 393 (checklist); Bright 2014: 64.

Members of *Phloeosinus* may be distinguished from those in related genera by the 4-segmented antennal funicle (pedicel excluded), by the oblique sutures on the asymmetrical antennal club, by the stouter body and by the emarginate eye. In addition, the pronotum is unarmed and punctured, the male frons is impressed, the female frons is convex and the declivity is convex with interstriae 1 and 3 each bearing a row of small to large tubercles (variable).

This is a moderately large genus, containing 29 species in North and Central America (Wood 1982). More than 30 species have been described from the Old World. One species is known from the West Indies.

***Phloeosinus neotropicus* Schedl, Resurrected Name**

Figures 382, 430, 500.

*Phloeosinus neotropicus* Schedl 1939a: 12; Wood and Bright 1992: 254 (as synonym of *P. serratus* (LeConte)).

**Description (Male).** Length 2.8 mm, 2.0 times longer than wide; elytra, ventral surfaces, antennae reddish, head and pronotum darker. Frons flattened, very weakly impressed, with a weakly elevated, median, longitudinal carina; surface shining, densely punctured and with scattered, very small granules. Antennal club narrowly-elongate, 2.2 times longer than wide. Pronotum 1.2 times wider than long, widest at posterior angles; sides arcuate, convergent on posterior three-fourths, distinctly constricted just before the narrowly rounded anterior margin; surface shining, densely punctured; median line faint. Elytra 1.2 times longer than wide; sides parallel, broadly rounded at apex; anterior margin arcuate, crenulations erect, separated; discal striae deeply impressed, punctures large, widely separated; discal interstriae flat, at least twice as wide as striae, surface shining, densely covered with transverse rugae. Declivity convex; interstriae 1 and 3 slightly more elevated, 1 bearing a row of four or five large, acute, prominent granules, 3 bearing a row of 10 smaller, acute granules or tubercles, these not laterally flattened; interstriae 2 slightly impressed, narrower than 1, unarmed; interstriae 5, 7, 8 and 9 each with a median row of smaller tubercles.

**Female.** Very similar to male except declivital interstriae 1 and 3 each bearing a median row of 10 or 12 much smaller, acute tubercles; interstriae 2 flattened, with a few, obscure, much smaller tubercles.

**Distribution.** This species is known from Jamaica.

**Specimens examined. JAMAICA:** Saint Andrew Parish, Cinchona, 1 August 1923, C. C. Gowdey (1–NHML), same locality, 1981, E. Garraway (2–CNCI).

**Comments.** This species name was placed in synonymy under *Phloeosinus serratus* (LeConte) by Wood (1977). A review of this synonymy during the present study showed that there were a number of characters indicating that this species should be considered a distinct endemic taxon. *Phloeosinus serratus* is a common species in junipers throughout western North America from Washington and Idaho to southern Mexico and displays considerable geographic variation. It does not occur in the eastern or southern United States. *Phloeosinus neotropicus* differs by the more inflated declivital tubercles on the male, by the narrower antennal club of the male (2.0 times longer than wide in *P. serratus*) and by fewer granules in declivital interstriae 2 of the female. Also, *P. neotropicus* occurs at high elevations on Jamaica, from 1000 m to 1688 m, in an endemic juniper, *Juniperus barbatensis*. Because of these differences, I recognize *P. neotropicus* as a distinct species. However, if after further study of the population variation throughout the range of *P. serratus*, the Jamaica population is not deemed to be a distinct species, then, at the very least, this species should be considered a subspecies of *P. serratus*.

The biology and population dynamics of this species have been studied by Garraway and Freeman (1981).

The holotype of *P. neotropicus* Schedl in the NHML was examined.

## TRIBE HYPOBORINI

### Genus *Chaetophloeus* LeConte

*Chaetophloeus* LeConte 1876: 382; Wood and Bright 1992: 271; Bright and Skidmore 2002: 307 (check-list); Bright 2014: 67.

Members of this genus may be recognized by the pronotal asperities which are restricted to two or three small paired groups of one to three asperities, by the more strongly flattened, broad protibia with the apical half armed by a row of 7–10 socketed denticles, by the 4-segmented antennal funicle (pedicel excluded) and by the antennal club with three sutures. In addition, the body is densely clothed with scales and setae, the protibia are contiguous, the scutellum is reduced in size and the declivity is convex and unarmed.

All species in this genus are monogynous and phloeophagous and construct galleries under the bark of twigs and branches of various trees and shrubs.

Twenty-four species are recorded from North and South America (Bright and Skidmore 2002). Ten species are recognized from the West Indies; one additional species from Tobago is included herein.

### Key to the species of *Chaetophloeus* in the West Indies

1. One pair of submarginal serrations present on base of interstriae 1 adjacent to scutellum ..... **2**  
— No submarginal serrations present on base of elytra adjacent to scutellum ..... **8**
- 2(1). Length 1.5 mm or less; male frons broadly, shallowly concave, with long setae at vertex extending halfway to epistoma; male mandible with an acute spine extending upward to epistomal margin; Bahamas ..... ***C. atlanticus* Bright** (p. 55)  
— Length greater than 1.5 mm; male frons deeply concave to flat, with long to short setae; male mandible with or without an acute spine ..... **3**
- 3(2). Male frons concealed by extraordinarily large, triangular, spine-like process on mandible extending from epistoma to upper level of eyes; length 1.8 mm; Tobago ..... ***C. mandibularis* Bright** (p. 61)  
— Male frons flat to concave, usually without spine on mandible or, if spine present then not extending above epistomal margin or slightly above margin ..... **4**
- 4(3). Male frons very deeply concave; male mandible with an acute spine extending upward to or slightly beyond epistomal margin; eye very large, almost contiguous on gular area and separated on vertex by a distance equal to or slightly wider than width of antennal club ..... **5**  
— Male frons flat to shallowly concave; male mandible without an acute spine; eye smaller, widely separated on vertex ..... **6**
- 5(4). Scales on elytral interstriae much shorter than interstriae width; antennal club narrow, 2.3 times longer than wide; spine on male mandible extending beyond epistomal margin; length 2.2 mm; Bahamas ..... ***C. bahamaensis* Bright, sp. nov.** (p. 56)  
— Scales on elytral interstriae longer than interstriae width; antennal club 1.8 times longer than wide; spine on male mandible shorter, not extending beyond epistomal margin; length 2.0 mm; Dominican Republic ..... ***C. woodruffi* Bright, sp. nov.** (p. 64)
- 6(4). Pronotum surface shining, with scattered punctures, sometimes coalescing into weakly impressed, narrow grooves; male frons with shorter setae, those on vertex not reaching epistomal margin; body more slender, 2.0 times longer than wide; length 2.1–2.2 mm; Dominican Republic ..... ***C. montanus* Bright, sp. nov.** (p. 62)  
— Pronotum surface dull, minutely reticulate, punctures minute, widely separated; male frons with longer setae, those on vertex reaching epistomal margin; length 1.8–2.2 mm ..... **7**
- 7(6). Body stouter, 1.8 times longer than wide; length 2.2 mm; Cuba and Dominican Republic ..... ***C. cubensis* Bright** (p. 57)  
— Body slightly more slender, 1.9 times longer than wide; length 1.6–2.1 mm; Jamaica ..... ***C. howdeni* Bright** (p. 58)

- 8(1). Length 2.0 mm; elytral striae deeply impressed, especially on posterior portion; male frons broadly flattened to vertex, with long setae on periphery, those arising on vertex extending to epistoma; male mandibles with a very small spine on cutting edge; Jamaica ..... *C. longisetum* Bright, sp. nov. (p. 60)
- Length much less than 2.0 mm; elytral striae not impressed or slightly impressed; male frons and mandible not as above ..... 9
- 9(8). Length 1.1–1.2 mm; antennal club elongate-oval, 1.5 times longer than wide, 3.0 times longer than funicle; male frons moderately deeply concave, densely pubescent over surface, with longer setae on vertex extending halfway to epistoma; Puerto Rico, Grenada ..... *C. minutus* Bright, sp. nov. (p. 62)
- Length 1.3–1.6 mm; antennal club broader, equal to or slightly longer than funicle; male frons weakly flattened to slightly concave ..... 10
- 10(9). Antennal club less than 1.4 times longer than wide, length equal to length of funicle; male frons concave, with a low, median carina on lower half; female frons weakly flattened, slightly transversely impressed above epistoma; length 1.5–1.6 mm; Jamaica ..... *C. chapini* (Blackman) (p. 56)
- Antennal club broader, slightly less than 1.3 times longer than wide, 1.7 times longer than funicle; male frons shallowly concave, with abundant, dense setae over surface; length 1.3–1.5 mm; Cuba, Dominica, Puerto Rico, Bahamas, Florida Keys ..... *C. insularis* (Blackman) (p. 58)

### *Chaetophloeus atlanticus* Bright

Figures 28, 38.

*Chaetophloeus atlanticus* Bright 1981a: 158; Wood and Bright 1992: 271.

**Description (Male).** Length 1.5 mm, 1.8 times longer than wide; dark reddish-brown, with abundant yellowish and light- and dark-brown scales intermixed. Frons broadly, shallowly concave from epistoma to well above eyes and laterally from eye to eye; surface densely, very finely granulate and dull, clothed with abundant, long, yellowish setae, these more abundant above epistomal margin and at lateral angles between eyes and epistomal margin; upper margin of frons above upper level of eyes bearing a fringe of longer, incurved setae, these half as long as distance from vertex to epistomal margin. Epistomal margin deeply, broadly emarginate. Mandible bearing an acute process arising on inner cutting edge, apices of process not quite reaching midpoint of epistomal margin. Antennal club oval, 1.5 times longer than wide, widest at middle; sutures indistinct, marked with regular rows of setae. Pronotum 1.7 times wider than long; sides broadly arcuate, feebly constricted just before broadly rounded anterior margin; surface moderately shining, minutely reticulate between close, moderately deep punctures; asperities arranged on lateral portions of disc in three groups, one group of three just behind anterior margin, a group of three slightly anterior to middle and a group of four slightly posterior to middle, these more erect than scales and slightly shorter; vestiture consisting of small, semirecumbent, scalelike setae, these 3.0 times longer than wide; a group of six longer, more erect scales located at midline on posterior margin. Elytra 1.3 times longer than wide; sides parallel, apex broadly rounded; anterior margin with eight pairs of marginal crenulations extending laterally to interstriae 4, one pair of submarginal crenulations at base of interstriae 1; discal striae moderately impressed, punctures small, impressed; discal interstriae 3.0 times wider than striae, each densely clothed with small, suberect scales, the median row of scales slightly more erect. Declivity convex; interstriae as on disc except slightly narrower; vestiture as on disc.

**Female.** Similar to male except frons broadly convex, mandible devoid of acute process.

**Distribution.** This species is known from the Bahamas.

**Specimens examined.** BAHAMAS: Andros Island, Forfar Field Station, 8 June 2004, R. Turnbow (1–RHTC); Forfar Field Station, nr Stafford Creek, 22–28.VII.2006, M. C Thomas, T. R. Smith, uv trap in costal coppice (2–FSCA); Money Point, 25.VII.2006, beating cut vegetation (1–FSCA). Eleuthera Island, Rainbow Bay, 1.VII.1987,

D. B. and R. W. Wiley, Malaise trap (4–RHTC, FSCA). **Great Abaco Island**, Man O'War Cay (near Abaco), Aug. 25–30, 1971, H. and A. Howden (1–CNCI) and various dates in August 1971 (6–CNCI). **San Salvador Island**, Gerace Research Center, 15 February 2004 / at blacklight, scrub forest edge at open catchment, W. E. Steiner and J. M. Swearingen (2–USNM).

**Records from literature. BAHAMAS: Andros Island:** Andros Town, Androsia, Fresh Creek, North Blanket Sound; **Great Inagua Island:** North Coast Road (Turnbow and Thomas 2008).

**Comments.** Adults of this species may be easily recognized by the small size, by the extensively impressed male frons and by the presence of a pair of acute mandibular processes.

***Chaetophloeus bahamaensis* Bright, sp. nov.**

Figures 29, 39.

**Type Material. HOLOTYPE** (male) labeled: “**BAHAMAS, Eleuthera**, Rainbow Bay, 9.VI-8.VII.1986, D. B. and R. W. Wiley” / “HOLOTYPE *Chaetophloeus bahamaensis* D. E. Bright 2016” (FSCA).

**Description (Male).** Length 2.2 mm, 2.0 times longer than wide; light reddish-brown, with abundant yellowish scales. Frons deeply concave above epistomal margin; surface shining, with very fine reticulation, clothed with abundant, long, yellowish setae. Mandible bearing an acute, spine-like process arising on inner cutting edge, apices of process extending above epistomal margin. Eyes very large, nearly contiguous on gular region, separated on vertex by distance equal to width of antennal club, facets very large. Epistomal margin deeply, broadly emarginate. Antennal club elongate-oval, 2.3 times longer than wide; sutures indistinct. Pronotum 1.5 times wider than long; sides broadly arcuate, feebly constricted just before broadly rounded anterior margin; surface moderately shining, minutely reticulate between close, small, moderately deep punctures; asperities on lateral portion of disc arranged in two groups, one asperity located one-quarter of distance from anterior to posterior margin, and a group of four at middle, these more erect than scales and very slightly shorter than adjacent scales; vestiture consisting of small, semirecumbent scales, these 3.0 times longer than wide. Elytra 1.3 times longer than wide; sides parallel, apex broadly rounded; anterior margin with eight pairs of marginal crenulations extending laterally to interstriae 4, one pair of submarginal crenulations at base of interstriae 1; discal striae moderately impressed, punctures small, impressed; discal interstriae 3.0 times wider than striae, each densely clothed with small, suberect scales, these much shorter than interstitial width. Declivity convex; interstriae as on disc except slightly narrower; vestiture as on disc.

**Female.** Unknown.

**Distribution.** This species is known from the Bahamas.

**Etymology.** This species is named for the Bahama Islands.

**Comments.** The male of this species is very similar to those of *C. mandibularis* Bright from Tobago but differ by the different structure on the mandibles. Other minute differences were noted, but these may not be significant. Only the holotypes of these two species are known and further collecting might show that the differences noted are not significant.

Males of this species may be easily distinguished from those of other species in the West Indies by the very large eyes that are nearly contiguous on the gular area, by the large, oval antennal club, by the presence of a large, acute spine on each mandible, by the very deeply concave frons and by other characters given in the above description. Females are unknown.

***Chaetophloeus chapini* (Blackman)**

Figures 30, 40.

*Renocis chapini* Blackman 1943a: 390.

*Chaetophloeus chapini*: Bright 1972: 34; Wood and Bright 1992: 271.

**Description (Female).** Length 1.5–1.6 mm, 1.9 times longer than wide. Frons flattened, broadly impressed above epistomal margin; surface shining, minutely reticulate, faintly punctured except for median portion of epistoma that is smooth and brightly shining; vestiture dense, consisting of yellowish setae and divided scales. Antennal club small, 1.5 times longer than wide, nearly equal in length to funicle. Pronotum 1.6 times wider than long, widest near base; sides strongly arcuate, slightly constricted just behind broadly rounded anterior margin; surface shining, densely punctured, punctures fine; asperities arranged on lateral portions of disc in two widely separated groups, each group consisting of two small asperities; vestiture dense, consisting of short, broad, bifurcate scales with longer, narrower scales along anterior margin and on basal portion of median line. Elytra 1.1 times longer than wide; sides parallel on anterior two-thirds, then broadly rounded behind; discal striae moderately impressed, more strongly so over declivity, punctures large, close; discal interstriae convex, as wide as striae, surface minutely punctate; vestiture dense, consisting of small, round, oppressed scales over interstitial surface and a median row of longer, erect scales on each interstriae. Declivity convex, unmodified except erect scales slightly longer than on disc.

**Male.** Frons moderately concave from epistoma to vertex, surface densely clothed with very short scales in central and upper portion and longer setae along lower portion and margin, a low, median carina present on lower portion extending from epistomal margin to halfway to vertex; otherwise resembles female.

**Distribution.** This species is known from Jamaica.

**Specimens examined. JAMAICA:** Trelawny Parish, Barbecue Bottom, VIII.13.1966, H. F. Howden (1–CNCD); Saint Ann Parish, Ocho Rios, 2 February 1937, E. A. Chapin and R. E. Blackwelder (2–USNM); Manchester Parish, Mandeville, 23.VIII.1969, J. H. Frank, blacklight trap (1–FSCA).

**Comments.** Females of this species may be recognized by the flattened, slightly impressed female frons, by the small antennal club that is as long as the funicle. A male specimen, almost certainly of this species, resembles the female, but differs by the more deeply concave frons which bears a low, median carina on the lower portion and is densely pubescent with small scales in the central portion and longer setae on the lower periphery.

The holotype in the USNM was examined and compared to the specimen from Trelawny Parish.

### ***Chaetophloeus cubensis* Bright**

Figures 31, 41, 431, 501.

*Chaetophloeus cubensis* Bright 1981a: 159; Wood and Bright 1992: 272.

**Description (Male).** Length 2.2 mm, 1.8 times longer than wide; reddish-brown, with abundant, erect, yellowish scales. Frons broadly flattened from epistoma to well above eyes and laterally from eye to eye; surface moderately shining, densely reticulate, with abundant, very fine, short setae; setae on periphery of flattened area very long, yellowish, those on lateral margin erect, slightly curved, those arising on vertex curled downward and reaching epistoma. Epistomal margin deeply emarginate. Antennal club elongate-oval, 1.8 times longer than wide; two moderately arcuate sutures on proximal half. Pronotum 1.5 times wider than long; sides broadly arcuate, weakly constricted just before broadly rounded anterior margin; surface dull, densely minutely reticulate with very small, fine, obscure punctures, anterior or lateral margins of these very weakly elevated, smooth and shining; asperities on lateral portion of disc arranged in three widely separated groups, one group of two just behind lateral margin, a group of three slightly anterior to middle and a group of four slightly posterior to middle, these more erect than adjacent scales; vestiture consisting of scattered, erect, spatulate scales. Elytra 1.3 times longer than wide; sides weakly arcuate, apex broadly rounded; anterior margin with eight pairs of crenulations extending laterally to interstriae 4, one pair of submarginal crenulations at base of interstriae 1; discal striae not impressed on anterior third, slightly to moderately impressed posteriorly, punctures large, distinctly impressed; discal interstriae 1.5–2.0 times wider than striae, weakly convex, each moderately clothed with very short, broad scales and a median row of slightly longer, more erect, spatulate scales, these

slightly shorter than those on *C. howdeni*. Declivity convex; surface as on disc except striae narrower and deeper, interstitial scales shorter and broader.

**Female.** Similar in size and proportions to male. Frons convex, very weakly impressed just above epistoma; surface dull, densely minutely reticulate with scattered minute granules and abundant, short, narrowly flattened, scalelike setae.

**Distribution.** This species is known from Cuba and the Dominican Republic.

**Specimens examined. CUBA:** Mapos, Las Villas, a la luz (1–CNCI). **DOMINICAN REPUBLIC:** Province Barahona, 18 km Cabral, Polo Rd., 1.5 km SE Montear Nuevo, 26 July 1999, 1020m / M. A. Ivie and K. A. Guerrero (1–WIBF); La Vega, 10 km NE Jarabacoa, mercury vapor and blacklight, 4 June 1994, R. Turnbow (1–RHTC); Province Barahona, nr. Filipinas, Larimar Mine, 26.VI-7.VII.1992, R. Woodruff and P. Skelley, at light (3–RHTC); Pedernales, 26 km N Cabo Rojo, 730 m, 16 July 1992 / C. Young, R. Davidson, J. Rawlins, mesic deciduous forest with scattered pines (1–FMNH); Barahona, 4 km NE Polo, 1260 m, J. Rawlins (1–FMNH).

**Comments.** This species is very similar to *C. howdeni* but differs by the less deeply concave male frons, by the shorter interstitial setae on the elytral disc and by the very slightly larger size.

### *Chaetophloeus howdeni* Bright

Figures 32, 42, 383.

*Chaetophloeus howdeni* Bright 1972: 36; Wood and Bright 1992: 272.

**Description (Female).** Length 2.0 mm, 1.9 times longer than wide; dark reddish-brown with light scales and setae. Frons weakly convex, arcuately impressed in median portion above epistoma; surface dull, minutely reticulate, faintly punctured, evenly granulate except for a smooth, arcuate impression; vestiture dense, consisting of nearly recumbent plumose setae and erect scales, these becoming broader towards vertex, setae hairlike and longer on epistomal margin. Antennal club large, broadly oval, 1.2 times longer than wide, 1.7 times longer than funicle. Pronotum 1.7 times longer than wide, widest near base; sides strongly arcuate, slightly constricted just behind broadly rounded anterior margin; surface dull, minutely reticulate, densely punctured, punctures fine; asperities on lateral portion of disc arranged in three widely separated groups, each group consisting of three to six erect asperities; vestiture dense, consisting of narrow setae and broad scales intermixed over surface and longer, spatulate scales located on anterior margin and on basal portion of median line. Elytra 1.3 times longer than wide; sides parallel on basal two-thirds, then broadly rounded behind; discal striae impressed, more strongly so over declivity, punctures large, close; discal interstriae convex, 2.0 times wider than striae, surface dull, minutely reticulate; vestiture dense, consisting of narrow, semierect scales over surface and longer, erect, spatulate scales in median row on each interstriae. Declivity convex, unmodified.

**Male.** Similar to female in size and proportions. Frons strongly flattened from epistoma to upper level of eyes, slightly concave in median portion; surface dull, minutely reticulate, finely punctured; vestiture consisting of short, yellowish setae over frontal surface, longer and incurved on periphery, setae originating on vertex reaching epistomal margin; antennal club narrower and longer, 2.0 times longer than funicle; elytral striae slightly deeper and setae slightly longer.

**Distribution.** This species is known from Jamaica.

**Specimens examined. JAMAICA:** Trelawny Parish, Barbecue Bottom, 10 August 1966, H. F. Howden (16–CNCI); Trelawny Parish, Barbecue Bottom, 12 August 1966, H. F. Howden (7–CNCI); Saint Ann Parish, Mt. Diablo, 20 August 1966, H. F. Howden (1–CNCI); Saint Thomas Parish, 14.5 miles east of Kingston, 22 May 1960, T. H. Farr (1–CNCI) and 3 to 4 miles north of Mandeville, 20 June 1958, M. W. Sanderson (2–CNCI).

**Comments.** Adults of this species are similar to those of *C. cubensis* but differ by the more slender body (1.9 times longer than wide) and by the length of 1.6–2.1 mm.

### *Chaetophloeus insularis* (Blackman)

Figures 33, 43.

*Renocis insularis* Blackman 1940: 400.



**Figures 28–37.** Declivities of *Chaetophloeus* spp. **28)** *C. atlanticus*. **29)** *C. bahamaensis*. **30)** *C. chapini*. **31)** *C. cubensis*. **32)** *C. howdeni*. **33)** *C. insularis*. **34)** *C. longisetum*. **35)** *C. minutus*. **36)** *C. montanus*. **37)** *C. woodruffi*.

*Chaetophloeus insularis*: Wood 1982: 359; Wood and Bright 1992: 273; Bright and Skidmore 2002: 39; Bright and Torres 2006: 394.

**Description (Female).** Length 1.3–1.5 mm, 1.9 times longer than wide. Frons broadly convex, surface shining, densely covered by erect, short, sub-plumose setae, those along epistomal margin densely placed and longer, covering at least half of mandible. Antennal club 1.3 times longer than wide, 1.7 times longer than funicle. Pronotum 1.6 times wider than long, widest near base; sides strongly arcuate, slightly constricted just behind broadly rounded anterior margin; surface shining, densely punctured; asperities arranged on lateral portions of disc in two widely separated groups, each group consisting of two to four small asperities, scales just behind asperities slightly longer than other surface scales; remaining vestiture consisting of short, broad, semierect scales, a row of longer scales on median portion of anterior margin and a clump of several longer scales on median area at base. Elytra 1.2–1.3 times longer than wide; sides parallel on anterior two-thirds, then broadly rounded behind; discal striae moderately impressed, slightly more strongly so over declivity, punctures large, close; discal interstriae flat, 3.0–4.0 times wider than striae, surface minutely punctate; vestiture dense, consisting of small, round, oppressed scales over interstitial surface and a median row of longer, erect scales on each interstriae. Declivity convex, unmodified except erect scales slightly longer than on disc.

**Male.** Frons deeply concave from eye to eye and from epistoma to upper level of eyes; surface densely pubescent, setae subplumose and slightly longer at upper level and on sides; epistoma emarginate; each mandible with a small, acute spine on cutting edge near base. Pronotum with asperities almost obsolete, position marked by slightly broader scales. Elytra as in female.

**Distribution.** This species is known from southern Florida and in the West Indies from the Bahamas, Cuba, Dominica, Puerto Rico and the Virgin Islands.

**Specimens examined.** **BAHAMAS: Great Inagua Island**, north coast road 13.VII.2007, Thomas, Turnbow and Smith / blacklight trap in mature mangrove forest (1–FSCA). **CUBA:** Cayamas, E. A. Schwarz (1–USNM). **DOMINICA:** Springfield Est., around building, 15.346337N, 61.368769W, 03–05 June 2011, at lights, L. L. & M. A. Ivie colrs. (1–WIBF). **PUERTO RICO:** Boquillo Sabana, Loquillo, 14.IV.1990, light trap (1–CNCI); Caribbean National Forest, El Verde Field Station, Hwy. 186, 29–V.1994, M. C. Thomas, blacklight trap (1–FSCA); Quebrada, Espiritu de Santo, mercury vapor and blacklight, 26 May 1994, R. Turnbow (1–RHTC).

**Records from literature.** **VIRGIN ISLANDS:** no further data (Wood and Bright 1992).

**Comments.** Adults of *C. insularis* may be distinguished by their smaller size, by the presence of two groups of asperities most noticeable on the female pronotum, by the concave male frons and by the large, broad antennal club.

The type material in the USNM was examined.

***Chaetophloeus longisetum* Bright, sp. nov.**

Figures 34, 44.

**Type Material.** **HOLOTYPE** (male) labeled: “**JAMAICA:** Manchester Par., Mandeville, 23.VIII.1969, J. H. Frank, blacklight trap” / “**HOLOTYPE** *Chaetophloeus longisetum* D. E. Bright 2016” (FSCA).

**Description (Male).** Length 2.0 mm, 2.0 times longer than wide; dark reddish-brown. Frons broadly, deeply concave from epistoma to well above eyes; surface moderately shining, minutely reticulate, mostly concealed by dense long setae arising on vertex and extending to epistomal margin, concavity with long setae which curve inward; epistoma broadly, deeply arcuate. Mandibles with a small spine on cutting edge mostly concealed by long setae fringing epistomal margin. Antennal club large, 1.8 times longer than funicle, 1.4 times longer than wide, with three sutures visible, suture 1 moderately procurved, 2 and 3 less procurved. Pronotum 1.6 times wider than long; sides broadly arcuate, widest on basal half, anterior margin broadly rounded; discal surface moderately shining, densely, minutely reticulate, with intermixed, densely placed, small, yellowish scales and smaller narrowly scalelike setae; asperities on lateral portion of disc arranged in three groups, posterior group consisting of three asperities shorter than adjacent scales, middle group consisting of three asperities as long as adjacent scales and anterior

group just behind anterior margin consisting of two asperities as long as adjacent scales; a group of eight longer, erect scales located on base. Elytra 1.3–1.4 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; basal margins with a row of eight erect crenulations, extending laterally to interstriae 4, submarginal crenulations absent, base of interstriae bearing a clump of eight longer, erect scales; elytral interstriae convex, each bearing a three-ranked row of small, broad scales, those in median row slightly longer. Declivity evenly convex, similar to elytra except scales longer, especially those in median row, and more erect.

**Female.** Unknown.

**Distribution.** This species is known from Jamaica.

**Etymology.** From *longus*, Latin for long, and *seta*, Latin for setae, referring to the long setae on the frons of the male.

**Comments.** The male of this species may be easily recognized by their large size, by the deeply concave frons with a dense brush of long setae arising on the vertex and extending over the frons to the epistomal margin and by the small spine on the cutting edge of the mandible, this spine mostly concealed by the long setae on the epistomal margin.

### ***Chaetophloeus mandibularis* Bright**

*Chaetophloeus mandibularis* Bright 1981a: 160; Wood and Bright 1992: 273.

**Description (Male).** Length 1.8 mm, 1.9 times longer than wide; reddish-brown with abundant light yellow scales. Frons deeply impressed, surface features concealed by enlarged mandibular processes, lateral margins near eyes with abundant, long, yellowish setae. Each mandible bearing a large, triangular process, this process 3.0 times longer than basal width, extending three-fifths the distance from epistoma to upper level of eyes and completely concealing surface of frons. Eyes very large, contiguous on gular region, separated on vertex by distance equal to width of antennal club, facets very large. Antennal club elongate-oval, 2.3 times longer than wide; sutures indistinct but at least two are marked by more regular rows of setae. Pronotum 1.8 times wider than long; sides broadly arcuate, weakly constricted just before broadly rounded anterior margin; surface minutely reticulate, densely clothed with small, recumbent scales, these 3.0 times longer than wide; asperities on lateral portion of disc arranged in three groups, one group of two just behind anterior margin, a group of two slightly anterior to middle and a group of three slightly posterior to middle, these more erect than adjacent scales, acute; a group of six longer, more erect scales located at midline on posterior margin. Elytra 1.4 times longer than wide; sides parallel, apex broadly rounded; anterior margin with seven pairs of large crenulations extending laterally to interstriae 4, one pair of submarginal crenulations at base of interstriae 1; discal striae not impressed, punctures large, shallow; discal interstriae 2.0 times wider than striae, each with three rows of scales, the middle row larger, more erect, at least 2.0 times longer than remainder, becoming broader toward declivity. Declivity convex, steep, surface similar as disc except median row of scales in each interstriae much longer and more erect, these scales 3.0–4.0 times longer than other scales on margin of interstriae.

**Female.** Unknown.

**Distribution.** This species is known from Tobago.

**Specimen examined.** TOBAGO, 9.VI.1959, mosquito trap (1-USNM).

**Comments.** The male of this species is unique in having extremely large eyes that are contiguous on the gular region of the head and separated on the vertex by a distance equal to the width of the antennal club, by the large facets of the eyes and by the remarkable mandibles. The females are unknown.

This species was omitted in Wood's 2007 monograph of the South American Scolytidae. Even though this species is known from Tobago, a region omitted in this monograph, I have included it here for the sake of completeness. It is not included in Appendix 2 nor in any count of the West Indian fauna.

The holotype in the USNM was examined.

***Chaetophloeus minutus* Bright, sp. nov.**

Figures 35, 45.

**Type Material.** **HOLOTYPE** (male) labeled: “**PUERTO RICO:** El Verde Research Sta., ridge tops in forest, 02–30 SEP 1996, E. Nazario, pitfall” / “**HOLOTYPE** *Chaetophloeus minutus* D. E. Bright 2016” (WIBF [CNCI]). **ALLOTYPE** labeled: “**PUERTO RICO:** Luquillio, Nat. For., El Verde R. S., ridge top in forest, 23 SEP 1996, E. Nazario, pitfall” / “**ALLOTYPE** *Chaetophloeus minutus* D. E. Bright 2016” (WIBF [CNCI]). **PARATYPES** (2): labeled “**GRENADA:** Saint Andrew, Mirabeau Agric. Lab., 26.I.1990, H. Harford, Light trap” (SBPC, CNCI).

**Description (Male).** Length 1.1–1.2 mm, 1.9 times longer than wide; light yellowish-brown. Frons broadly, deeply concave from epistoma to upper eye level; surface shining, densely covered by short, yellowish setae, those on periphery longer, incurved, those on vertex extending downward to halfway to epistoma; epistoma slightly emarginate to nearly straight; mandibles unmodified. Antennal club elongate-oval, 1.5 times longer than wide, 3.0 times longer than funicle, with two weakly arcuate sutures at base, another near apex. Pronotum 1.8 times wider than long; sides broadly arcuate, feebly constricted just before broadly rounded anterior margin; surface moderately shining, very minutely granulate-punctate; asperities on lateral portion of disc arranged in one group, each asperity very slightly longer than adjacent scales; vestiture very dense, consisting of very small, semirecumbent scales, these 2.0 times longer than wide. Elytra as long as wide; sides parallel, apex broadly rounded; anterior margin with eight pairs of very small marginal crenulations extending laterally to interstriae 5, submarginal crenulations absent; discal striae weakly impressed, punctures small, impressed; discal interstriae 2.0 times wider than striae, each densely clothed with small, suberect scales arranged in three rows on each interstriae. Declivity convex; interstriae as on disc except slightly narrower; vestiture as on disc.

**Female.** Length 1.15 mm, 1.9 times longer than wide. Frons convex, shining, covered with short, yellowish setae, all of equal length. Otherwise similar to male.

**Distribution.** This species is known from Puerto Rico and Grenada.

**Etymology.** From *minutus*, Latin for little, referring to the small size of the adults

**Comments.** Adults of this species may be easily distinguished by their very small size, usually slightly more than 1.0 mm in length. Additional characters are the group of three small asperities on the lateral portion of the pronotum and the concave male frons with the setae on the vertex extending downward halfway to epistoma.

The two paratypes from Grenada show some slight differences from the holotype, especially by their slightly larger size, by the straighter epistomal margin and by the less distinct group of asperities on the pronotum. In spite of the differences, they are tentatively considered conspecific.

***Chaetophloeus montanus* Bright, sp. nov.**

Figures 36, 46.

**Type Material.** **HOLOTYPE** (male) labeled: “**DOMINICAN REPUBLIC:** Pedernales, Sierra Bacruco, 4–5000', 19 May 1992, R. Turnbow” / “**HOLOTYPE** *Chaetophloeus montanus* D. E. Bright 2016” (RHTC [FSCA]). **ALLOTYPE** labeled: “**DOMINICAN REPUBLIC:** Pedernales, Sierra de Baoruco, Aceitillar, 25.2 km ENE Pedernales, 18.05.29N, 71.31.16W, 1272 m, 14 June 2003” / “C. Young, R. Davidson: Acevedo, M. de la Cruz, dense broadleaf forest, pine, uv light, sample 42212” / “**ALLOTYPE** *Chaetophloeus montanus* D. E. Bright 2016” (CMNH).

**Description (Male).** Length 2.1 mm, 2.0 times longer than wide; black, with abundant light brown and light yellowish scales. Frons very weakly impressed, almost flat from epistomal margin to just above eyes and laterally from eye to eye; surface moderately shining, with very small, scattered granules and fine



**Figures 38–47.** Frons of *Chaetophloeus* spp. 38) *C. atlanticus*. 39) *C. bahamaensis*. 40) *C. chapini*. 41) *C. cubensis*. 42) *C. howdeni*. 43) *C. insularis*. 44) *C. longisetum*. 45) *C. minutus*. 46) *C. montanus*. 47) *C. woodruffi*.

reticulation between granules, with abundant, long, flattened, yellowish setae around periphery, those on vertex not extending to middle of frons. Mandible with cutting edge nearly straight, upper margin arcuate and slightly extending upward. Eyes elongate-oval, nearly contiguous on gular region, separated on vertex by distance equal to slightly less than twice width of antennal club. Epistomal margin deeply, broadly emarginate. Antennal club elongate-oval, 1.8 times longer than wide; sutures indistinct, first two arcuate. Pronotum 1.5 times wider than long; sides broadly arcuate, feebly constricted just before broadly rounded anterior margin; surface moderately shining, with close, small, moderately deep punctures; asperities on lateral portion of disc arranged in three widely separated groups, one group of two located just behind anterior margin, a group of three located one-quarter of distance from anterior to posterior margin, and a group of four at middle, these more erect than scales and very slightly shorter than adjacent scales; vestiture consisting of small, semirecumbent, dark and light brown scales, these 2.0 times longer than wide. Elytra 1.3 times longer than wide; sides parallel, apex broadly rounded; anterior margin with eight pairs of marginal crenulations extending laterally to interstriae 4, one pair of submarginal crenulations at base of interstriae 1; discal striae moderately impressed, punctures small, impressed; discal interstriae 2.0–3.0 times wider than striae, each densely clothed with small, suberect, white to light brown scales. Declivity convex; interstriae as on disc except slightly narrower; vestiture as on disc.

**Female.** Length 2.2 mm, 2.0 times longer than wide; light brown with abundant light yellow scales. Frons convex; surface minutely reticulate with numerous, very small, shining tubercles and densely covered with short, light brown setae. Pronotum and elytra as in male.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** From *montanus*, Latin for of mountains, referring to the habitat of the species.

**Comments.** Adults of this species may be recognized by the presence of three groups of asperities on the pronotal disc, by the very weakly impressed male frons with short setae on the vertex, by the stout mandibles with straight cutting edge of the male and by the size as given in the above description.

This species evidently occurs at high elevations in the Dominican Republic.

***Chaetophloeus woodruffi* Bright, sp. nov.**

Figures 37, 47.

**Type Material.** **HOLOTYPE** (male) labeled: “**DOMINICAN REPUBLIC:** Province Pedernales, km. 19, N. Cabo Rojo, 12.VI.1998, R. E. Woodruff: H. Freytag, blacklight trap, 1000 ft.” / “**HOLOTYPE** *Chaetophloeus woodruffi* D. E. Bright 2016” (REWC [FSCA]). **ALLOTYPE** labeled: “**DOMINICAN REPUBLIC:** Province Pedernales, km 19, N. Cabo Rojo, 11.VI.1998, 3000 ft., blacklight trap, R. E. Woodruff: H. Freytag” / “**ALLOTYPE** *Chaetophloeus woodruffi* D. E. Bright 2016” (REWC [FSCA]).

**Description (Male).** Length 2.0 mm, 2.2 times longer than wide; dark reddish-black, with abundant yellowish scales and setae. Frons deeply concave above epistomal margin; surface shining, with very fine reticulation, clothed with short, yellowish setae, setae much longer along lateral margin bordering eyes. Mandible bearing an acute process arising on inner cutting edge, apices of process extending to epistomal margin. Eyes very large, nearly contiguous on gular region, separated on vertex by distance equal to width of antennal club, facets very large. Epistomal margin deeply, broadly procurved, bordered by longer, yellowish setae. Antennal club elongate-oval, 1.8 times longer than wide; sutures indistinct. Pronotum 1.6 times wider than long; sides broadly arcuate, feebly constricted just before broadly rounded anterior margin; lateral portion of anterior margin bearing a group of two small asperities; surface moderately shining, minutely reticulate, with very small, shining granules; asperities on lateral portion of disc arranged in two groups, one group at one-third distance from anterior to posterior margin, another group at two-thirds distance; vestiture consisting of small, semirecumbent scales, these 3.0 times longer than wide. Elytra 1.3–1.4 times longer than wide; sides parallel, apex broadly rounded; anterior margin with six pairs of marginal crenulations extending laterally to interstriae 4, one pair of submarginal crenulations at base of interstriae 1; discal striae weakly impressed, punctures large, impressed; discal

interstriae 1.0–1.5 times wider than striae, each with two irregular rows of erect, narrow scales, these equal in length to interstitial width. Declivity convex; interstriae as on disc except scales longer.

**Female.** Similar in size and proportions to male. Frons convex on upper half, transversely impressed above epistoma; vestiture consisting of short, abundant scales on convex portion, more narrow scales below. Mandibles without acute process. Antennae and pronotum as in male. Elytra and declivity as in male except interstitial scales longer.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** This species is named for R. E. Woodruff, one of the collectors of the holotype and a major collector of beetles in the West Indies.

**Comments.** Adults of this species may be recognized by the presence of a small spine on the male mandible which does not extend beyond the epistomal margin, by the elytral scales which are longer than the interstitial width and by the narrow antennal club.

### Genus *Liparthrum* Wollaston

*Liparthrum* Wollaston, 1854: 294; Wood and Bright 1992: 274; Bright and Skidmore 2002: 381 (checklist); Bright 2014: 68.

Members of *Liparthrum* may be distinguished by the 3-segmented antennal funicle (pedicel excluded), by the unsegmented antennal club, by the uniseriate rows of broad scales in the elytral interstriae with slender setae in the striae and by the very small size of the adults. In addition, the basal margin of the elytra bears five or six pairs of coarse crenulations, the declivity is convex and unarmed and the procoxae are contiguous.

Species in this genus are monogamous and phloeophagous and construct galleries under the bark of dying limbs and branches of various species of trees.

Ten species have been described from North and Central America and two from South America (Wood 2007). Three additional species are known in the West Indies.

### Key to the species of *Liparthrum* in the West Indies

1. Antennal club of female with four conspicuous, flattened setae, two at base and two at apex; declivital striae narrow, not impressed, punctures obscure; length 1.2 mm; Dominican Republic ..... *L. hispaniolum* Bright (p. 66)
- Antennal club of female without conspicuous or modified setae, with clumps of small setae at lateral margins of sutures; declivital striae wider, impressed, punctures distinct ..... **2**
- 2(1). Length 1.4 mm, 2.2 times longer than wide; female frons weakly concave; strial punctures on declivity large, more distinct; Bahamas ..... *L. turnbowi* Bright, sp. nov. (p. 67)
- Length 1.1–1.3 mm, 2.0 times longer than wide; female frons flattened; strial punctures on declivity smaller, more obscure; Cayman Islands ..... *L. caymanensis* Bright, sp. nov. (p. 65)

### *Liparthrum caymanensis* Bright, sp. nov.

Figures 384, 432, 502.

**Type Material.** HOLOTYPE (female) labeled: “CAYMAN ISLANDS: Grand Cayman, Queen Elizabeth Botanical Garden, 28.V.2009, Thomas, Turnbow and Ball, blacklight trap” / “HOLOTYPE *Liparthrum caymanensis* D. E. Bright 2016” (FSCA). ALLOTYPE labeled with same data as holotype plus my allotype label (FSCA). PARATYPES (3): 2 labeled with same data as holotype (FSCA, CNCI); 1 labeled:

“CAYMAN ISLANDS: *Little Cayman*, North Coast Rd., .1 km W Olivine Kirk Dr., 26.V.2009, Col.: Thomas, Turnbow and Ball, blacklight trap” (CNCI).

**Description (Female).** Length 1.1–1.3 mm, 2.0 times longer than wide; light to dark reddish-brown, with conspicuous, abundant, light yellow setae and scales. Frons flattened from epistoma to above upper eye level and nearly from eye to eye; surface shallowly punctured, punctures close except on narrow area above epistoma, surface between punctures minutely reticulate except on smooth and shining epistoma; vestiture inconspicuous, consisting of short, fine, hairlike setae scattered over surface, setae longer on upper margin of flattened area. Antennal club oval, 1.4 times longer than wide; sutures obscure, with small clumps of short setae at lateral margins. Pronotum 1.1 times wider than long; sides broadly arcuate, apex broadly rounded; surface densely, weakly punctured and weakly granulate; vestiture consisting of abundant, recumbent, hairlike setae over surface, intermixed with scattered, erect, flattened, short scales, each scale 1.5–2.0 times longer than wide. Elytra 1.3 times longer than wide; apex broadly rounded; anterior margin arcuate, with five pairs of large crenulations extending laterally to interstriae 4; discal striae weakly impressed, punctured in an even row, punctures of moderate size, shallow; discal interstriae as wide as striae, interstriae 2 similar in width to others; surface of all interstriae weakly granulate; vestiture conspicuous, consisting of a median row of flattened, stout scales in each interstriae, these scales 1.5 times longer than wide, with truncate tips and a row of recumbent, hairlike scales on lateral margins of each interstriae. Declivity steep, convex, unmodified except striae punctures less distinct than those on disc and interstitial granules very slightly larger than those on disc.

**Male.** Frons weakly convex, surface dull, reticulate, vestiture inconspicuous. Antennal club as on female. Pronotum and elytra as in female except declivital interstitial scales shorter and broader and interstitial granules somewhat larger, especially on declivity.

**Distribution.** This species is known from the Cayman Islands.

**Etymology.** This species is named for the geographic location of the type series.

**Comments.** Adults of this species are similar to those of *L. turnbowi* but differ by their smaller size and by the more obscure punctures on the elytral declivity.

### *Liparthrum hispaniolum* Bright

Figure 48.

*Liparthrum hispaniolum* Bright 1981a: 161; Wood and Bright 1992: 277.

**Description (Female).** Length 1.2 mm, 2.4–2.5 times longer than wide; light to dark reddish-brown, with conspicuous, abundant light yellow setae and scales. Frons broadly, shallowly impressed, impression extending nearly from eye to eye; surface shallowly punctured, punctures close except on narrow area above epistoma, surface between punctures minutely reticulate except on smooth and shining epistoma; vestiture inconspicuous, consisting of short, fine, hairlike setae scattered over surface, setae longer on epistomal margin. Antennal club oval, 1.7 times longer than wide; sutures obscure; anterior face of club with four conspicuous, flattened setae, two at base and two at apex, these setae much longer than other setae, flattened at apex. Pronotum 1.1 times longer than wide; sides broadly arcuate, apex broadly rounded; surface densely, weakly punctured and weakly granulate; vestiture consisting of abundant, recumbent, hairlike setae over surface, intermixed with scattered, erect, flattened, short scales, each scale 1.5–2.0 times longer than wide. Elytra 1.2 times longer than wide; apex broadly rounded; anterior margin arcuate, with six pairs of large crenulations extending laterally to interstriae 4; discal striae weakly impressed, punctured in an even row, punctures of moderate size, shallow; discal interstriae slightly wider than striae, except interstriae 2 is 2.0 times wider than striae; surface of all interstriae weakly granulate; vestiture conspicuous, consisting of a median row of flattened, stout scales in each interstriae, these scales 1.5–2.0 times longer than wide and a row of recumbent, hairlike scales on lateral margins of each interstriae. Declivity steep, convex, unmodified except striae punctures obscure and interstitial granules very slightly larger than those on disc.

**Male.** Frons weakly convex, surface dull, reticulate, vestiture inconspicuous. Antennal club lacking conspicuous, flattened setae. Pronotum as in female except anterior margin bearing several small, acute asperities and surface bearing a few small, scattered asperities. Elytra as in female except interstitial scales shorter and broader and interstitial granules somewhat larger, especially in declivity.

**Distribution.** This species is known from the Dominican Republic.

**Specimens examined. DOMINICAN REPUBLIC:** San Cristobal, 35 m, 6.12.1971, J. and S. Klapperich (5-NHMB, CNCI).

**Comments.** Adults of this species may be easily distinguished by the broadly, shallowly impressed female frons, by the modifications of the female antennal club as described above and by the chunky body shape.

***Liparthrum turnbowi* Bright, sp. nov.**

Figure 49.

**Type Material. HOLOTYPE** (female) labeled: “BAHAMAS: Andros, Forfar Field Station, mercury vapor and blacklight, 4 June 2001, R. Turnbow” / “HOLOTYPE *Liparthrum turnbowi* D. E. Bright 2016” (RHTC [FSCA]).

**Description (Female).** Length 1.4 mm, 2.2 times longer than wide; very dark reddish-brown, with conspicuous, abundant light-yellow setae and scales. Frons broadly, shallowly impressed, impression extending nearly from eye to eye and to above upper eye level; surface very shallowly, obscurely punctured, surface between punctures weakly shining; vestiture consisting of abundant, long setae along upper and lateral margin of concave area and along lateral portion of epistoma and much shorter, hair-like setae scattered over surface. Antennal club narrowly oval, 1.7 times longer than wide; sutures obscure; anterior face of club without longer, specially modified setae. Pronotum 1.2 times longer than wide; sides weakly arcuate, apex broadly rounded; surface densely, weakly granulate; vestiture consisting of abundant, recumbent, hairlike setae over surface, intermixed with scattered, erect, flattened, short scales, each scale 1.5–2.0 times longer than wide. Elytra 1.3–1.4 times longer than wide; apex broadly rounded; anterior margin arcuate, with six pairs of large crenulations extending laterally to interstriae 4; discal striae weakly impressed, punctured in an even row, punctures of moderate size, shallow; discal interstriae half as wide as striae; surface of all interstriae weakly granulate; vestiture conspicuous, consisting of a median row of flattened, stout scales in each interstriae, these scales 1.0–1.5 times longer than wide with a truncate tip and a row of recumbent, hairlike scales on lateral margins of each interstriae. Declivity steep, convex, unmodified except striae punctures obscure and interstitial granules very slightly larger.

**Male.** Unknown.

**Distribution.** This species is known from Andros Island in the Bahamas.

**Etymology.** This species is named for Robert Turnbow, the collector of the holotype who is also a major collector of West Indian beetles.

**Comments.** Females of this species may be recognized by the weakly concave, weakly punctured female frons with abundant vestiture consisting of long setae on upper and lateral margins of the concave area and along epistomal margin. In addition, the striae punctures on the declivity are weakly impressed and the interstitial granules are slightly larger than those on the disc. The male is unknown.

**Genus *Trypanophellos* Bright, Resurrected Name**

*Trypanophellos* Bright 1982: 166; Wood 1992: 81 (= *Liparthrum* Wollaston); Wood and Bright 1992: 274 (as synonym of *Liparthrum*); Bright 2014: 70.

Members of *Trypanophellos* may be distinguished from those in other genera in the Hypoborini by the 4-segmented antennal funicle (pedicel excluded), by the oval antennal club that is without sutures and by the pronotal asperities which are much smaller than associated scales and not arranged in clusters or groups. In addition, the procoxae are narrowly separated, the antennal scape is club-shaped, with a few long setae on surface, the pronotum is wider than long and densely micro-reticulate over the entire surface, the vestiture on the pronotum consists of numerous, semierect, very broad scales and much narrower, nearly recumbent scales, the elytral has prominent basal crenulations, the submarginal crenulations are absent and the declivity is evenly convex with finely granulate interstriae.

Wood (1992) placed this generic name in synonymy under *Liparthrum* stating that he was unable to see any generic characters that could possibly distinguish *Trypanophellos* from *Liparthrum*. He did not comment on any of the characters I used to distinguish *Trypanophellos* from other genera in the Hypoborini and inexplicably he did not include *Trypanophellos* in his treatment of the genera (Wood 1986a) of the Hypoborini, even though the genus was established four years previously.

All *Liparthrum* species have a 3-segmented antennal funicle (pedicel excluded), an unsegmented antennal club, and the pronotal asperities are arranged in clusters. To include *Trypanophellos* in *Liparthrum* would result in a polyphyletic assemblage of species and would broaden the concept of *Liparthrum* into an unworkable taxon. In addition to the characters mentioned above, *Trypanophellos* differs by the densely, evenly micro-reticulate surface of the pronotum, without prominent asperities. The other genera in the Hypoborini have prominent pronotal asperities, these either scattered in the median area, or clustered in two or three groups on lateral areas, or arranged into two, somewhat regular rows at the mid-line. In addition, *Trypanophellos* and *Chaetophloeus* are the only New World genera in the Hypoborini with a 4-segmented antennal funicle (pedicel excluded).

Recently, a second species of Hypoborini was discovered in material collected on Navassa Island in the West Indies that displays the generic characters of *Trypanophellos* as described above and provides support for the reinstatement of *Trypanophellos* as a distinct genus.

#### Key to the species of *Trypanophellos* in the West Indies

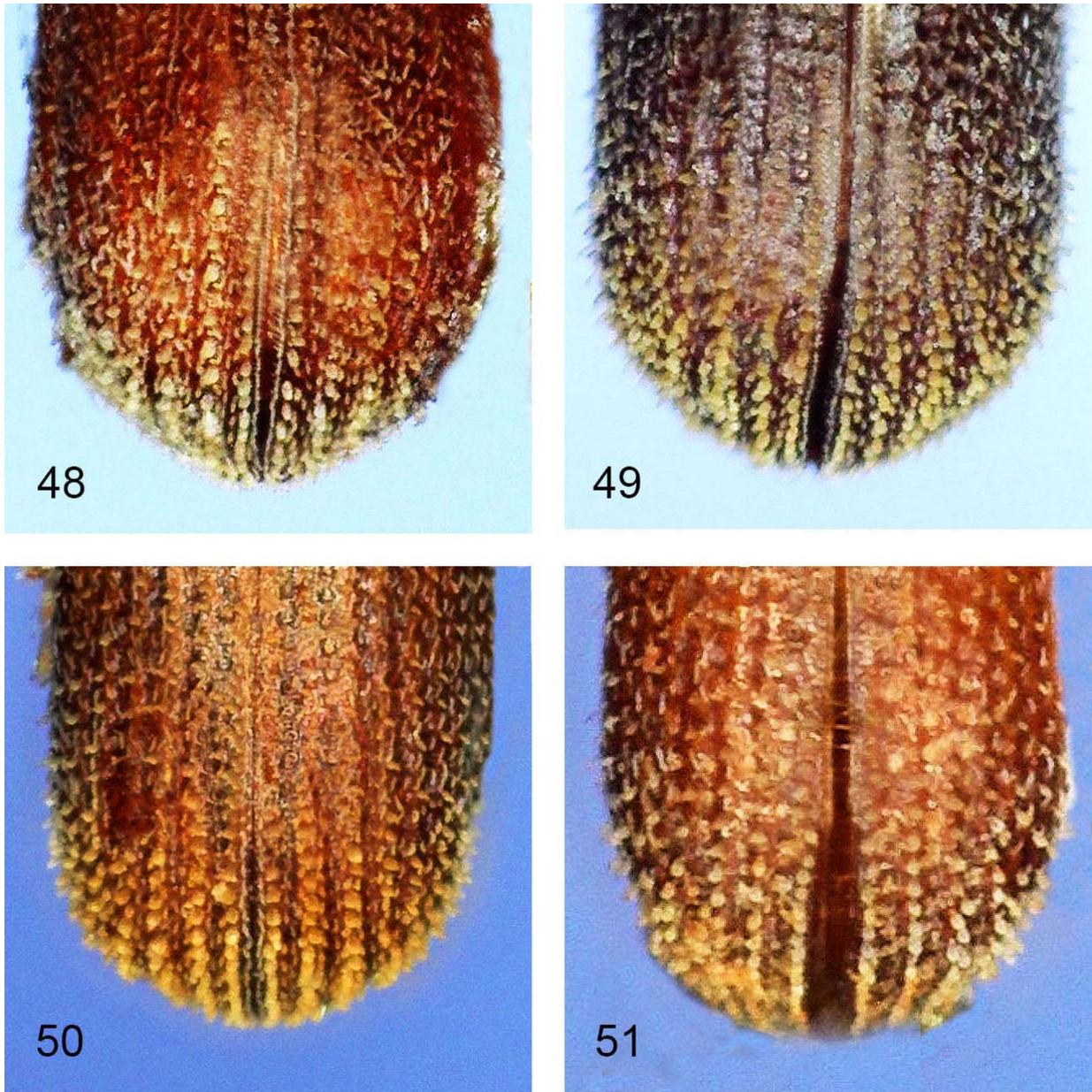
1. Length 1.1–1.2 mm, 2.0 times longer than wide; erect elytral scales as long as interstitial width, very stout, as long as wide; female frons moderately shining ..... *T. neocopinus* Bright (p. 70)
- Length 0.8–0.9 mm, 2.3 times longer than wide; erect elytral scales shorter than interstitial width, more slender, 2.0 times longer than wide; female frons dull ..... *T. minutum* Bright, sp. nov. (p. 68)

#### *Trypanophellos minutum* Bright, sp. nov.

Figures 51, 385.

**Type Material.** HOLOTYPE (female) labeled: “NAVASSA ISLAND, near lighthouse, 80 m, 18°23.82’N, 75°00.74’W, 24 July–4 Aug. 1998, Collrs. W. E. Steiner, J. M. Swearingen, et al.” / “Flight-intercept/yellow pan in Malaise Trap, edge of open weedy scrub and mixed forest (*Ficus*, *Metopium*, *Thrinax*) on limestone” / “HOLOTYPE *Trypanophellos minutum* D. E. Bright 2016” (USNM). PARATYPES (4): 1 labeled with same data as holotype (USNM); 2 labeled with same data as holotype except collected in “central forest area, 70 m” (CNCI, USNM) and 1 labeled with same data as holotype except collected “bluff of southwest rim, 65 m” (CNCI).

**Description (Female).** Length 0.8–0.9 mm, 2.3 times longer than wide; reddish-brown, with light brown to yellowish scales and setae. Frons weakly convex from epistomal margin to upper eye level; surface finely, minutely reticulate, dull, with scattered, fine setae, these longer along epistomal margin. Antennal club 2.0 times longer than wide, sutures obsolete, marked by tufts of fine setae at lateral margins. Pronotum 1.1 times wider than long, widest at middle; sides weakly arcuate; anterior margin broadly rounded, unarmed; discal surface with numerous, very small granules or asperities scattered in no apparent order, surface between granules minutely reticulate, dull and with numerous, recumbent, yellowish setae and erect, broad, flattened scales, these 2.0 times longer than wide. Elytra 1.4–1.5 times longer



**Figures 48–51.** Declivities of *Liparthrum* and *Trypanophellos* spp. **48)** *L. hispaniolum*. **49)** *L. turnbowi*. **50)** *T. neocopinus*. **51)** *T. minutum*.

than wide; sides parallel on basal three-fourths, apex broadly rounded; striae slightly impressed, punctured in regular rows, punctures large, deeply impressed; interstriae shining, narrower than striae, with very small, fine granules; vestiture consisting of a row of erect, narrow scales in each interstriae, these scales 2.0 times longer than wide and numerous, very fine strial setae. Declivity convex; interstriae as on disc except granules, scales and setae slightly more prominent.

**Male.** Not recognized in the material examined.

**Distribution.** This species is known from Navassa Island.

**Etymology.** From *minutus*, Latin for small, referring to the small size of the adults.

**Comments.** Females of this species are very similar to those of *T. neocopinus* but differ by their smaller size and by the more slender elytral and pronotal scales. The male is unknown.

***Trypanophellos neocopinus* Bright**

Figures 50, 433, 503.

*Trypanophellos neocopinus* Bright 1982: 166.

*Liparthrum neocopinus*: Wood and Bright 1992: 279.

**Description (Female?).** Length 1.2 mm, 2.2 times longer than wide. Frons generally flattened from epistoma to near upper eye level, weakly impressed in median area just above epistoma; surface moderately shining, densely, finely punctate-rugose, smooth in small median area above epistomal margin, with inconspicuous, fine, recumbent setae. Antennal club oval, 1.6 times longer than wide, sutures not detectible. Pronotum 1.2 times wider than long, widest behind middle; sides broadly, weakly arcuate on posterior two-thirds, strongly converging to broadly rounded, unarmed anterior margin; surface densely micro reticulate, asperities much smaller than adjacent scales; surface between asperities shining, smooth or minutely reticulate; vestiture consisting of numerous, semierect, very broad scales in which width at apex equal to or slightly less than their own length, and nearly recumbent, much narrower, more numerous scales. Elytra 1.3 times longer than wide; apex broadly rounded; basal crenulations prominent, decreasing in height from suture to interstriae 5, submarginal crenulations absent; stria punctures in regular rows, very large, shallowly impressed, nearly touching; interstriae narrower than striae, with scattered small granules and a median row of erect, very broad scales, each of these as long as wide and narrow scales similar to those in striae along lateral margins of each interstriae. Declivity evenly convex; surface as on disc except striae shallowly impressed, granules in interstriae slightly larger and interstitial scales shorter and more closely placed in a vague double row.

**Male.** Frons moderately concave on a circular area extending from epistomal margin to upper eye level and laterally from eye to eye; surface with fringe of long setae on periphery, setae half as long as distance from vertex of concavity to epistomal margin, surface of concavity with scattered, shorter setae. Otherwise resembles female.

**Distribution.** This species is known from Cuba and the Cayman Islands.

**Specimens examined.** CAYMAN ISLANDS: **Grand Cayman**, 3 km W. of Colliers, 21 February 1993, at blacklight in cut-over forest near ponds, W. E. Steiner and J. M. Swearingen (5-USNM, CNCI). CUBA: Cayamas (1-USNM).

**Comments.** Adults of this species resemble those of *T. minutus* and may be recognized by the larger size, by the erect, stout elytral scales and by the moderately shining female frons.

## SUBFAMILY MICRACIDINAE

Members of this subfamily may be recognized by the 4- or 5-segmented antennal funicle (pedicel excluded), by the separated front coxae, by the protibia without denticles or serrations on the outer margin and either slightly expanded on the distal half or with the margins straight and parallel and by the scaly vestiture.

Six genera in one tribe occur in the West Indies.

## KEY TO THE GENERA OF WEST INDIAN MICRACIDINAE

1. Antennal funicle 4-segmented (pedicel excluded); antennal club solid, suture 1 strongly arcuate, often with a narrow, longitudinal smooth space; body very small and slender, 0.8–0.90 mm in length, 2.9–3.1 times longer than wide (Fig. 439, 509) ..... ***Stevewoodia* Bright** (p. 100)
- Antennal funicle 5-segmented (pedicel excluded); antennal club with or without sutures; body usually larger than 1.0 mm ..... **2**

- 2(1). Elytra broadly rounded at apex ..... **3**  
 — Elytra acuminate at apex, usually mucronate ..... **4**
- 3(2). Pronotum wider than long, summit distinctly elevated; protibia slender (Fig. 438) .....  
 ..... ***Pseudothysanoes Blackman*** (p. 83)  
 — Pronotum longer than wide, summit not distinctly elevated; protibia broadly flattened .....  
 ..... ***Thysanoes LeConte*** (see Appendix 1)
- 4(2). Antennal club without sutures or sutures visible only at apex; protibia expanded, inflated on  
 distal portion, basal portion narrower than apical portion (Fig. 368, 437, 507) .....  
 ..... ***Parathysanoes Bright, genus nov.*** (p. 82)  
 — Antennal club with distinct, arcuate or transverse sutures; protibia more nearly rectangular;  
 with sides parallel and distal portion as wide as base ..... **5**
- 5(4). Sutures on antennal club broadly procurved, suture 1 appearing bisinuate, extending less than  
 one-third length of club; scape club-shaped, with few setae; eye oval, small (Fig. 386); protibia  
 with a few supplemental tubercles on posterior face ..... ***Hylocurus Eichhoff*** (p. 71)  
 — Sutures on antennal club very strongly, narrowly procurved, suture 1 usually reaching middle of  
 club; scape subtriangular, with numerous long setae (Fig. 387, 388); eye large, elongate; protibia  
 devoid of tubercles on posterior face ..... **6**
- 6(5). Eyes separated ventrally, margins entire; protibia with all five teeth on distal margin, mucro  
 broad (Fig. 367, 435, 505) ..... ***Micracis LeConte*** (p. 80)  
 — Eyes nearly contiguous ventrally, margins emarginate opposite antennal insertion; protibia with  
 at least one of the five teeth on outer margin, mucro slender (Fig. 436, 506) .....  
 ..... ***Micracisella Blackman*** (p. 81)

## TRIBE MICRACIDINI

### Genus *Hylocurus* Eichhoff

*Hylocurus* Eichhoff 1872: 133; Wood and Bright 1992: 422; Bright and Skidmore 2002: 361 (checklist);  
 Bright 2014: 111.

Adults of species in *Hylocurus* are similar to those of *Micracis* but may be distinguished by the bisinuate to broadly procurved sutures on the antennal club, by the club-shaped scape with a few setae, by the oval, small eye and by the slender, somewhat inflated protibia which is expanded distally and bears a few supplemental tubercles or rugae on the posterior face.

Species in this genus are distributed from the United States to Argentina. Bright and Skidmore (2002) list 75 species. Eight species are included herein from the West Indies.

Adults of *Hylocurus* species are usually found under the bark of injured, broken, dead or dying small branches and limbs of various broadleaved trees and shrubs. Evidently, they are of no economic importance.

Eichhoff (1878b) described *H. alienus* from a single specimen from Cuba. The holotype-bearing pin is now in the Schedl collection in the NHMW but when examined in 1991 nothing remained of the holotype except the abdominal sternites. Based on the Eichhoff description, it is presumed that the specimen he described was a female, e.g. “elytra apice convexe rotundato”. Since the males of *Hylocurus* species usually display the most significant diagnostic characters, this presumed female specimen could not be associated with the male of any known species. The additional characters given in the original description are not sufficient to distinguish the species

The following treatment is hampered by insufficient material and consequently the key and descriptions are usually limited to males. Females, when mentioned, usually are associated with males based

mainly on similar or identical localities. In several instances, females are sufficiently distinct to warrant description and naming.

Length used below includes the terminal mucro at the elytral apex.

### Key to the species of *Hylocurus* in the West Indies

1. Interstriae 9 of male ending in an acute projection or spine-like process at lateral margin of declivity, with a broad, deep notch between this process and costal margin of elytra or row of tubercles in interstriae 9 ending before costal margin (Fig. 56); female declivity evenly convex, with interstriae 9 similar to above except spine and notch smaller and less conspicuous ..... **2**
- Interstriae 9 of male joining costal margin, without an acute projection or spine or interstriae 9 ending in a broad, blunt, slightly elevated projection (Fig. 53); female declivity variable ..... **7**
- 2(1). Elytral declivity of male evenly convex, without an elevated circumdeclivital margin ..... **3**
- Elytral declivity of male very steep, with a distinct circumdeclivital margin of rounded projections ..... **4**
- 3(2). Declivital interstriae 1 bearing a sharp tubercle slightly above middle of declivity, this tubercle as long as interstitial width; declivital interstriae 3 bearing a median row of eight small tubercles ending in a larger tubercle located halfway between base and apex; remaining interstriae each bearing a row of small, rounded tubercles; posterior face of protibia inflated and expanded on distal one-third, with small granules arranged in rugae; length 1.9 mm; Puerto Rico ..... ***H. torresi* Bright, sp. nov.** (p. 77)
- Declivital interstriae 1 bearing a row of two or three, very small, acute tubercles, these shorter than interstitial width; declivital interstriae 3 bearing two, large, acute tubercles in middle, these longer than interstitial width; interstriae 3–8 each bearing a few small, rounded tubercles at base, 9 bearing a row of larger tubercles ending before costal margin; posterior face of protibia flat, sides subparallel, with very small granules scattered on posterior face; length 2.1 mm; Martinique ..... ***H. absonus* Bright, sp. nov.** (p. 73)
- 4(2). Each elytral interstriae anterior to circumdeclivital margin devoid of granules or nodules in male; declivital interstriae 3 of male bearing two acute granules and sparse, long hairlike setae on declivital face; male frons with a short, transverse row of granules above epistomal margin; length 2.4 mm; Guadeloupe, Martinique, Saint Lucia ..... ***H. antillicus* Bright, sp. nov.** (p. 74)
- Each elytral interstriae anterior to circumdeclivital margin with a row of large, rounded nodules in male; declivital interstriae 3 of male without acute granules or bearing one or two acute granules and short, flattened to slender setae; male frons with a short, transverse carina above epistomal margin; length less than 2.0 mm ..... **5**
- 5(4). Interstitial nodules anterior to circumdeclivital margin in male very large, equal in size to or larger than those on circumdeclivital margin; each interstriae on declivital face of male bearing a median row of slender setae, these twice as long as distance between rows; length 2.0 mm; Montserrat ..... ***H. anomala* Bright, sp. nov.** (p. 74)
- Interstitial nodules anterior to circumdeclivital margin in male equal in size to those on circumdeclivital margin; each interstriae on declivital face of male bearing a median row of narrowly flattened setae, these slightly longer than distance between rows ..... **6**
- 6(5). Declivity of male weakly convex, with small, acute granules on interstriae 1 and 3, these equal in height to interstitial width; nodules or granules on interstriae anterior to circumdeclivital margin distinct, usually higher than interstitial width; length 1.6–1.7 mm; Guadeloupe, Dominica (?), Saint Lucia (?) ..... ***H. tumidosus* Bright, sp. nov.** (p. 78)
- Declivity of male strongly convex, granules on interstriae 1 and 3 very small, much smaller than interstitial width; nodules or granules on interstriae anterior to circumdeclivital margin smaller,

- less distinct, usually shorter than interstitial width; length 1.8–2.0 mm; Martinique .....  
 ..... *H. touroulti* Bright, sp. nov. (p. 77)
- 7(1). Apices of interstriae 1, 3 and 5 on male circumdeclivital margin distinctly to slightly longer than apices of discal interstriae 1, 3 and 5; declivital face of male bearing two acute tubercles, one in interstriae 3 and one at junction of interstriae 3 and 7; length 1.7–2.0 mm; Cuba, Dominican Republic ..... *H. quadrispinosus* Blackman (p. 76)
- Apices of interstriae on male circumdeclivital margin all of equal length; upper portion of female frons with two small, nearly contiguous patches of dense, erect setae; declivital face of male with two small granules in interstriae 3; length 1.7 mm; Jamaica, Haiti .....  
 ..... *H. elegans* Eichhoff (p. 75)

***Hylocurus absonus* Bright, sp. nov.**

Figure 52.

**Type Material.** HOLOTYPE (male?) labeled “W. I.: MARTINIQUE, 4 mi SW Le Marin, Morne Aca, 260 m, N14°27.8, W60°53.9” / “humid forest hilltop clearing FIT, S. Peck, 13–28.VI.2012” / “HOLOTYPE *Hylocurus absonus* D. E. Bright 2016” (SBPC [CNCI]).

**Description (Male?).** Length 2.1 mm, 2.8 times longer than wide; brown. Frons weakly convex, very weakly, transversely impressed above epistoma; surface shining, densely micro-rugose with abundant, erect, moderately long setae, these more abundant along epistomal margin. Antennal scape elongate, twice as long as pedicel, with a sparse brush of long setae; pedicel enlarged, half as long as scape, larger than funicle segments; club round, with suture 1 weakly arcuate with dense setae at lateral margins; suture 2 more strongly arcuate with a dense row of long setae, these extending beyond apex. Pronotum 1.2 times longer than wide, widest at base; sides nearly parallel on posterior portion, broadly rounded to anterior margin; anterior margin broadly rounded, with a row of very low, inconspicuous serrations; anterior slope with numerous, low, randomly scattered asperities, these larger and more distinct than serrations on anterior margin; summit very weakly elevated; posterior half reticulate between numerous, scattered, very low, shining asperities. Elytra 1.6–1.7 times longer than wide; sides parallel on basal three-quarters, abruptly converging to acute terminal mucro; discal striae punctured in even rows, punctures impressed, very large, wider than interstitial width; discal interstriae narrower than striae punctures, smooth, each interstriae with a median row of erect, narrow scales just before base of declivity, these as long as interstitial width and 4.0–5.0 times longer than wide. Declivity steep; striae weakly impressed; interstriae 1 bearing a row of two or three very small, acute tubercles; interstriae 2 unarmed, bearing a median row of very short setae, these much shorter than setae on base; interstriae 3 slightly elevated, bearing a median row of two, widely separated, large tubercles at middle and an additional small granule at base; interstriae 3–8 each bearing a median row of small granules at base, these slightly larger in interstriae 7 and 8; interstriae 9 slightly elevated posteriorly, bearing a median row of slightly larger tubercles, ending at a slightly larger, acute tubercle at middle of interstriae; sutural apex prominent, tip truncate, area above and lateral to apex slightly concave, punctured, with a few, small granules; costal margin not serrate. Protibia stout, subquadrate with sides nearly parallel; posterior face with scattered, distinct, small granules; apex before terminal mucro bearing four, coarse granules.

**Female.** Unknown.

**Distribution.** This species is known from Martinique.

**Etymology.** From *absonus*, Latin for different.

**Comments.** The holotype is evidently a male, based on the serrate anterior pronotal margin, the large tubercles on the declivity and the sparse setae on the antennal scape. However, the frons has numerous, erect setae on the surface, a condition usually associated with females. Adults of this species should be easily distinguished by the pair of distinct, large tubercles on declivital interstriae 3 and by the unarmed interstriae 1.

***Hylocurus anomala* Bright, sp. nov.**

Figure 57.

**Type Material.** **HOLOTYPE** (male) labeled: “**MONTSERRAT**: Ridge above Hope Ghaut, 1051 ft., 16°45.169’N, 62°12.736’W, K. A. Marske and For. Staff, canopy fogging, dawn” / “**HOLOTYPE** *Hylocurus anomala* D. E. Bright 2016” (WIBF [CNCI]). **PARATYPES** (2): 1 labeled with same data as holotype (WIBF); 1 labeled: “**MONTSERRAT**: Woodlands, Cassava Ghaut, Beattie House, 30 May-06 June 2002, uv light, M. A. Ivie” (CNCI). Both paratypes are females.

**Description (Male).** Length 2.0 mm, 2.5 times longer than wide; reddish-brown. Frons evenly convex; surface weakly shining, obscurely granulate, with a distinctly elevated, narrow, transverse carina located halfway between upper margin of eye and epistomal margin. Antennal scape slender, elongate, 3.0 times longer than wide, with a few setae; club as long as wide, with a distinct, strongly arcuate suture, a second arcuate suture may be visible at apex, each margined by a row of setae. Pronotum as in *H. tumidosus*. Elytra 1.2–1.4 times longer than wide; sides parallel on anterior three-fourths, converging to sharply acuminate apex with side margins acuminate; discal striae not impressed, becoming slightly more strongly impressed near declivity, punctured in regular rows, punctures very large, distinctly impressed; discal interstriae weakly convex to flat, most as wide as striae to wider than striae, glabrous, each with a row of two to four very large, rounded granules on apical one-quarter before declivital base, these increasing in size toward declivital base. Declivity steeply convex; all interstriae on declivital face with a median row of small granules, all equal in size and with a row of erect, flattened scales, these longer than interstitial width; interstriae 3 bearing a larger, acute granule mid-way between declivital base and apex; interstriae 9 smooth, without a row of granules, ending in a large, acute projection before apex.

**Female.** Similar in size and proportions to male. Frons as in male except transverse carina usually slightly smaller. Pronotum as in male. Elytra as in male except area before declivital base with small granules, these not larger than others on disc. Declivity evenly convex, with smaller granules; interstriae 1 with a small, acute granule just below base; interstriae 3 with a similar granule at middle; apex of interstriae 9 much less strongly projecting.

**Distribution.** This species is known from Montserrat.

**Etymology.** From *anomalos*, Greek for abnormal or unusual.

**Comments.** Males of this species are similar to those of *H. tumidosus* but differ by the distinctly larger interstitial granules just before the declivital base and by the more strongly elevated carina on the frons.

***Hylocurus antillicus* Bright, sp. nov.**

**Type Material.** **HOLOTYPE** (male) labeled: “**GADELOUPE**: Basse Terre, Trace des Crêtes at D-14, 21 MAY 2012, R. Turnbow” / “**HOLOTYPE** *Hylocurus antillicus* D. E. Bright 2016” (RHTC [FSCA]). **ALLOTYPE** with same data as holotype except date is “22 MAY 2012” plus my allotype label (RHTC [FSCA]). **PARATYPES** (7): 1 labeled: “**GADELOUPE**: Basse Terre, La Trace du Petit-Malendure, blacklight trap, 21 May 2012, R. Turnbow” (CNCI); 1 labeled: “**GADELOUPE**: Basse Terre, Pointe a Lazard, blacklight trap, 20 May 2012, R. Turnbow” (CNCI); 1 labeled: “W. I.: **GADELOUPE**: Bas. Ter.: Rivière Sens, Sentier Houëlemont, N15°58.93, W61°42.62” / “humid forest FIT, 80 m, 19–31.V.2012, S. Peck” (SBPC); 1 labeled: “WI: **GADELOUPE**, BT, Pigeon Chalet Sou-le-Vent, N16°09.05, W61°45.97, 170 m, hotel yard, uv traps, 13.V.2012, S. Peck” (SBPC); 1 labeled: “**GADELOUPE**: Basse T., Grand Anse, Deshaies, 25 Dec. 2002, J. Tourault,” (CNCI); 1 labeled: “**WEST INDIES**: **Martinique**, Bellefontaine, 2.IV.2011” / “J. Tourault, collector” (CNCI); 1 labeled: “**SAINT LUCIA**: Micoud Dist., Escap Community, 55 m, 13.8310°N, 61.8962°W, 27 MAY 2009, uv light, R. C. Winton” (WIBF).

**Description (Male).** Length 2.4 mm, 2.9 times longer than wide; dark reddish-black. Frons convex, very weakly, transversely impressed above epistoma to level of upper eye level, upper margin of impressed

area with a row of small, rounded granules; surface shining, minutely reticulate, with scattered, small granules and a with a brush of short setae above impressed area and along epistomal margin. Antennal scape small, as large as pedicel, with a few setae; club as long as wide, with a distinct, weakly arcuate suture, a second arcuate suture may be visible at apex, each margined by a row of setae. Pronotum 1.2 times longer than wide, widest at middle; sides weakly arcuate, nearly straight and parallel on posterior half, anterior margin broadly rounded, serrate; anterior slope with numerous, large, scattered asperities and a few, much smaller, intermixed granules; posterior surface dull, minutely reticulate, with densely placed, small asperities. Elytra 2.0 times longer than wide; sides parallel on anterior three-fourths, converging to sharply acuminate apex with side margins acuminate; discal striae narrow, weakly impressed, becoming slightly more strongly impressed near declivity, punctured in regular rows, punctures large, distinctly impressed; discal interstriae weakly convex to flat, most as wide as striae to slightly wider than striae, glabrous, without major granules on surface near declivity, each interstriae ending at declivital base in a large rounded point, apices of interstriae 2, 4 and 6 slightly shorter than apices of interstriae 1, 3 and 5. Declivity steeply convex, base with a circumdeclivital ridge of tubercles marking each interstitial apex; interstriae 1 on declivital face with a median row of large granules, all equal in size and a row of erect, flattened scales, these longer than interstitial width; interstriae 3 with one to three large, acute granules; remaining interstriae unarmed, dull, minutely reticulate; interstriae 9 ending in a blunt elevation, with a gap before apical margin.

**Female.** Similar in size and proportion to male. Frons slightly convex, weakly impressed on a small median area; surface shining, minutely punctured, with a brush of sparse, yellowish, narrowly flattened scales. Antennal scape elongate, bearing a sparse brush of short setae. Pronotum as in male. Elytra as in male except posterior one-fourth evenly convex, not bearing a circumdeclivital ridge; interstriae 1 narrow, slightly elevated, bearing a row of small granules; interstriae 2 slightly impressed, unarmed; interstriae 3 slightly elevated, bearing two or three, larger, acute tubercles; interstriae 4–8 bearing a few small tubercles; interstriae 9 evenly converging to strongly acute apex.

**Distribution.** This species is known from Guadeloupe, Martinique and Saint Lucia.

**Etymology.** This species named for the Antilles islands.

**Comments.** The male of this species may be distinguished by the lack of interstitial granules before the declivital base, by the presence of one to three acute granules in interstriae 3 on the declivital face, by the row of small granules on the frons and by the other characters given in the description and key to species. Females may be recognized by the evenly convex elytral declivity, with interstriae 3 bearing two or three small tubercles.

### ***Hylocurus elegans* Eichhoff**

*Hylocurus elegans* Eichhoff 1872: 134; Wood and Bright 1992: 424.

**Description (Male).** Length 1.7 mm, 2.6 times longer than wide; dark reddish-brown. Frons weakly, transversely impressed above epistoma, with a strongly elevated, median, transverse row of four or five larger granules at upper margin of impression, upper half convex, with a sparse clump of short, erect scales; surface dull, densely minutely reticulate, with small, dense granules except granules absent in transverse impression. Antennal scape elongate, 2.5 times longer than wide, slightly shorter than funicle; club oval, 1.2 times longer than wide, appearing solid without obvious sutures. Pronotum 1.2 times longer than wide; sides straight on posterior half, anterior margin broadly rounded, serrate; anterior slope with numerous, scattered asperities; posterior surface very slightly transversely impressed, surface dull, minutely reticulate, with small, widely-separated, rounded, shining granules, these distinctly smaller than asperities on anterior surface. Elytra 1.2–1.3 times longer than wide; sides parallel on anterior three-fourths, evenly, strongly converging to sharply acuminate apex; discal striae weakly impressed, more distinctly impressed near declivital base, punctured in regular rows, punctures very large, distinctly impressed; discal interstriae weakly convex to flat, narrower than striae, glabrous, each ending with a large, blunt point at declivital base, apices of these points all equally extended. Declivity

steeply convex; striae indistinct, punctures obscure, smaller, shallower than those on disc; interstriae 1 not elevated, unarmed; declivital face of each elytron bearing a pair of very small, acute granules, one in interstriae 3 and one below this granule in interstriae 7 at junction of interstriae 3 and 7; vestiture consisting of small, narrow, hairlike scales in all interstriae.

**Female.** Slightly smaller than male. Frons as in male except slightly more concave in transverse impression above epistoma, transverse row of granules smaller or absent and bearing a distinct clump of dense, longer scales. Antennal club solid, as in male. Declivity evenly convex, without a circumdeclivital margin of distinct projections at base; each interstriae bearing a median row of distinct scales; granules in interstriae 3 and 7 similar to those of male.

**Distribution.** This species is widely distributed in Central America, southern Mexico and northern South America and is recorded in the West Indies from Haiti and Jamaica (Wood and Bright 1992).

**Specimens examined. JAMAICA:** Saint Andrew Parish, 2 mi. SW Ferry, 5.VIII.1956, B. and B. Valentine / under bark of dead *Ceiba* (5-CNCI).

**Comments.** Adults of this species may be recognized by the apices of the interstriae on the male circumdeclivital ring are all of equal length, by the presence of two small, nearly contiguous patches of dense setae on the upper portion of the female frons and by the presence of two small granules on declivital interstriae 3 of the male.

### ***Hylocurus quadrispinosus* Blackman**

Figure 53.

*Hylocurus quadrispinosus* Blackman 1928b: 191; Wood and Bright 1992: 427.

*Hylocurus cuspidatus* Eggers 1951: 153; Wood and Bright 1992: 423. **New Synonymy.**

**Description (Male).** Length 1.7–2.0 mm, 2.8 times longer than wide; dark reddish-brown. Frons concealed in available specimens. Antennal scape slender, elongate, 3.0 times longer than wide, with a few setae; club as long as wide, with suture 1 marked by a small clump of setae at lateral margin, suture 2 arcuate, margined by a row of setae. Pronotum 1.2 times longer than wide; sides straight on posterior half, apex broadly rounded, anterior margin serrate; anterior slope with numerous, scattered asperities; posterior surface very slightly transversely impressed, surface dull, minutely reticulate, with large, densely-placed, acute granules, these slightly smaller than asperities on anterior surface. Elytra 1.6 times longer than wide; sides parallel on anterior three-fourths, evenly, strongly converging to sharply acuminate apex; discal striae not impressed, punctured in regular rows, punctures large, distinctly impressed; discal interstriae weakly convex to flat, most nearly as wide as striae to wider than striae, glabrous, each ending with a blunt projection at declivital base, apices of interstriae 2, 4 and 6 ending behind level of apices of interstriae 1, 3 and 5. Declivity steeply convex; striae distinct, punctures smaller, shallower than those on disc; interstriae 1 slightly elevated, bearing a median row of large, acute granules; declivital face of each elytron bearing a pair of large, acute spines, these equal to or longer than interstitial width, one in interstriae 3 and one below this spine at junction of interstriae 3 and 7; vestiture consisting of small, narrow, hairlike scales on circumdeclivital margin.

**Female.** Not represented in material examined.

**Distribution.** This species is known from Cuba and the Dominican Republic.

**Specimens examined. CUBA:** Cayamas, E. A. Schwarz (2-USNM). **DOMINICAN REPUBLIC:** Pedernales, 25 km. N Cabo Rojo, 700 m, 10 July 1996, R. Turnbow (1-RHTC); M. Nouel, Banao, uv trap, 5.IX.1997, C. W. O'Brien and R. Baranowski (1-CNCI); La Altigracia, Parque del Este, Caseta Guaraquao, 4.4 mi SE Bayahibe, 3 m, 26–27 May 2004 / C. Young, J. Rawlins, J. Fetzner, C. Nunez, semi humid forest near sea, limestone, uv light sample 51114 (1-CMNH).

**Comments.** Males of this species are unique and distinct among West Indian species of *Hylocurus* by bearing a pair of large, acute spines on the declivital face of each elytron, one in interstriae 3 and one in interstriae 7 at the junction of interstriae 3 and by the presence of a distinct, rounded projection at the

apex of each interstriae at the base of the declivity. The apices of the even-numbered interstriae end slightly behind the adjacent apices of the odd-numbered interstriae. Females are unknown, but it is likely that *H. alienus* is the female of this species.

The holotype of *H. quadrispinosus* in the USNM and the holotype of *H. cuspidatus* in the NHMW have been examined. Both represent the same species.

***Hylocurus torresi* Bright, sp. nov.**

Figure 54.

**Type Material.** HOLOTYPE (male) labeled: "PUERTO RICO, Guaynabo, IV.2001, J. Torres," / ex: light trap" / "HOLOTYPE *Hylocurus torresi* D. E. Bright 2016" (CNCI).

**Description (Male).** Length 1.9 mm, 2.5 times longer than wide; reddish-brown. Frons concealed above upper eye level; very weakly, transversely impressed above epistoma; surface shining with scattered small granules. Antennal scape elongate, with a sparse brush of long setae; pedicel as long as one-third of length of scape, larger than funicle segments; club round, suture 1 weakly arcuate with dense setae at lateral margins, suture 2 more strongly arcuate with a dense row of long setae, these extending beyond apex. Pronotum less than 1.1 times longer than wide, widest on posterior half; sides parallel on posterior portion, broadly rounded to anterior margin; anterior margin broadly rounded, with a row of very low, inconspicuous serrations; anterior slope with numerous, low, randomly scattered asperities, these slightly larger and more elevated than serrations on anterior margin; summit weakly elevated; posterior half reticulate between numerous, scattered, very low, shining asperities. Elytra 1.5 times longer than wide; sides parallel on basal three-quarters, abruptly converging to acute terminal mucro; discal striae punctured in even rows, punctures impressed, slightly larger than interstitial width; discal interstriae as wide as striae punctures, smooth, each interstriae with a median row of erect, narrow scales on posterior half, these as long as interstitial width and 4.0–5.0 times longer than wide. Declivity steep; striae weakly impressed; interstriae 1 bearing a single, erect tubercle above middle, this tubercle as long as interstitial width, no additional tubercles present except for a few, very small granules; interstriae 2 unarmed, bearing a median row of narrow scales; interstriae 3 slightly elevated, with a median row of eight small tubercles, these extending from above base, gradually increasing in size and ending in a large tubercle located in middle of declivity, area below tubercle unarmed, concave to apex; interstriae 3–8 each bearing a median row of small granules; interstriae 9 slightly elevated posteriorly, bearing a median row of slightly larger tubercles, ending at a large tubercle at middle of interstriae; sutural apex prominent, tip truncate, area lateral to apex slightly concave, punctured; costal margin slightly serrate. Protibia slender, inflated on distal half; apex before terminal mucro bearing four, coarse granules; posterior face bearing several, small, acute tubercles.

**Female.** Unknown.

**Distribution.** This species is known from Puerto Rico.

**Etymology.** This species is named for Juan Torres, the collector of the holotype.

**Comments.** The male of this species may be readily recognized by the steeply sloping elytral declivity which bears a single tubercle in the middle of interstriae 1, by the presence of a row of small tubercles or granules on declivital interstriae 3 ending at a prominent tubercle slightly above the middle on declivital face and by the elevated declivital interstriae 9 which bears a row of small granules ending at a larger tubercle before the declivital apex. The female is unknown.

***Hylocurus touroulti* Bright, sp. nov.**

Figure 55.

**Type Material.** HOLOTYPE (male) labeled: "WEST INDIES: MARTINIQUE, Bellefontaine, 350 m, 25.III.2011" / "J. Touroult" / "HOLOTYPE *Hylocurus touroulti* D. E. Bright 2016" (CNCI). PARATYPES

(4): all with the same locality data and collector as holotype, 3 dated “2.IV.2011” and 1 dated “1.III.2011” (CNCI).

**Description (Male).** Length 1.8–20 mm, 2.6 times longer than wide; reddish-brown. Frons evenly convex; surface weakly shining, obscurely granulate, with a weakly elevated, narrow, transverse, median carina halfway between upper margin of eye and epistomal margin. Antennal scape slender, elongate, 3.0 times longer than wide, with a few setae; club as long as wide, with two distinct, strongly arcuate sutures, each margined by a row of setae. Pronotum as long as wide; sides weakly arcuate, nearly straight, parallel on posterior half, anterior margin broadly rounded, serrate; anterior slope with numerous, scattered asperities; posterior surface very slightly transversely impressed, surface dull, minutely reticulate, with densely placed, small granules. Elytra 1.5–1.6 times longer than wide; sides parallel on anterior three-fourths, converging to sharply acuminate apex with side margins acuminate; discal striae not impressed except slightly more strongly impressed near declivity, punctured in regular rows, punctures very large, distinctly impressed; discal interstriae weakly convex to flat, most as wide as striae, glabrous, each with a row of two or three large, rounded nodules on apical one-quarter before declivital base. Declivity steeply convex; all interstriae on declivital face with a median row of erect, flattened scales, these longer than interstitial width; interstriae 3 with two very small granules; interstriae 9 with a row of similar granules, row ending in a large, acute projection before apex.

**Female.** Similar in size and proportions to male. Frons as in male except transverse carina usually slightly smaller. Pronotum as in male. Elytra as in male except area anterior to declivital base with small nodules, these equal in size to granules on disc. Declivity more evenly convex, with smaller interstitial granules; apex of interstriae 9 much less strongly projecting.

**Distribution.** This species is known from Martinique.

**Etymology.** This species is named for J. Touroult, the collector of the type series.

**Comments.** Males of this species may be recognized by the steeply sloping elytral declivity which bears a row of two very small granules in interstriae 3, by the presence of two or three large, rounded nodules in each elytral interstriae just before the declivital base and by the acute, strongly projecting apex of interstriae 9. The female declivity is more evenly convex, without large nodules on the base and with small, acute granules and long setae on each interstriae.

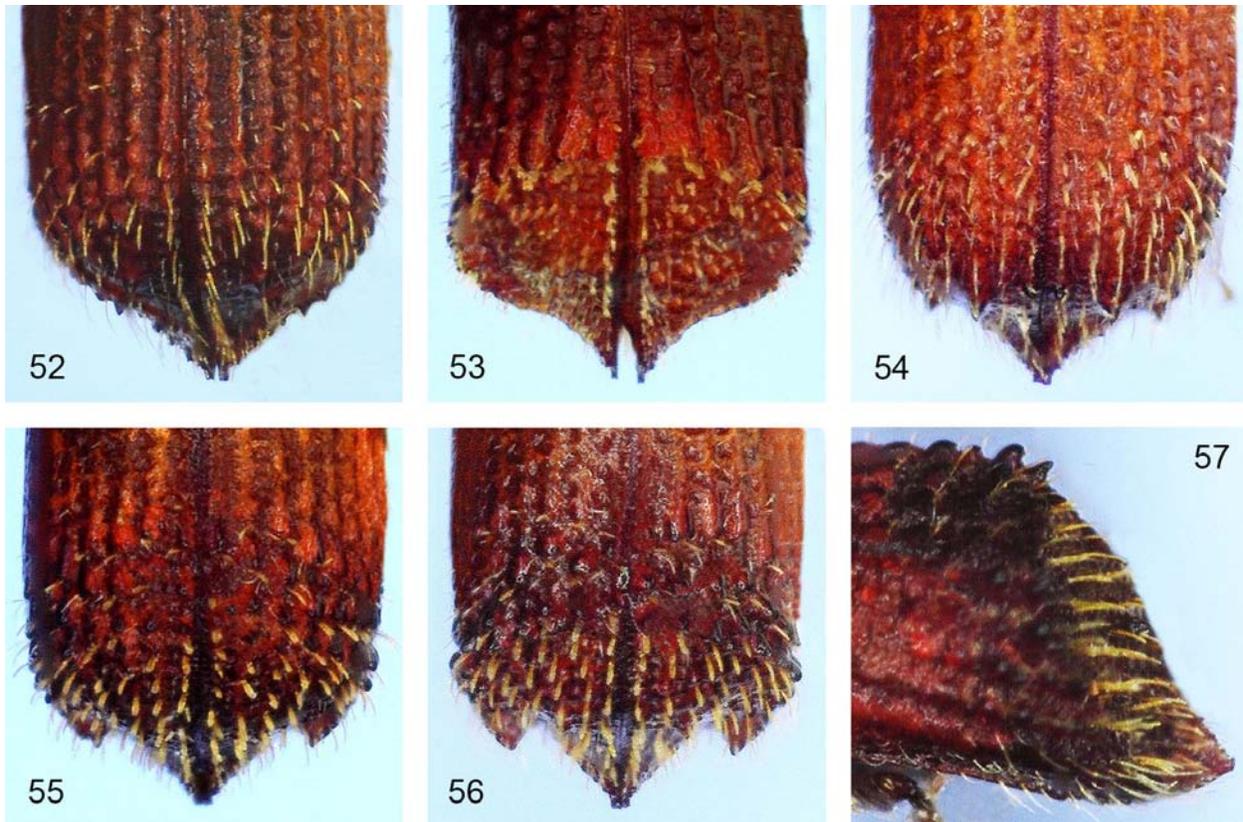
Males are very similar to those of *H. tumidosus* but differ by the smaller nodules at the apex of each interstriae just before the declivital circumdeclivital row and by the slightly smaller size.

***Hylocurus tumidosus* Bright, sp. nov.**

Figures 56, 386, 434, 504.

**Type Material.** **HOLOTYPE** (male) labeled: “**GADELOUPE**: Basse T., Gourbeyre, Palmiste, 05–20.JAN 2003, J. Touroult” / “**HOLOTYPE** *Hylocurus tumidosus* D. E. Bright 2016” (WIBF [CNCI]). **ALLOTYPE** labeled with same data as holotype except date is “25–30 MAR 2003” plus my allotype label (WIBF [CNCI]). **PARATYPES** (19); 5 labeled with same data as holotype (WIBF, CNCI); 3 labeled with same data as allotype (WIBF); 3 labeled: “**GADELOUPE**: Petit Binro, 02 Jan 2003, J. Touroult” (WIBF); 5 labeled: “**GADELOUPE**: Basse Terra, Saut d’Eau du Matouba, JAN 2002, J. Touroult, ex. *Laura inga*” (WIBF, CNCI) and 2 labeled with same data except “larvae in Inga” (WIBF); 1 labeled: “**GADELOUPE**: Basse Terre, Gourbeyre, FEB 2003, J. Touroult” (WIBF); 2 labeled: “**GADELOUPE**: Basse Terre, Gourbeyre, Foret de Moscou, 20–26 FEB 2003, J. Touroult” (WIBF); 1 labeled: “**MARTINIQUE**: Bellefontaine, 350 m, 25.III.2011” / “J. Touroult” (CNCI).

Two female specimens, possibly of this species, have been seen but are not included in the type series. One is labeled: “**DOMINICA**: Springfield Estate, Mt. Joy, 31.V-16.VI.2004” / “Ridge top forest, S. and J. Peck, 550 m.” (SBPC) and the other is labeled: “**St. Lucia**, Grande Anse trap site, 38 m, 17–23 May 2009, uv light, R. C. Winton and E. A. Ivie” (WIBF).



**Figures 52–57.** Declivities of *Hylocurus* spp. **52)** *H. absonus*. **53)** *H. quadrispinosus*. **54)** *H. torresi*. **55)** *H. touroulti*. **56)** *H. tumidosus*. **57)** *H. anomala*.

**Description (Male).** Length 1.6–1.7 mm, 2.5 times longer than wide; reddish-brown. Frons evenly convex; surface weakly shining, obscurely granulate, with a weakly elevated, narrow, transverse, median carina halfway between upper margin of eye and epistomal margin. Antennal scape slender, elongate, 3.0 times longer than wide, with a few setae; club as long as wide, with a distinct, strongly arcuate suture, a second arcuate suture may be visible at apex, each margined by a row of setae. Pronotum as long as wide; sides weakly arcuate, nearly straight and parallel on posterior half; anterior margin broadly rounded, serrate; anterior slope with numerous, scattered asperities; posterior surface very slightly transversely impressed, surface dull, minutely reticulate, with densely placed, small granules. Elytra 1.2–1.4 times longer than wide; sides parallel on anterior three-fourths, converging to sharply acuminate apex with side margins acuminate; discal striae not impressed, except slightly more strongly impressed near declivity, punctured in regular rows, punctures very large, distinctly impressed; discal interstriae weakly convex to flat, most as wide as striae to wider than striae, glabrous, each with a row of two very large, acute granules on apical one-quarter before declivital base. Declivity steeply convex; all interstriae on declivital face with a median row of granules, all equal in size and a row of erect, flattened scales, these longer than interstitial width; interstriae 9 with a row of similar granules, but row ending in a large, acute projection before apex.

**Female.** Similar in size and proportions to male. Frons as in male except transverse carina usually slightly smaller. Pronotum as in male. Elytra as in male except area before declivital base with small granules, these not larger than others on disc. Declivity more evenly convex, with smaller granules; apex of interstriae 9 much less strongly projecting.

**Distribution.** This species is known from Guadeloupe, Martinique and possibly Dominica and Saint Lucia.

**Etymology.** From *tumeo*, Latin for swelling, referring to the large nodules at, or before, the declivital base.

**Comments.** Males of this species may be readily recognized by the steeply sloping elytral declivity which bears a row of two or three large granules in each interstriae just before the declivital base, by the very large, rounded nodules in each elytral interstriae just before the declivital base and by the acute, strongly projecting apex of interstriae 9. The female declivity is more evenly convex, without large nodules on the base and with small, acute granules and long setae on each interstriae.

### Genus *Miracis* LeConte

*Miracis* LeConte 1868: 164; Wood and Bright 1992: 431; Bright and Skidmore 2002: 383 (checklist); Bright 2014: 114.

Members of *Miracis* are similar to those in *Hylocurus* but differ by the more strongly flattened, triangular antennal scape (Fig. 387), by the much more strongly arcuate antennal sutures (Fig. 387) and by the strongly flattened anterior tibia with a smooth posterior surface (Fig. 367). As in *Hylocurus*, the anterior margin of the pronotum is strongly serrate in the males and weakly serrate to not serrate in the females.

Species in this genus are distributed from the United States to northern South America. Bright and Skidmore (2002) list 25 species. One species is included herein from the West Indies.

Also, as in *Hylocurus*, species of *Miracis* are usually found under the bark of injured, broken, dead or dying small branches and limbs of various broadleaved trees and shrubs and are evidently of no economic importance.

### *Miracis cubensis* Blackman

Figures 387, 435, 505.

*Miracis cubensis* Blackman 1928b: 193; Wood and Bright 1992: 432.

**Description (Male).** Length 2.2 mm, 2.8 times longer than wide; reddish-brown. Frons evenly convex; surface weakly shining, obscurely granulate and minutely reticulate, with abundant, scattered, yellowish setae; epistoma weakly inflated, smooth, shining. Antennal scape slender, elongate, 2.0 times longer than wide and half as long as funicle, with abundant, long setae, longest setae 2.0 times longer than scape; club 1.3 times longer than wide, with two distinct, strongly arcuate sutures, each margined by a row of setae. Pronotum 1.1 times longer than wide, widest at middle; sides weakly converging on basal half, weakly constricted in front of middle, converging to broadly rounded, strongly serrate anterior margin; anterior slope with numerous, scattered asperities; posterior surface very slightly transversely impressed, surface dull, minutely reticulate, with densely placed, small granules and scattered, erect setae; a distinct group of longer setae just behind middle of summit halfway between midline and lateral margin. Elytra 1.6–1.7 times longer than wide; sides parallel on anterior three-fourths, converging to sharply acuminate apex; discal striae not impressed, punctured in regular rows, punctures very large, distinctly impressed, close; discal interstriae weakly convex, much narrower than striae, interstriae 1 with a median row of erect setae from base to declivity, interstriae 2, 3, 5, and 7 each with a median row of several to many, erect setae. Declivity steeply convex; striae narrower and more deeply impressed than on disc; interstriae 1 narrow, with a median row of small granules; interstriae 2 slightly impressed, with a median row of very small granules; interstriae 3 slightly elevated, with a row of five large, acute granules, these as long as interstitial width; remaining interstriae each with a median row of similar, fewer granules located on declivital base, with a row of smaller granules extending to apical margin; all interstriae bearing a median row of long, erect setae.

**Female.** Similar in size and proportions to male, except slightly more slender, 2.9 times longer than wide. Frons convex; surface dull, very densely, minutely reticulate, glabrous on a large median area extending from epistoma to upper level of eyes, distinctly granulate on upper area and near eyes, with

scattered, narrowly flattened, scalelike setae on granulate area near eyes and on upper area, with longer setae on epistomal margin. Antennal scape as in male except with very long setae, longest setae more than 3.0 times longer than scape; club larger and narrower than in male, 2.6 times longer than wide, with two strongly arcuate sutures, suture 1 extending to near apex of club. Pronotum and elytra as in male. Declivity as in male except interstitial granules smaller.

**Distribution.** This species is known from Cuba, Puerto Rico and the Dominican Republic.

**Specimens examined. CUBA:** Cayamas (4–USNM). **DOMINICAN REPUBLIC:** La Altagracia, Parque del Este, Caseta Guaraguao, 4.4 km SE Bayahibe, 3 m, 26–27 May 2004 / C. Young, J. Rawlins, J. Fetzner, C. Nunez, semiarid forest near sea, limestone, uv light (4–CMNH); Province Hato Mayor, Pac. Nac. Los Haitises, W of Sabana de la Mar, Bosque Humido, 31 Mar–03 Apr 1992, M. A. Ivie (1–WIBF). **PUERTO RICO:** Santa Isabela, PR #1, Km. 96.2, XI.19.2013 (1–PRDA).

**Comments.** Adults of this species may be distinguished by the small, triangular antennal scape which is ornamented by long setae in the female, by the two distinctive clumps of long setae posterior to the pronotal summit and by the granules in declivital interstriae 1 and 3. These granules are small in the female and much larger and more acute in the male. Females are further distinguished by the smooth, dull minutely reticulate frons.

The host listed on the type series is “bark and wood of *Juccaro amarillo*”. The locality label on the holotype simply says, in pencil, “Cuba, Schwarz”.

### Genus *Micracisella* Blackman

*Micracisella* Blackman 1928b: 192; Wood and Bright 1992: 429; Bright and Skidmore 2002: 383 (check-list); Bright 2014: 115.

Members of *Micracisella* resemble those of *Hylocurus* and *Micracis*, but differ by the much larger, emarginate eye with each eye nearly contiguous on the gular region, by the smaller size of adults of the various species, by the more broadly arcuate antennal sutures and by the less extended elytral apex.

Species in this genus are distributed from the United States to northern South America. Bright and Skidmore (2002) list 20 species. One species is included herein from the West Indies.

Species of *Micracisella* are usually found in the pith of small, broken, dying twigs.

### *Micracisella nanula* (LeConte)

Figures 388, 436, 506.

*Micracis nanula* LeConte 1876: 368.

*Micracisella nanula*: Wood and Bright 1992: 430; Bright and Skidmore 2002: 65.

**Description (Female).** Length 1.4–1.8 mm, 3.2 times longer than wide. Frons slightly flattened to weakly impressed just above epistoma, convex above, with a fine, short, median carina just above epistoma; surface dull, finely reticulate, with short, erect scales clustered along margins of eyes and along epistomal margin. Eyes very large, separated on frons by a distance slightly less than eye width, nearly contiguous on gular region. Antennal scape flattened, slightly oval, bearing a tuft of long setae; club circular, as long as funicle, with two strongly arcuate sutures. Pronotum 1.1 times longer than wide; sides weakly arcuate on basal half, anterior margin narrowly rounded, bearing two to four serrations; anterior slope dull, minutely reticulate between asperities; posterior surface dull and minutely reticulate, with scattered, minute granules. Elytra 2.0 times longer than wide; sides straight, parallel on basal three-fourths, apex slightly mucronate; discal striae not impressed, punctures small, deeply impressed, each puncture bearing a short, recumbent, narrow scale; discal interstriae shining, 2.0 times wider than striae, each interstriae bearing a median row of erect, flattened scales, these becoming broader toward declivity. Declivity convex; surface reticulate-granulate, striae punctures slightly larger than those on disc; interstitial scales 4.0–6.0 times longer than wide, broader than striae setae.

**Male.** Similar to female except frons convex with a small flattened area just epistoma and devoid of median carina, setae on antennal scape shorter and declivital scales shorter and slightly broader.

**Distribution.** This species is known from the southeastern United States from South Carolina to Florida and east Texas and from the Bahamas.

**Specimens examined.** **BAHAMAS: Abaco Island**, 28.VIII.1971, H. Howden (1–CNCI). **Andros Island**, 27.VII.1987, J. Browne, orchard edge black light (1–CNCI); Maidenhair Coppice, 10.VI.2004, M. C. Thomas (2–FSCA); Money Point, 25.VII.2008, T. R. Smith, beating cut vegetation (1–FSCA); Forfar Field Sta., nr. Stafford Creek, 22–28.VII.2006, M. C. Thomas, T. R. Smith, uv trap in coastal coppice (7–FSCA). **Eleuthera Island**, Rain-bow Bay, 7.V-9.VI.1986, D. B. and R. W. Wiley (1–RHTC). **South Bimini Island**, Little Harbor, July 20, 1951, C. and P. Vaurie (1–AMNH).

**Comments.** Adults of this species may be readily recognized by the very large eyes which are nearly contiguous on the gular region, and by the other characters given in the key to the genera and in the generic diagnosis.

**Genus *Parathysanoes* Bright, genus nov.**

**Diagnosis.** With the character states of Micracidini as given by Wood (2007) except antennal club devoid of sutures (sometimes a very vague suture may be detected at the extreme apex); anterior tibiae expanded and slightly inflated on the distal half, similar to those in *Hylocurus* and antennal funicle 5-segmented (pedicel excluded).

**Type species.** *Parathysanoes absonus* Bright, sp. nov.

**Etymology.** From *para*, Greek for near or beside, e.g. near *Thysanoes*. Gender neuter.

**Comments.** This genus is established for one species that differs significantly from any currently known species in the Micracidini.

***Parathysanoes absonus* Bright, sp. nov.**

Figures 368, 437, 507.

**Type Material.** **HOLOTYPE** (male) labeled: “**VIRGIN IS.: Buck Is.**, B. I. Reef Nat. Mon., North side trail, 23 AUG 1996, A. C. Poponi, F. I. T.” / “HOLOTYPE *Parathysanoes absonus* D. E. Bright 2016” (WIBF [CNCI]). **ALLOTYPE** labeled: “**VIRGIN IS.: Saint Thomas**, Est. Botany Bay, 29 July-15 Oct 1994, M. A. and L. L. Ivie” / “ALLOTYPE *Parathysanoes absonus* D. E. Bright 2016” (WIBF [CNCI]). **PARATYPES** (11): 1 labeled with same data as holotype (CNCI); 1 labeled: “**VIRGIN IS.: Buck Is.**, Buck Is. Reef Nat. Mon., 17 FEB 1997, A. C. Poponi colr., flight intercept trap” (WIBF); 1 labeled: “**VIRGIN IS.: Buck Is.**, Buck Is. Reef Nat. Mon., Aug-08 SEPT 1994, Z. M. Hillis, flight intercept #14” (WIBF); 1 labeled: “**VIRGIN IS.: Buck Is.**, B. I. Reef Nat. Mon., 28 NOV-09 FEB 1996, Z. M. Hillis, flight intercept trap” (WIBF); 1 labeled: “**VIRGIN IS.: Buck Is.**, Buck Is. Reef N. M., 30 Mar-29 June 1995, flight intercept #15, 340 ft., Z. M. Hillis” (WIBF); 1 labeled: “**VIRGIN IS.: Buck Is.**, Buck Is. Reef N. M., 08 SEPT 1994, Z. M. Hillis” (CNCI); 2 labeled: “**VIRGIN IS.: Saint Thomas**, Est. Botany Bay, 29 July-15 Oct 1994, M. A. and L. L. Ivie” (CNCI); 1 labeled: “**DOMIN. REP.**: Pedernales, 13.5 km N Cabo Rojo, 140 m, 21 AUG-10 SEPT 1988, flight intercept trap, M. A. Ivie, T. K. Philips and K. A. Johnson” (WIBF); 1 labeled: “**DOMINICA**: Cabrits N. P., Fort Shirley, 6–28–2004, CW and LB O’Brien” (CNCI); 1 labeled: “**WEST INDIES: St. Lucia**: nr. Micoud, trail toward Fond Bay, 13°49’48”N, 60°53’42”W, 15 m, A. R. Cline and S. D. Gaimari, collrs., 22 May 2009, ex. blacklight trap” (WIBF). One damaged specimen not designated as a paratype, is labeled “**VIRGIN IS.: Buck Is.**, Buck Is. Reef Nat. Mon., 30 Mar-29 June 1995” (WIBF).

**Description (Male).** Length 1.6 mm, 2.3 times longer than wide; reddish-brown. Frons evenly convex, very weakly, transversely impressed above epistoma; surface moderately dull, densely granulate and punctate, with very short, yellowish setae, these longer and downward pointing along epistoma. Antennal scape club-shaped, shorter than funicle; pedicel larger than remaining segments, half as long as remaining segments; club oval, 1.2 times longer than wide, without sutures. Pronotum 1.1 times wider than long, widest at base; sides very weakly arcuate, anterior margin broadly rounded, without serrations; summit at middle; anterior slope convex, with numerous, scattered asperities arranged in no apparent order; posterior surface densely minutely granulate and with short, erect hairlike setae, brightly shining between granules, granules smaller than asperities on anterior slope. Scutellum large, flat, triangular. Elytra 1.5 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded, strongly acuminate at sutural apex; discal striae not impressed, punctured in regular rows, punctures large, deep, coarse; discal interstriae as wide as striae, smooth, brightly shining; interstriae 1, 2, 3, 5, 7 and 9 with a median row of short, narrowly spatulate, yellowish scales, these as long as interstitial width, interstriae 4, 6 and 8 glabrous. Declivity basically convex; interstriae 1 weakly elevated, with a row of fine granules, ending in a strongly extended, apically truncate mucro; interstriae 2 narrower than on disc, impressed below level of 1 and 3, with a few minute granules at base; interstriae 3 elevated above level of 1, with a median row of distinct granules, these larger than those on 1; interstriae 3 joining elevated interstriae 9 at postero-lateral area, 9 with four larger granules, granules becoming smaller on lateral areas; space below interstriae 9 deeply impressed, bordered by the acutely elevated and slightly expanded apical margin of the elytra; interstriae 4–8 each with a median row of smaller, rounded granules; vestiture consisting of short, yellowish interstitial setae and slightly shorter striae setae. Apex of last abdominal sternite extended into a broad, truncate projection. Protibia slender, distal tip wider than base, bearing four, rounded tubercles, posterior face slightly inflated, bearing scattered, small, acute granules. Procoxae separated by a distance less than half of diameter of coxa.

**Female.** Similar to male except declivital granules smaller, interstriae 3 less strongly elevated.

**Distribution.** This species is known from Dominica, the Dominican Republic, Saint Lucia and the U. S. Virgin Islands.

**Etymology.** From *absonus*, Latin for different.

**Comments.** Adults of this species may be distinguished by the solid antennal club which has an obscure suture at the extreme apex of the club which may not be visible, by the slightly expanded, acute costal margin of the elytra just slightly lateral to the acuminate apex, by the slightly elevated declivital interstriae 3 and 9 which are joined at the lower quarter of the declivity with a slightly elevated ridge extending to the acuminate apex and by the acutely margined, truncate apex of the last abdominal sternite.

### Genus *Pseudothysanoes* Blackman

*Pseudothysanoes* Blackman 1920: 46; Wood and Bright 1992: 411; Bright and Skidmore 2002: 419 (checklist); Bright 2014: 116.

Members of *Pseudothysanoes* may be distinguished from those in other genera in the Micracidini by the pronotum which is as long as wide or wider than long, by the prominent pronotal summit, by the broadly rounded elytral apex and by the slender protibiae. The antennal funicle is 5-segmented (pedicel excluded). Because of the diversity displayed by species in this genus, several subgenera were designated by Wood (1982). These subgenera are not used in this treatment since they are not clearly differentiated.

Species of this genus are distributed from southern Canada to southern Brazil and Chile. Eighty-nine species are recorded in Bright and Skidmore (2002). Nineteen species are treated herein from the West Indies.

The adults of most species are very small and are evidently of no economic importance.

### Key to the species of *Pseudothysanoes* in the West Indies

1. Antennal scape very small, as long as wide, flattened, equal in length to pedicel; asperities on anterior slope of pronotum arranged in four concentric rows, each bordered by a row of very broad, flattened scales, these much larger than scales on elytra; length 0.9 mm; Cuba ..... *P. minor* (Blackman) (p. 96)
- Antennal scape club-shaped, much longer than wide and definitely longer than pedicel, usually as long as or longer than funicle; asperities on anterior slope of pronotum scattered in no apparent order, without conspicuous scales ..... 2
- 2(1). Elytral declivity convex, often granulate but without conspicuous spines or tubercles ..... 3
- Elytral declivity with three very large spines on each elytron, with several smaller, acute spines between the large first and second spines; length 1.5 mm; Cayman Islands, Martinique, Puerto Rico, Saint Lucia and the U. S. Virgin Islands ..... *P. magnispinatus* Bright and Torres (p. 94)
- 3(2). Antenna very long, extending well beyond posterior margin of pronotum in female and slightly beyond posterior margin in male, funicle longer than scape in both sexes; antennal club very long and slender, 2.0–3.0 times longer than wide; female frons broadly concave, shining with a fringe of long setae on vertex, these setae extending nearly to epistomal margin; frons of male convex, granulate; length 1.2–1.7 mm; Haiti, Puerto Rico, Virgin Islands ..... *P. securigerus* (Blackman) (p. 98)
- Antenna not extending to posterior margin of pronotum; antennal club less than 2.0 times longer than wide; frons of male and female variable, not as above ..... 4
- 4(3). Length greater than 1.0 mm ..... 5
- Length 1.0 mm or less ..... 16
- 5(4). Elytral declivity broadly convex, with a median row of distinct, rounded to acute granules in each interstriae ..... 6
- Elytral declivity more narrowly convex, interstriae not granulate or with minute granules ... 8
- 6(5). Granules in declivital interstriae of both sexes larger, more than half as long as interstitial width, acute at tip, all of equal size from base of declivity to apex; declivital surface smooth and shining between granules and punctures; male frons convex, dull, minutely reticulate, without median fovea; length 1.4–1.5 mm; Dominican Republic ..... *P. muricatus* Bright, sp. nov. (p. 97)
- Granules in declivital interstriae smaller, less than half as long as interstitial width, rounded at tip, either all of equal size or those on or near declivital base larger; length less than 1.4 mm ..... 7
- 7(6). Interstitial granules at base of declivity of both sexes distinctly larger than those on lower portion of declivity, those in male larger than those in female, rounded at apex; declivital surface rugose, less shining between granules and punctures; declivital scales narrow, 4.0–5.0 times longer than wide; male frons with a distinct, median fovea in middle; length 1.3 mm; Puerto Rico, Virgin Islands ..... *P. granulatus* Bright, sp. nov. (p. 89)
- Declivital granules all of equal size; declivital surface smooth, shining between granules; declivital scales very broad, 2.0 times longer than wide; frons convex, transversely impressed above epistoma with a faint, longitudinal carina; length 1.3 mm; Cuba ..... *P. smithi* Bright, sp. nov. (p. 99)
- 8(5). Apical margin of sternite 4 of female slightly elevated, acutely margined; apex of sternite 5 of female narrowly mucronate, acutely margined; female frons deeply concave, shining; length 1.2 mm; Guadeloupe ..... *P. acutus* Bright, sp. nov. (p. 86)

- Apical margin of sternite 4 of female not elevated or acutely margined; apex of sternite 5 of female mucronate or not; female frons concave or convex ..... 9
- 9(8). Female frons deeply concave from epistoma to well above eyes, brightly shining, glabrous or with minute setae; female scape longer than funicle, with a brush of very long setae; antennal club elongate, 2.2 times longer than wide; male frons convex; length 1.1–1.5 mm ..... 10
- Female frons convex to concave, if concave, then with setae at lateral angles; male frons variable ..... 13
- 10(9). Male declivity with a row of very long, narrow scales in each interstriae, scales on female declivity much shorter, equal to or slightly longer than interstitial width, narrow to broad, all of equal length ..... 11
- Male declivity with interstitial scales shorter than interstitial width, narrowly flattened, similar in size to those on disc; scales on female declivity similar ..... 12
- 11(10). Male declivity with long, spatulate scales on interstriae 3–6 and on declivital base; female declivital scales narrow, almost hairlike, separated in row by a distance greater than their length; declivital interstriae without granules; female length 1.3 mm, male length 1.1 mm; Cuba ..... *P. insularis* (Blackman) (p. 91)
- Male declivity with long, narrow scales on all interstriae, these longer on upper half; female declivital scales broad, close, separated in row by a distance less than their length; female length 1.3 mm, male length 0.9 mm; Dominican Republic ..... *P. trunculus* Bright, sp. nov. (p. 100)
- 12(10). Female frons bearing two, very small, longitudinal carina on median portion just above epistoma (visible at 200×); male frons flattened, weakly concave, with a small fovea but without impressed line; antennal club 1.2 times longer than wide; body slender, length 1.3 mm, 2.9 times longer than wide; Curaçao ..... *P. cracentis* Bright, sp. nov. (p. 88)
- Female frons not as above; male frons convex, with a small fovea and a short, impressed line in middle; antennal club 1.5 times longer than wide; body stouter, length 1.5 mm, 2.6 times longer than wide; Dominican Republic ..... *P. amoenus* Bright, sp. nov. (p. 87)
- 13(9). Apex of last visible sternite slightly projecting, arcuate, narrowly margined; length 1.0 mm; Dominican Republic ..... *P. marginatus* Bright, sp. nov. (p. 94)
- Apex of last visible sternite evenly rounded, not margined or projecting ..... 14
- 14(13). Female frons deeply concave, shining, with a sparse brush of upward-pointing long setae on each lateral angle; female length 1.3–1.6 mm; Antigua, Guadeloupe, Montserrat ..... *P. lautus* Bright, sp. nov. (p. 92)
- Female frons flattened to convex, not deeply concave; length less than 1.5 mm ..... 15
- 15(14). Elytral striae with large, deep, obvious punctures; interstitial scales of male as long as or longer than interstitial width, scales 2.0 times longer than wide; male length 1.1–1.2 mm; Guadeloupe ..... *P. guadeloupensis* Bright, sp. nov. (p. 89)
- Elytral striae with obscure, shallow punctures; interstitial scales of male shorter than interstitial width, scales as long as wide; length of male 1.3 mm, female length 1.4 mm; Dominican Republic ..... *P. caribbeanensis* Bright, sp. nov. (p. 87)
- 16(4). Elytral declivity of male with short, very broad interstitial scales, these shorter than interstitial width; anterior margin of pronotum armed with six serrations, median pair larger; male length 0.9 mm; Bahamas (Great Inagua Island) ..... *P. leptus* Bright, sp. nov. (p. 92)
- Elytral declivity of male not bearing very broad interstitial scales; serrations on anterior margin of pronotum variable, not as above ..... 17

- 17(16). Female frons transversely impressed above epistoma, distinctly convex above impression, surface of impression shining, surface of convex area densely, minutely granulate; elytral scales short, very narrow, hairlike; length 0.9 mm; Dominican Republic ..... *P. masneri* Bright, sp. nov. (p. 95)  
 — Female frons weakly to deeply concave; elytral scales broad, flattened ..... 18
- 18(17). Elytral surface finely granulate-rugose, striae not discernable; female antennal club unusually large, longer than funicle or scape; female frons usually with a faint, longitudinal carina on lower portion; male length 0.9 mm, female length 1.0 mm; Dominican Republic ..... *P. incertissimus* Bright, sp. nov. (p. 90)  
 — Elytral surface with distinct to indistinct stria punctures; antennal club of female smaller than above; female frons without a carina on lower portion ..... 19
- 19(18). Female frons weakly concave, with an arcuate fringe of short setae at upper eye level; male frons flattened, smooth and shining below level of antennal insertion, minutely rugose above; length 0.8–0.9 mm; Dominican Republic ..... *P. perexiguus* Bright, sp. nov. (p. 97)  
 — Female frons deeply concave, smooth and shining, without setae at upper eye level; male frons convex, minutely rugose over entire surface; length 0.8–0.9 mm; Montserrat ..... *P. minutissimus* Bright, sp. nov. (p. 96)

***Pseudothysanoes acutus* Bright, sp. nov.**

Figure 58.

**Type Material.** HOLOTYPE (female) labeled: “GUADELOUPE: Basse Terre, Gourbeyre, FEB 2003, J. Touroult” / “HOLOTYPE *Pseudothysanoes acutus* D. E. Bright 2016” (WIBF [CNCI]). PARATYPE (1) labeled: “GUADELOUPE: Basse T., Gourbeyre, Champfleury, 31 DEC 2002, on Inga, J. Touroult” (WIBF).

**Description (Female).** Length 1.2 mm, 2.5 times longer than wide; light reddish-brown. Frons deeply concave nearly from eye to eye and from epistoma to well above eyes, acutely margined laterally; surface moderately shining, with fine, obscure punctures and very short, fine setae; epistoma with a few, scattered, short setae. Antennal scape club-shaped, longer than funicle or club, with a few long setae; pedicel slightly larger than funicle; club 1.5 times longer than wide, sutures obsolete, not readily visible. Pronotum as long as wide, widest at middle; sides weakly arcuate; anterior margin broadly rounded, without serrations; anterior slope dull, minutely reticulate, with scattered, small, obscure asperities and widely scattered, hairlike setae; posterior area weakly shining, reticulate, with scattered, very fine setae. Elytra 1.6–1.7 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae not impressed, very obscure, with shallow, indistinct punctures; discal interstriae obscure, apparently slightly wider than striae, moderately shining, with numerous minute, impressed punctures and a few scattered, erect, narrowly flattened scales. Declivity broadly convex; striae very weakly impressed, punctures as on disc; interstriae with a median row of short, erect, narrowly flattened scales, these as long as interstitial width. Margin of fourth abdominal sternite slightly elevated and acutely margined.

**Male.** Unknown.

**Distribution.** This species is known from Guadeloupe.

**Etymology.** From *acutus*, Latin for sharp, pointed, referring to the sharply margined abdominal sternite 4.

**Comments.** Females of this species may be recognized by the slightly elevated and acutely margined apical margin of sternite 4, by the narrowly mucronate apex of sternite 5, by the deeply concave frons of the female and by the size.

***Pseudothysanoes amoenus* Bright, sp. nov.**

Figure 59.

**Type Material.** **HOLOTYPE** (female) labeled: “DOMINICAN REPUBLIC: La Altagracia, Parque del Este, 2.9 km SW Boca de Yuma, 18.21.51N, 68.37.05W, 11 m, 28 May 2004” / “J. Rawlins, C. Young, C. Nunez, J. Fetzner, semi humid dry forest, limestone, uv light, Sample 52114” / “HOLOTYPE *Pseudothysanoes amoenus* D. E. Bright 2016” (CMNH). **ALLOTYPE** labeled: “DOMINICAN REPUBLIC: La Altagracia, Parque del Este, Caseta Guaraguao, 4.4 km SE Bayahibe, 18.19.59W, 68.48.42W, 3 m., 26–27 May 2004” / “C. Young, J. Rawlins, J. Fetzner, C. Nunez, semi humid forest near sea, limestone, yellow pan trap, Sample 61164” / “ALLOTYPE *Pseudothysanoes amoenus* D. E. Bright 2016” (CMNH).

**Description (Female).** Length 1.5 mm, 2.6 times longer than wide; light reddish-brown. Frons deeply concave from eye to eye and from epistoma to well above eyes, sharply margined laterally; surface brightly shining, with fine, obscure punctures and very short, fine setae except on a small area just above epistoma; epistoma with a tuft of sparse setae at each lateral margin, these extending almost to tips of mandibles. Antennal scape club-shaped, longer than funicle or club, with a dense brush of long setae; pedicel more than half as long as funicle; club 1.5 times longer than wide, sutures obsolete, not readily visible. Pronotum as long as wide, widest at middle; sides weakly arcuate; anterior margin broadly rounded, without serrations; anterior slope with scattered, moderately-sized asperities and hairlike setae; posterior area shining, reticulate, with scattered, fine setae and small, narrowly flattened scales. Elytra 1.4 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae not impressed, with large, close, distinct punctures; discal interstriae narrower than striae, shining, with numerous minute, impressed punctures. Declivity broadly convex; striae very weakly impressed, punctures as on disc; each interstriae with a median row of short, erect, narrowly flattened scales, each of these with a small, distinct granule at base.

**Male.** Length 1.3 mm, 2.8 times longer than wide. Frons broadly convex, with a small, longitudinally impressed fovea at middle; surface minutely rugulose and reticulate, dull, vestiture short, inconspicuous except along epistomal margin where setae are long, almost reaching tip of mandibles. Antenna as in female except scape glabrous and club broader, as long as wide. Pronotum as in female except anterior margin distinctly serrate. Elytra as in female except 1.6 times longer than wide. Declivity as in female.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** From *amoenus*, Latin for pleasant or delightful, referring to the appearance of the specimens.

**Comments.** Females of this species resemble those of *P. insularis* but differ by having narrower elytral scales, by the hairlike setae on the anterior slope of the pronotum, by the shorter setae on the antennal scape and by other characters mentioned in the description. Males of *P. amoenus* differ by the much shorter scales on the declivity and by other characters mentioned in the above description.

***Pseudothysanoes caribbeanensis* Bright, sp. nov.**

Figure 60.

**Type Material.** **HOLOTYPE** (male) labeled: “Bani, 65 m, 4.31.1972” / “REP. DOMINIC., J. and S. Klapperich” / “HOLOTYPE *Pseudothysanoes caribbeanensis* D. E. Bright 2016” (CNCI). **ALLOTYPE** labeled with same data as holotype except date is 4.11.1972 plus my allotype label (CNCI). **PARATYPE** (1) labeled: “DOMINICAN REPUBLIC: Province Pedernales, 13.5 km N Cabo Rojo, 140 m, 21 AUG-10 SEP 1988, flight intercept trap, M. A. Ivie, T. H. Philips and K. A. Johnson” (WIBF).

**Description (Female).** Length 1.4 mm, 2.6 times longer than wide; light reddish-brown. Frons slightly flattened from epistoma to well above eyes; surface shining, finely, sparsely rugulose; epistoma with a few

long setae, these extending halfway to tips of mandibles. Antennal scape club-shaped, longer than funicle, with a few long setae; pedicel more than half as long as funicle; club very slightly longer than wide, sutures obsolete, not readily visible. Pronotum as long as wide, widest at middle; sides weakly arcuate; anterior margin broadly rounded, without serrations; anterior slope with scattered, moderately-sized asperities; posterior area shining, reticulate, with scattered, long, fine setae. Elytra 1.7 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; striae not impressed, with distinct punctures; discal interstriae as wide as striae, shining, rugulose; interstriae 1, 2 and 3 with a median row of erect, narrowly flattened scales, these slightly longer than interstitial width. Declivity convex; strial punctures as on disc; each interstriae with a median row of moderately long, erect, flattened scales.

**Male.** Length 1.3 mm, 2.6 times longer than wide. Frons as in female, except with a very fine, longitudinal, impressed line. Antennal funicle longer than scape; club 1.5 times longer than wide. Pronotum as in female except anterior margin indistinctly serrate. Elytra as in female except 1.7 times longer than wide and interstitial scales much broader and shorter. Each declivital interstriae with a median row of short, broad scales, these shorter than scales on elytral disc and shorter than interstitial width.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** This species is named for the geographic distribution.

**Comments.** Adults of this species resemble those of *P. guadeloupensis* but differ by the more obscure, shallow punctures in the elytral striae, by the shorter interstitial scales of the male and by the slightly larger size of the male.

***Pseudothysanoes cracentis* Bright, sp. nov.**

**Type Material.** **HOLOTYPE** (female) labeled: **CURAÇAO:** Christoffel Park, Northern Route Cave Trail, 12°21'06"N, 69°04'51"W, bl trap, 12 Nov. 2014, R. Turnbow" / "HOLOTYPE *Pseudothysanoes cracentis* D. E. Bright 2016" (RHTC [FSCA]). **ALLOTYPE** labeled with same data as holotype plus my allotype label (RHTC [FSCA]). **PARATYPES** (3): 2 labeled with same data as holotype (CNCD); 1 labeled: "**CURAÇAO:** Christoffel Park, Woods, 12°21'00"N, 69°06'05"W, bl trap, 13 Nov. 2014, R. Turnbow" (RHTC).

**Description (Female).** Length 1.3 mm, 2.9 times longer than wide; light brown. Frons deeply concave from epistoma to well above upper eye level and laterally from eye to eye; surface brightly shining, smooth, with scattered very fine punctures and fine erect setae, bearing on median area just above epistoma a pair of weakly elevated, longitudinal carina which appear to extend onto mandibles (visible at 200×) with a longitudinal groove between carina. Antennal scape club-shaped, longer than funicle or club, with a dense brush of long setae; pedicel more than half as long as funicle; club 1.2 times longer than wide, sutures obsolete, not readily visible. Pronotum 1.3 times longer than wide, widest at middle; summit distinctly elevated; sides weakly arcuate; anterior margin broadly rounded, without serrations; anterior slope with scattered, moderately-sized asperities and hairlike setae; posterior area shining, reticulate, with scattered, fine setae. Elytra 2.0 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae not impressed, with large, close, distinct punctures, each with a very short seta shorter than diameter of puncture; discal interstriae narrower than striae, shining, each interstriae with a median row of erect, short scales, these shorter than interstitial width, truncate at apex. Declivity broadly convex; striae and interstriae as on disc except interstitial scales slightly longer than those on disc and closer, separated in row by a distance less than length of scale.

**Male.** Length 1.3 mm, 2.8 times longer than wide. Similar to female except frons weakly concave, with a very small, impressed fovea at middle and with a pair of weakly elevated, longitudinal carina as on female except these very obscure, barely visible at 200×; surface shining, with vestiture short, inconspicuous except along epistomal margin where setae are long, almost reaching tip of mandibles. Antenna as in female except scape with a few setae and club broader, as long as wide. Pronotum as in female except anterior margin bearing four serrations. Elytra and declivity as in female.

**Distribution.** This species is known from Curaçao in the Netherlands Antilles.

**Etymology.** From *cracentis*, Latin for slender or graceful, referring to the size of the adults.

**Comments.** Adults of this species may be recognized by the dense brush of long setae on the female antennal scape, by the deeply concave female frons, by the convex elytral declivity and by the size and distribution. Both sexes have the peculiar modification on the lower portion of the frons and this modification is described above in detail and can be seen under high magnification of at least 200×.

The elytra on the male allotype are spread and a small drop of glue has been placed of the junction of the elytra and pronotum to secure the elytra.

***Pseudothysanoes granulatus* Bright, sp. nov.**

Figure 61.

**Type Material.** HOLOTYPE (male) labeled: “Puerto Rico: EDRR site 3, 9/18/2014” / “HOLOTYPE *Pseudothysanoes granulatus* D. E. Bright 2016” (MSUC). PARATYPE (1) labeled: “VIRGIN IS.: Saint John, Est. Lameshur Bay, Reef Bay Trail, 16 July 1994, M. S. Becker, beating” (WIBF).

**Description (Male).** Length 1.3 mm, 2.5 times longer than wide; light reddish-brown. Frons weakly convex, with a distinct, impressed, circular fovea in middle, this fovea slightly smaller than antennal club; surface densely minutely granulate, with abundant, short, slightly flattened, fine setae; epistoma with a very few scattered, short setae. Antennal scape club-shaped, slightly longer than funicle, with a few long setae; pedicel half as long as funicle; club 1.5 times longer than wide, sutures obsolete, not readily visible. Pronotum as long as wide, widest at middle; sides broadly arcuate; anterior margin broadly rounded, with six very small serrations; anterior slope dull, minutely reticulate, with scattered, small, obscure asperities and widely scattered, hairlike setae; posterior area weakly shining, minutely reticulate, with scattered, very small granules and very small, fine, narrow scales. Elytra 1.5 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae not impressed, with deeply impressed, large, distinct punctures; discal interstriae narrower than striae, moderately shining, minutely rugose, interstriae 1 and 2 with a median row of erect, narrowly flattened scales, these as long as interstitial width, remaining interstriae without scales (rubbed?); interstriae on posterior portion of disc at declivital base with a median row of small, but distinct granules, these increasing in size on declivity. Declivity broadly convex; striae weakly impressed, punctures as on disc; each interstriae with a median row of longer, erect, narrowly flattened scales, these slightly longer than interstitial width and with distinct, rounded granules; interstriae 9 slightly elevated, armed with larger granules thus appearing serrate.

**Female.** Unknown.

**Distribution.** This species is known from Puerto Rico and Saint John in the U. S. Virgin Islands.

**Etymology.** From *granulum*, diminutive of *granum*, Latin for small pellet, referring to the granulate appearance of the elytral interstriae.

**Comments.** Males of this species may be recognized by the larger interstitial granules on and near the base of the declivity, by the much smaller declivital granules on the lower portion of the declivity, by the small but distinct fovea in the middle of the frons and by the size and distribution. The one paratype is similar to the holotype but has slightly smaller granules on the declivital base.

***Pseudothysanoes guadeloupensis* Bright, sp. nov.**

Figure 62.

**Type Material.** HOLOTYPE (male) labeled: “GUADELOUPE: Basse T., Gourbeyre, Palmiste, 05–20 JAN 2003, J. Touroult” / “HOLOTYPE *Pseudothysanoes guadeloupensis* D. E. Bright 2016” (WIBF [CNCI]). PARATYPES (2): 1 labeled with same data as holotype (WIBF); 1 labeled: “2 localities mixed

in shipping" / "GUADELOUPE, (BT) Foret de Matouba, (Les Marches), 26.XI.1965" / "GUADELOUPE, (BT) Bouillante, Faux Pitons de Bouillante, 7.VII.1965" (CNCI).

**Description (Male).** Length 1.1–1.2 mm, 2.3 times longer than wide; light reddish-brown. Frons weakly convex; surface shining, minutely reticulate; epistoma with a row of setae, these extending almost to tips of mandibles. Antennal scape narrowly club-shaped, longer than funicle or club, without setae; pedicel less than half as long as funicle; club 1.3 times longer than wide, sutures obsolete, not readily visible. Pronotum very slightly wider than long, widest at base; sides weakly arcuate; anterior margin narrowly rounded, with six distinct serrations; anterior slope with scattered, moderately large asperities; posterior area dull, minutely reticulate, with scattered, fine setae. Elytra 1.5 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; striae moderately impressed, with large, deeply impressed, distinct punctures; discal interstriae very slightly elevated, weakly convex, narrower than striae, rugulose, each interstriae with a median row of sparse, erect, flattened scales, these slightly longer than interstitial width, each scale with a distinct, moderately large granule at base. Declivity convex; striae and interstriae as on disc except interstitial scales more abundant, broader.

**Female.** Unknown.

**Distribution.** This species is known from Guadeloupe.

**Etymology.** This species is named for the geographic location of the type series.

**Comments.** Males of this species may be recognized by the elytral striae marked by large, deep, obvious punctures, by the interstitial scales of male which are as long as or longer than the interstitial width and 2.0 times longer than wide and by the size and distribution.

***Pseudothysanoes incertissimus* Bright, sp. nov.**

Figure 64.

**Type Material.** **HOLOTYPE** (female) labeled: "DOMINICAN R., via Canada, ON., Thunder Bay, 12.II.2008, wood with bark from Mamajuana, R. Nisbet, CFIA07-1000100" / "HOLOTYPE *Pseudothysanoes incertissimus* D. E. Bright 2016" (CNCI). **ALLOTYPE** labeled with same data as holotype plus my allotype label (CNCI). **PARATYPES** (3): labeled with same data as holotype (CNCI, WIBF).

**Description (Female).** Length 1.0 mm, 2.7 times longer than wide; light reddish-brown. Frons slightly concave from eye to eye and from epistoma to above upper level of eyes, sharply margined laterally, with a fine, obscure, longitudinal carina or impunctate, longitudinal line on lower portion; surface moderately shining, minutely reticulate, with fine, obscure punctures, glabrous; epistoma with row of fine setae, these extending almost to tips of mandibles. Antennal scape club-shaped, as long as funicle, with a few long setae; club longer than scape or funicle, 1.5 times longer than wide, sutures obsolete, not readily visible. Pronotum as long as wide, widest at base; sides weakly arcuate; anterior margin broadly rounded, without serrations; anterior slope with scattered, moderately-sized asperities and very small, narrow scales; posterior area moderately shining, reticulate, with scattered, fine, impressed punctures and very small, flattened scales. Elytra 1.8 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; entire discal surface shining, appearing minutely granulate-rugose, striae punctures very obscure, not readily visible at 96x, punctures marked by rows of very small setae; discal interstriae 1, 2, 3, 5, 7 and 9 each with a median row of erect, narrow scales, these as long as distance between rows. Declivity convex; striae punctures as on disc; each interstriae with a median row of erect, narrowly flattened scales, these half as long as distance between rows and with a row of minute granules.

**Male.** Length 0.9 mm, 2.3 times longer than wide. Frons very slightly, narrowly, transversely impressed above epistoma, slightly convex above, with a very small, median fovea just above epistoma; surface dull, minutely reticulate; vestiture short, inconspicuous except along epistoma where setae are long and almost conceal mandibles. Antenna as in female except scape glabrous and club broader, 1.5 times longer than wide. Pronotum as in female except anterior margin distinctly serrate. Elytra as in

female but stouter, 1.5 times longer than wide; each declivital interstriae with a median row of very long, erect, narrow scales, these longer than scales on elytral disc and much longer than interstitial width.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** From *incertus*, Latin for uncertain or doubtful, referring to the doubtful geographic distribution.

**Comments.** Among the four species treated in this monograph with females 1.0 mm or less in length, adults of this species may be distinguished by the presence of an obscure, longitudinal carina or smooth line on the lower portion of the frons (absent in one paratype), by the larger antennal club, by the minutely granulate-rugose elytral surface with very obscure to obsolete striae punctures and by the narrow declivital scales. The male may be recognized by the small size and by the longer declivital scales.

Unfortunately, this species is only known by five specimens intercepted at Ottawa, Ontario, Canada, in wood originating from the Dominican Republic.

### ***Pseudothysanoes insularis* (Blackman)**

*Cryptocleptes insularis* Blackman 1943b: 359.

*Pseudothysanoes insularis*: Wood and Bright 1992: 414.

**Description (Female).** Length 1.3 mm, 2.4 times longer than wide; light reddish-brown. Frons deeply concave from eye to eye and from epistoma to well above eyes, sharply margined laterally; surface brightly shining from epistoma to vertex, with fine, obscure punctures, glabrous; epistoma with a tuft of setae at each lateral margin, these extending almost to tips of mandibles, margins below antennal insertions with setae. Antennal scape club-shaped, longer than funicle or club, with a dense brush of long setae; pedicel more than half as long as funicle; club 2.0 times longer than wide, suture 1 very strongly arcuate, remaining sutures obsolete, not readily visible. Pronotum as long as wide, widest at base; sides weakly arcuate; anterior margin broadly rounded, with very small serrations; anterior slope with scattered, moderately-sized asperities and narrow, spatulate scales; posterior area shining, reticulate, with scattered, fine setae and small, flattened scales. Elytra 1.7 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae not impressed, with distinct punctures; discal interstriae as wide as striae, rugulose, glabrous except interstriae 1 and 2 bear a row of scales extending from base to apex. Declivity convex; striae punctures as on disc; each interstriae with a row of narrow, almost hairlike scales, these separated in row by a distance greater than their length, each scale with a distinct, moderately large granule at base.

**Male.** Length 1.1 mm, 2.2 times longer than wide. Frons broadly, transversely impressed above epistoma, slightly convex above; surface smooth, shining on transversely impressed portion, dull and minutely reticulate above, vestiture short, inconspicuous except along epistoma where setae are long and almost conceal mandibles. Antenna as in female except scape glabrous and club broader, 1.5 times longer than wide. Pronotum as in female except anterior margin distinctly serrate. Elytra as in female but stouter, 1.3 times longer than wide; declivital interstriae with long, spatulate scales on interstriae 3–6 and on declivital base, these much longer than scales on elytral disc and much longer than interstitial width, lower half of interstriae 1, 2 and 3 each with a row of very short, close scales.

**Distribution.** This species is known from Cuba.

**Specimens examined. CUBA:** Cayamas, 11.5 / E. A. Schwarz (2–USNM).

**Comments.** Adults of this species are very similar to those of *P. trunculus*. Females may be recognized by the concave, glabrous frons, the surface of which is smooth and shining from the epistoma to the vertex and by the very slender, widely spaced scales on the elytra. Males may be distinguished by the very long, narrow scales on declivital interstriae 3–6 and by the convex, transversely impressed frons.

***Pseudothysanoes lautus* Bright, sp. nov.**

Figure 63.

**Type Material.** **HOLOTYPE** (female) labeled: "WEST INDIES: **ANTIGUA**: Christian Valley, blacklight trap, 6–8.VII.1991, FAO Insect Survey" / "HOLOTYPE *Pseudothysanoes lautus* D. E. Bright 2016" (FSCA). **PARATYPES** (2): 1 labeled: "**MONTSERRAT**: Cassava Ghaut, Beattie House, 16°45.91'N, 62°12.95'W, 21–30 June 2002, 632 ft., M. A. Ivie, uv light" (WIBF); 1 labeled: "W. I.: **GADELOUPE**, Bas. Ter.: Rivière Sens, Sentier Houëlement, N15°58.93, W61°42.62" / "Humid forest FIT, 80 m, 19–31.V.2012, S. Peck" (SBPC).

**Description (Female).** Length 1.3–1.6 mm, 3.2 times longer than wide; light reddish-brown. Frons deeply concave from epistoma to well above eyes; surface brightly shining, smooth, with a sparse brush of upward pointing, yellowish setae on each lateral angle; epistoma with a clump of long, yellowish setae at each lateral angle, these extending to tips of mandibles. Antennal scape club-shaped, slightly shorter than funicle and longer than club, with a dense brush of long setae; funicle with long setae; club 1.2 times longer than wide, sutures obsolete, not readily visible. Pronotum very slightly longer than wide, widest at base; sides weakly arcuate; anterior margin broadly rounded, without serrations; anterior slope with scattered, very small asperities, surface between asperities dull, reticulate; posterior area moderately dull, minutely reticulate, glabrous. Elytra 2.0 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae not impressed, with close, distinct punctures, each puncture bearing a minute seta; discal interstriae narrower than striae, reticulate, each with a median row of erect, short, flattened scales extending from base to apex, these as long as interstitial width. Declivity evenly convex; all interstriae devoid of granules and with scales slightly longer than those on disc; each striae puncture bearing a slightly longer seta than punctures on disc.

**Male.** Unknown.

**Distribution.** This species is known from Antigua, Guadeloupe and Montserrat.

**Etymology.** From *lautus*, Latin for brilliant or elegant, referring to the appearance of the female.

**Comments.** The female is easily recognized by the deeply concave, brightly shining frons which bears a sparse brush of long, yellowish, upward pointing setae at each lateral angle, by the dense brush of long setae on the antennal scape, by the even rows of short interstitial setae in all interstriae and by the evenly convex elytral declivity with scales similar to those in discal interstriae.

***Pseudothysanoes leptus* Bright, sp. nov.**

**Type Material.** **HOLOTYPE** (male) labeled: "**BAHAMAS: Great Inagua**, north coast road, N21.10813, W73.60196, 13.VII.2007, Thomas, Turnbow & Smith" / "blacklight trap in mature mangrove forest" / "HOLOTYPE *Pseudothysanoes leptus* D. E. Bright 2016" (FSCA).

**Description (Male).** Length 0.9 mm, 2.2 times longer than wide; reddish-brown. Frons broadly flattened, with a distinct, large, median fovea halfway between epistomal margin and upper level of eyes; surface shining, minutely reticulate, with scattered, short setae and with a few, long, downward-pointing setae on epistomal margin. Antennal scape club-shaped, as long as funicle, without setae; club oval, 1.5 times longer than wide, without visible sutures on anterior face and with a fringe of longer setae around periphery. Pronotum 1.15 times wider than long, widest at base; sides broadly arcuate; anterior margin narrowly rounded, bearing six serrations, median pair larger; anterior slope with numerous, large, acute serrations and long, narrowly flattened setae; posterior surface shining, smooth, with a few, fine, minute punctures and scattered setae. Elytra 1.2 times longer than wide; sides arcuate on anterior three-fourths, apex narrowly rounded; discal striae not impressed, punctures very small, each with a distinct, small seta longer than diameter of puncture; discal interstriae broad, 2.0–4.0 times wider than striae, posterior half of each interstriae with a median row of broad, small scales, these shorter than interstitial width.



**Figures 58–66.** Declivities of *Pseudothysanoes* spp. **58)** *P. acutus*. **59)** *P. amoenus*. **60)** *P. caribbeanensis*. **61)** *P. granulatus*. **62)** *P. guadeloupensis*. **63)** *P. lautus*. **64)** *P. incertissimus*. **65)** *P. minor*. **66)** *P. minutissimus*.

Declivity evenly convex; striae and interstriae as on posterior portion of disc, but with a median row of minute granules in each interstriae.

**Female.** Unknown.

**Distribution.** This species is known from the Bahamas.

**Etymology.** From *leptos*, Greek for small, referring to the small size of the male.

**Comments.** Only the male of this species is known. It was compared to all the males of species treated herein and no match was found. The male may be distinguished by the very small size and by the short, very broad interstitial scales.

***Pseudothysanoes magnispinatus* Bright and Torres**

Figures 68, 69.

*Pseudothysanoes magnispinatus* Bright and Torres 2006: 399; Bright 2014: 118.

**Description (Male).** Length 1.5 mm, 2.4 times longer than wide; reddish-brown. Frons evenly convex, very weakly concave just above epistomal margin; surface weakly shining, densely granulate, with several slightly larger, acute granules on upper margin of concave area and smaller granules over remainder of surface and with a group of long, downward-pointing setae on epistomal margin. Antennal club oval, 1.5 times longer than wide, without visible sutures on anterior face and with a fringe of longer setae around periphery. Pronotum as long as wide; sides broadly arcuate; anterior margin broadly rounded with a row of 10 acute serrations; anterior slope dull, with numerous, scattered serrations; posterior surface very weakly transversely concave, with numerous acute granules to base, these smaller than serrations on anterior slope and with scattered, erect, short, narrow, yellowish scales. Elytra 1.5 times longer than wide; sides parallel on anterior three-fourths; discal striae weakly impressed, becoming slightly more strongly impressed near declivity, punctured in regular rows, punctures very large, distinctly impressed; discal interstriae weakly convex, mostly distinctly narrower than striae, each with a median row of erect, yellowish scales, these mostly as long as width of interstriae. Declivity abrupt, nearly vertical, apex slightly mucronate; interstriae 1 with one very small, acute tubercle at upper margin of declivity; interstriae 2 with a larger tubercle on declivital margin; interstriae 3 with a very large, acute, laterally flattened spine on upper third; interstriae 4, 5 and 6 each with a single acute tubercle on upper margin of declivity; interstriae 7 with a large, acute, laterally flattened spine, this slightly smaller than spine on interstriae 3; interstriae 8 with a small, acute serration on base; interstriae 9 with another very large, acute, incurved spine on base; declivital face glabrous except for a row of scales in interstriae 1, a few scales at base of each interstriae and scattered scales on the large spines.

**Female.** Not recognized in the material examined.

**Distribution.** This species is known from Cayman Brac in the Cayman Islands, Martinique, Puerto Rico, Saint Lucia and Buck Island in the U. S. Virgin Islands.

**Specimens examined.** **CAYMAN ISLANDS: Cayman Brac**, 5 and 8 June 2008, R. Turnbow (2-RHTC). **MARTINIQUE:** 2 km NW Diamant, 5 ft., 8–23.VII.2010 / thorn forest flight intercept trap, S. and J. Peck (1-SBPC). **PUERTO RICO:** Km. 3, Sabana Llana PR #510, Juana Díaz, XI.26.2013, *Persea americana* (1-PRDA); Guaynabo, 15.XII.95, J. Torres / ex light trap, #141 (1-USNM). **SAINT LUCIA:** Praslin, 50 m, 25.VII.2007 / lowland, woodland ravine, S. and J. Peck (1-SBPC). **VIRGIN ISLANDS (U. S.): Buck Island**, Buck Island Reef National Monument, Sept.10–Oct. 1, 1993, Z. M. Hillis, flight intercept trap (4-CNCI, WIBF).

**Comments.** The male of this species is easily recognized by the presence of three large spines on each elytron on the declivity. The female is unknown or unrecognized in the unidentified specimens of *Pseudothysanoes* examined.

***Pseudothysanoes marginatus* Bright, sp. nov.**

Figure 70.

**Type Material.** **HOLOTYPE** (female) labeled: “**DOM. REP.:** Province Pedernales, 24 km N. Cabo Rojo, 61 m, 20 Aug-09 Sept 1988, flight intercept trap, M. A. Ivie, T. K. Philips and K. A. Johnson” / “**HOLOTYPE** *Pseudothysanoes marginatus* D. E. Bright 2016” (WIBF [CNCI]). **PARATYPES** (3), 1 labeled with same data as holotype (WIBF); 1 labeled: “**DOM. REP.:** Pedernales, 4 km W Oviedo, 10 m, arid thorn forest, 28.XI-4.XII.91, intercept trap, Masner and Peck, 91–344” (CNCI); 1 labeled: “**DOMINICAN REPUBLIC:** La Altagracia, Parque del Este. Caseta Guaragua, 4.4 km SE Bayahibe, 18–19–59N, 68–48–42W, 3 m, 26–27 May 2004” / “C. Young, J. Rawlins, J. Fetzner, C. Nunez, semi humid forest near sea, limestone, uv light, Sample 51114” (CMNH).

**Description (Female).** Length 1.0 mm, 2.4 times longer than wide; light reddish-brown. Frons convex, slightly flattened just above epistoma, with a fine, slightly impressed, longitudinal line in center; surface

shining, finely rugose, with fine, yellowish setae on flattened area; epistoma with a row of long, yellowish setae, these extending almost to tips of mandibles. Antennal scape club-shaped, longer than funicle or club, with a dense brush of long setae; club 1.3 times longer than wide, sutures obsolete, not readily visible. Pronotum as long as wide, widest at base; sides weakly arcuate; anterior margin broadly rounded, without serrations; anterior slope with scattered, moderately-sized asperities; posterior area shining, reticulate, with scattered, fine setae. Elytra 1.5 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; striae not impressed, with distinct punctures, each puncture bearing a long seta that is longer than puncture diameter; interstriae as wide as striae, rugulose, each interstriae with a median row of erect, flattened scales, these slightly longer than striae setae. Declivity convex; interstriae as on disc except scales slightly stouter. Apex of last visible sternite slightly projecting, arcuate, narrowly margined.

**Male.** Not recognized in material examined.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** From *margo*, Latin for border or edge, referring to acute margin of last visible sternite.

**Comments.** Adults of this species may be most easily recognized by their small size and by the acutely margined and slightly projecting apical margin of the last visible sternite.

***Pseudothysanoes masneri* Bright, sp. nov.**

**Type Material.** HOLOTYPE (female) labeled: “DOM. REP.: Pedernales, 4 km W Oviedo, 10 m., arid thorn forest, 28.XI-4.XII.91, intercept traps, Masner and Peck, 91-344” / “HOLOTYPE *Pseudothysanoes masneri* D. E. Bright 2016” (CNCI).

**Description (Female).** Length 0.9 mm, 3.1 times longer than wide; light reddish-brown. Frons narrowly, transversely impressed just above epistoma, moderately convex to well above eyes; surface in transversely impressed area brightly shining, smooth, on convex area densely, minutely granulate-reticulate, glabrous; epistoma unmodified. Antennal scape club-shaped, as long as funicle and longer than club, with a sparse brush of long setae; club 1.2 times longer than wide, sutures obsolete, not readily visible. Pronotum as long as wide, widest at middle; sides weakly arcuate; anterior margin broadly rounded, without serrations; anterior slope with scattered, very small asperities; posterior area moderately dull, minutely reticulate, glabrous. Elytra 1.7 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae not impressed, with obscure, small, shallow punctures, each puncture with a very small, hairlike seta; discal interstriae narrower than striae, reticulate, each interstriae with a median row of erect, short, hairlike setae, these slightly longer than striae setae. Declivity convex, all interstriae with setae slightly longer than those on disc.

**Male.** Unknown.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** This species is named for Dr. Lubomere (“Lubo”) Masner, a colleague and friend at the Canadian National Collection of Insects and Arachnids, Ottawa, Ontario and one of the collectors of this species, in recognition of his numerous collections in the West Indies.

**Comments.** Females of this species may be recognized by the shining, narrowly, transversely impressed area of the frons just above the epistomal margin and by the moderately convex area above the transverse impression which is densely, minutely, granulate-reticulate and dull. In addition, the hairlike elytral setae and the very small size will help in recognizing this species.

***Pseudothysanoes minor* (Blackman)**

Figure 65.

*Cryptocleptes minor* Blackman 1928b: 207.*Pseudothysanoes minor*: Wood and Bright 1992: 415.

**Description (Female).** Length 0.9 mm, 2.5 times longer than wide; reddish-brown. Frons flattened, with short, fine setae directed upwards; epistoma with long setae almost concealing mandibles. Antennal scape shorter than funicle, flattened, with a brush of long setae along upper margin; funicle longer than scape; club as long as funicle, 1.7 times longer than wide, sutures not visible. Pronotum 1.2 times longer than wide, widest behind middle; sides arcuate; anterior margin broadly rounded, without serrations; anterior slope with a few, fine asperities, these nearly concealed by short, stout, clavate setae; posterior area subopaque, finely punctured, with short setae. Elytra 1.7 times longer than wide; sides parallel on basal two-thirds, broadly rounded at apex; striae not impressed, finely punctured; each interstriae with a row of short, wide, suberect scales. Declivity convex, vestiture similar to elytra except scales slightly longer and wider.

**Male.** Length 0.9 mm, 2.3 times longer than wide. Frons convex, subreticulate, with scattered, fine, narrowly flattened setae; epistoma as in female. Antenna as in female except without long setae on scape. Pronotum as in female except anterior margin bearing four serrations and anterior slope with asperities arranged in four concentric rows, each row bordered by a fringe of short, very broad, flattened scales. Elytra and declivity as in female.

**Distribution.** This species is known from Cuba.

**Specimens examined. CUBA:** Hopk. U. S. 270 / Schwarz, Cayamas / *Jacana camarilla* (5-USNM).

**Comments.** This species is known from five specimens. Adults may be recognized by the very short antennal scape and funicle, by the presence of very broad scales bordering the concentric rows of asperities on the pronotum, by the short, broad elytral scales and by the small size.

***Pseudothysanoes minutissimus* Bright, sp. nov.**

Figure 66.

**Type Material. HOLOTYPE** (female) labeled: “**MONTSERRAT:** Ridge above Hope Ghaut, 1051 ft., 16°45.169’N, 62°12.736’W, K. A. Marske and For. Staff, canopy fogging, dawn” / “16 May 2002” / “HOLOTYPE *Pseudothysanoes minutissimus* D. E. Bright 2016” (WIBF [CNCI]). **ALLOTYPE** labeled with same data as holotype plus my allotype label (WIBF [CNCI]). **PARATYPES** (10), 2 labeled with same data as holotype (WIBF); 8 labeled: “**MONTSERRAT:** Fogerty, 16°46.24’N, 62°12.53’W, 22 May 2002, 1224 ft., K. Marske and J. Boatswain, canopy fogging, dawn” (CNCI, WIBF).

**Description (Female).** Length 0.9 mm, 3.3 times longer than wide; light reddish-brown. Frons deeply concave from eye to eye and from epistoma to well above eyes; surface brightly shining, glabrous, upper margin of concavity with a small, slightly elevated callus; epistoma deeply emarginate, unmodified. Antennal scape club-shaped, longer than funicle or club, without obvious setae; pedicel more than half as long as funicle; club narrowly-oval, 1.5 times longer than wide, sutures obsolete, not readily visible. Pronotum as long as wide, widest at middle; sides weakly arcuate; anterior margin broadly rounded, without serrations; anterior slope with scattered, moderately-sized asperities; posterior area dull, minutely reticulate, with scattered, fine setae. Elytra 1.9 times longer than wide; sides parallel on basal three-fourths, apex narrowly rounded; striae not impressed, with obscure, weakly impressed punctures; interstriae narrower than striae, shining, weakly rugulose, mostly glabrous but interstriae 1 and 3 with a few, erect, narrow scales in a median row, these slightly longer than interstitial width. Declivity convex; each interstriae with a distinct median row of very small, flattened scales, each scale with a minute granule at base.

**Male.** Length 0.8 mm, 2.8 times longer than wide. Frons convex, with a fine, longitudinal, slightly impressed line in center; surface dull, minutely reticulate-rugose. Antenna as in female except scape

glabrous. Pronotum as in female except anterior margin with two distinct serrations. Elytra and declivity as in female.

**Distribution.** This species is known from Montserrat.

**Etymology.** From diminutive of *minutus*, Latin for very small, referring to the small size of the adults.

**Comments.** Adults of this species are exceedingly minute and may be distinguished by the deeply concave, glabrous frons of the female, by the presence of distinct rows of interstitial scales on the declivity of both sexes and by the size.

***Pseudothysanoes muricatus* Bright, sp. nov.**

Figure 71.

**Type Material.** HOLOTYPE (female) labeled: “DOMINICAN REPUBLIC: Pr. El Seibo, Loma de Chivo, 7 mi. N. of Pedro Sanchez, 5000', 20.VI.1998, blacklight trap, R. E. Woodruff: H. Freytag” / “HOLOTYPE *Pseudothysanoes muricatus* D. E. Bright 2016” (REWC [FSCA]). ALLOTYPE labeled with same data as holotype plus my allotype label (REWC [FSCA]).

**Description (Female).** Length 1.4–1.5 mm, 2.8 times longer than wide; light reddish-brown. Frons broadly flattened from epistomal margin to upper eye level, very slightly concave just above epistomal margin; surface shining, minutely reticulate, with a few, fine, scattered setae; epistoma with a few long, yellowish setae, these extending almost to tips of mandibles. Antennal scape club-shaped, as long as funicle, with a few long setae; club nearly circular, as long as wide, sutures obsolete, not readily visible. Pronotum 1.1 times longer than wide, widest at base; sides broadly arcuate, constricted on anterior fourth; anterior margin broadly rounded, without serrations; anterior slope with scattered, moderately-sized asperities and scattered, short, flattened setae; posterior area dull, reticulate, with widely separated, fine punctures and scattered, fine setae. Elytra 1.6–1.7 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae distinct, not impressed, punctures moderately large, impressed; discal interstriae as wide as striae, glabrous on anterior half, posterior half with erect setae. Declivity convex; striae more deeply impressed than on disc; interstriae convex, each with a median row of small, acute granules and long, erect, narrowly flattened setae.

**Male.** Length 1.4 mm, 2.5 times longer than wide. Frons evenly convex from epistomal margin to vertex; surface moderately shining, minutely reticulate, with scattered, short setae. Antenna as in female except scape with a very few setae. Pronotum as in female except anterior margin distinctly serrate. Elytra as in female but stouter, 1.7 times longer than wide. Declivity convex; striae more deeply impressed than on disc; interstriae convex, each with a median row of distinct, acute granules, these half as long as interstitial width and a median row of narrowly flattened, erect setae.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** From *muricatus*, Latin for roughened, referring to roughened surface of the elytral interstriae.

**Comments.** Adults of this species may be distinguished by the large granules in the declivital interstriae, by the smooth surface between the granules of the declivity and by the convex, minutely reticulate male frons. Adults are 1.4–1.5 mm in length.

***Pseudothysanoes perexiguus* Bright, sp. nov.**

Figure 67.

**Type Material.** HOLOTYPE (female) labeled: “Dom. Republic: San Cristobal Province, Borbon Cuevas Pomier, trop. decid. for. FIT, 13–28.VII.95, S. and J. Peck, 200 m, 95–23” / “HOLOTYPE *Pseudothysanoes perexiguus* D. E. Bright 2016” (SBPC [CNCI]). ALLOTYPE labeled with same data as holotype plus my

allotype label (SBPC [CNCI]). **PARATYPES** (4): all labeled with same data as holotype except one dated "28.VII-5.VIII.95" (CNCI, SBPC).

**Description (Female).** Length 0.9 mm, 2.7 times longer than wide; light reddish-brown. Frons deeply concave above epistoma, convex above; surface in concave area brightly shining, finely rugose above with an arcuate row of fine, yellowish setae at upper eye level; epistoma with a row of long, yellowish setae, these extending almost to tips of mandibles. Antennal scape club-shaped, longer than funicle or club, with a few long setae; pedicel more than half as long as funicle; club as long as wide, sutures obsolete, not readily visible. Pronotum as long as wide, widest at base; sides weakly arcuate; anterior margin broadly rounded, without serrations; anterior slope with scattered, moderately-sized asperities and short, flattened scales; posterior area shining, reticulate, with scattered, fine setae. Elytra 1.7 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; striae obscure, punctures very obscure, not readily visible, entire surface dull, minutely reticulate; interstriae marked by rows of sparse, hairlike setae on discal area. Declivity convex, similar to disc, except interstitial scales broader, spatulate.

**Male.** Length 0.8 mm, 1.3 times longer than wide. Frons convex, with a very weak fovea in center; surface dull, minutely reticulate. Antenna as in female, scape with a very few setae. Pronotum as in female except anterior margin distinctly serrate. Elytra as in female but stouter, 1.3 times longer than wide. Declivity convex; each interstriae with scattered, hairlike scales and a median row of short, very broad, erect scales, these shorter and broader than scales on elytral disc.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** From *perexiguus*, Latin for very small, referring to the size of the adult.

**Comments.** Adults of this species may be recognized by the very small size, by the concave frons of the female which has an arcuate row of short setae at upper eye level and by the presence of short, broad, interstitial scales on the male.

This species is recorded as *P. dislocatus* (Blackman) in Bright and Skidmore (2002). Further comparisons made during this study revealed that the two names represented different species. *Pseudothysanoes dislocatus* is not known to occur in the West Indies.

***Pseudothysanoes securigerus* (Blackman)**

Figures 72, 73.

*Chalcohyus securigerus* Blackman 1943b: 364.

*Pseudothysanoes securigerus*: Wood and Bright 1992: 417; Bright and Skidmore 2002: 63; Bright and Torres 2006: 400.

**Description (Female).** Length 1.2–1.7 mm, 2.5 times longer than wide; light to dark reddish-brown. Frons flattened to slightly concave from eye to eye and to well above eye; surface shining, with short, inconspicuous setae over surface, surface often concealed by a brush of very long, yellowish setae that extend from vertex almost to epistoma; epistoma with a dense brush of yellowish setae almost concealing mandibles. Antenna slender, nearly half as long as body; scape club-shaped, bearing a brush of sparse setae; club longer than scape, slender, 2.3 times longer than wide, sutures obsolete. Pronotum 1.1 times longer than wide, widest at base; sides weakly arcuate; anterior margin broadly rounded, not serrate; anterior slope with scattered, moderately-sized asperities; posterior area shining, reticulate, with scattered, fine, narrowly flattened setae. Elytra 1.6 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; striae not impressed, with large, obscure punctures; interstriae as wide as striae, obscurely rugulose, each interstriae with a median row of fine, erect setae, each seta with a minute granule at base. Declivity convex; first three interstriae with a double row of short, erect, flattened scales, remaining interstriae with short hairlike setae.

**Male.** Length 1.3 mm, 2.1 times longer than wide. Frons slightly convex above, transversely impressed above epistoma; surface subopaque, finely granulate-punctate, vestiture short, inconspicuous.

Antenna shorter, club broader than in female, 1.6 times longer than wide. Pronotum as in female except anterior margin serrate. Elytra as in female but stouter, 1.3 times longer than wide.

**Distribution.** This species is known from Florida and in the West Indies from Haiti, Puerto Rico and Saint John in the U. S. Virgin Islands.

**Specimens examined.** **HAITI:** In *Amyris balsamifera* wood / Haiti, XI.11.41 / New York No. 91789 (18-USNM). **PUERTO RICO:** Guánica, various dates, 1996 and 1997, J. Torres or M. Canals, / ex: light trap (12-CNCD); Yauco, February 12, 1934, R. G. Oakley (type series) (4-USNM). **VIRGIN ISLANDS (U. S.): Saint John,** Saint Caneel Bay, Caneel Hill, 240 ft., 17 Dec 1992–02 Jan 1993, VIBFP cols. flight intercept trap (3–WIBF).

**Comments.** Females of this species may be recognized by the very long antenna, by the brush of long setae concealing the frons and by the double row of short scales on the first three declivital interstriae. Males may be recognized by the long antenna which is shorter than on female and by the convex, generally unmodified frons.

The holotype was examined.

***Pseudothysanoes smithi* Bright, sp. nov.**

**Type Material.** **HOLOTYPE** (female) labeled: “CUBA: Cienfuegos Province, Jardín Botánico de Cienfuegos, 22.12179°N, 80.32645°W, 75 m, MV lights, 21–V-2013: A. B. T. Smith, F. Cale-Riqueine, A. Deler-Hernández” / “HOLOTYPE *Pseudothysanoes smithi* D. E. Bright 2016” (CMNO).

**Description (Female).** Length 1.3 mm, 2.6 times longer than wide (elytra separated in holotype); light reddish-brown. Frons slightly convex on upper portion above upper eye level, weakly transversely impressed from epistomal margin to halfway toward upper eye level and bearing a weakly impressed, shining, longitudinal fovea resembling a weakly elevated, longitudinal carina just above epistomal margin, surface on each side of fovea slightly concave; surface, except for fovea, minutely granulate-rugose, with abundant, short, flattened, spatulate setae, each lateral margin of epistoma bearing a tuft of hairlike setae. Antennal scape club-shaped, bearing a brush of sparse setae; club 1.2 times longer than wide, suture 1 transverse, 2 strongly arcuate. Pronotum 1.1 times wider than long, widest slightly behind middle; sides broadly arcuate; anterior margin broadly rounded, with six small serrations; anterior slope minutely reticulate, with scattered, moderately large asperities and widely scattered, narrowly spatulate scales; posterior area dull, minutely reticulate over entire surface, without punctures or granules and with small, fine, narrowly spatulate scales. Elytra 1.3 times longer than wide (elytra separated so measurement is imprecise); sides parallel on basal three-fourths, apex broadly rounded; discal striae not impressed, with deeply impressed, large, distinct punctures; discal interstriae as wide as striae, smooth, shining, devoid of scales. Declivity broadly convex; striae weakly impressed, punctures smaller, more obscure than those on disc; each interstriae with a median row of small, rounded granules and a median row of short, broad scales, these slightly longer than interstitial width and truncate at apex.

**Male.** Unknown.

**Distribution.** This species is known from Cuba.

**Etymology.** Named for Andrew B. T. Smith, one of the collectors of the holotype.

**Comments.** Unfortunately, this species is known only from the female holotype. The females can be recognized by the characteristics of the frons, as outlined above and by the granulate declivital interstriae and by the broad, truncate interstitial scales.

It is remotely possible that the holotype is a female of *P. granulatus* but this conjecture is unlikely. The specimen is larger than those of *P. granulatus*, the antennal characteristics are different and the frons and declivity are different, even taking sexual dimorphism into consideration. Obviously, further collecting concentrating on obtaining host-plant associations and on obtaining larger series is required.

***Pseudothysanoes trunculus* Bright, sp. nov.**

Figures 74, 389, 438, 508.

**Type Material.** **HOLOTYPE** (female) labeled: “DOMINICAN REPUBLIC: Pedernales, Cabo Rojo, em. 13–18 Aug. 1996, R. Turnbow” / “HOLOTYPE *Pseudothysanoes trunculus* D. E. Bright 2016” (RHTC [FSCA]). **ALLOTYPE** labeled with same data as holotype plus my allotype label (RHTC [FSCA]). **PARATYPES** (54): all labeled with same data as holotype except with dates as follows: 15 labeled same as holotype; 20 labeled: “em. 26 December 1996”; 17 labeled: “em. 7 Sept. 1996”; 2 labeled: “em. 11 July 1996” (CNCI, RHTC, WIBF).

**Description (Female).** Length 1.1–1.3 mm, 2.4 times longer than wide; light reddish-brown. Frons deeply concave from eye to eye and from epistoma to well above eyes, sharply margined laterally; surface brightly shining on lower third, densely minutely reticulate from level of upper eye margin to vertex, with fine, obscure punctures, glabrous; epistoma with a tuft of setae at each lateral margin, these extending almost to tips of mandibles, margins below antennal insertions with setae. Antenna as described for *P. insularis*. Pronotum as described for *P. insularis*. Elytra 1.7 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae not impressed, with distinct punctures; discal interstriae as wide as striae, rugulose, glabrous except interstriae 1 and 2 bear a row of short, broad scales. Declivity convex; strial punctures as on disc; each interstriae with a median row of erect, broadly flattened scales, these 2.0 times longer than wide, slightly longer than interstitial width and separated in row by a distance less than their length, each scale with a distinct, moderately large granule at base.

**Male.** Length 0.9 mm, 2.2 times longer than wide. Frons broadly, transversely impressed above epistoma, slightly convex above; surface smooth, shining on transversely impressed portion, dull and minutely reticulate above, vestiture short, inconspicuous except along epistoma where setae are long and almost conceal mandibles. Antenna as in female except scape glabrous and club slightly broader, 1.5 times longer than wide. Pronotum as in female except anterior margin distinctly serrate. Elytra as in female but stouter, 1.3 times longer than wide; each declivital interstriae with a median row of very long, erect, narrow scales, these much longer than scales on elytral disc and much longer than interstitial width, lower half of interstriae 1 and 2 each with a row of very short, close scales.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** From *trunculus*, diminutive of *truncus*, Latin for cut off, referring to the elytral vestiture.

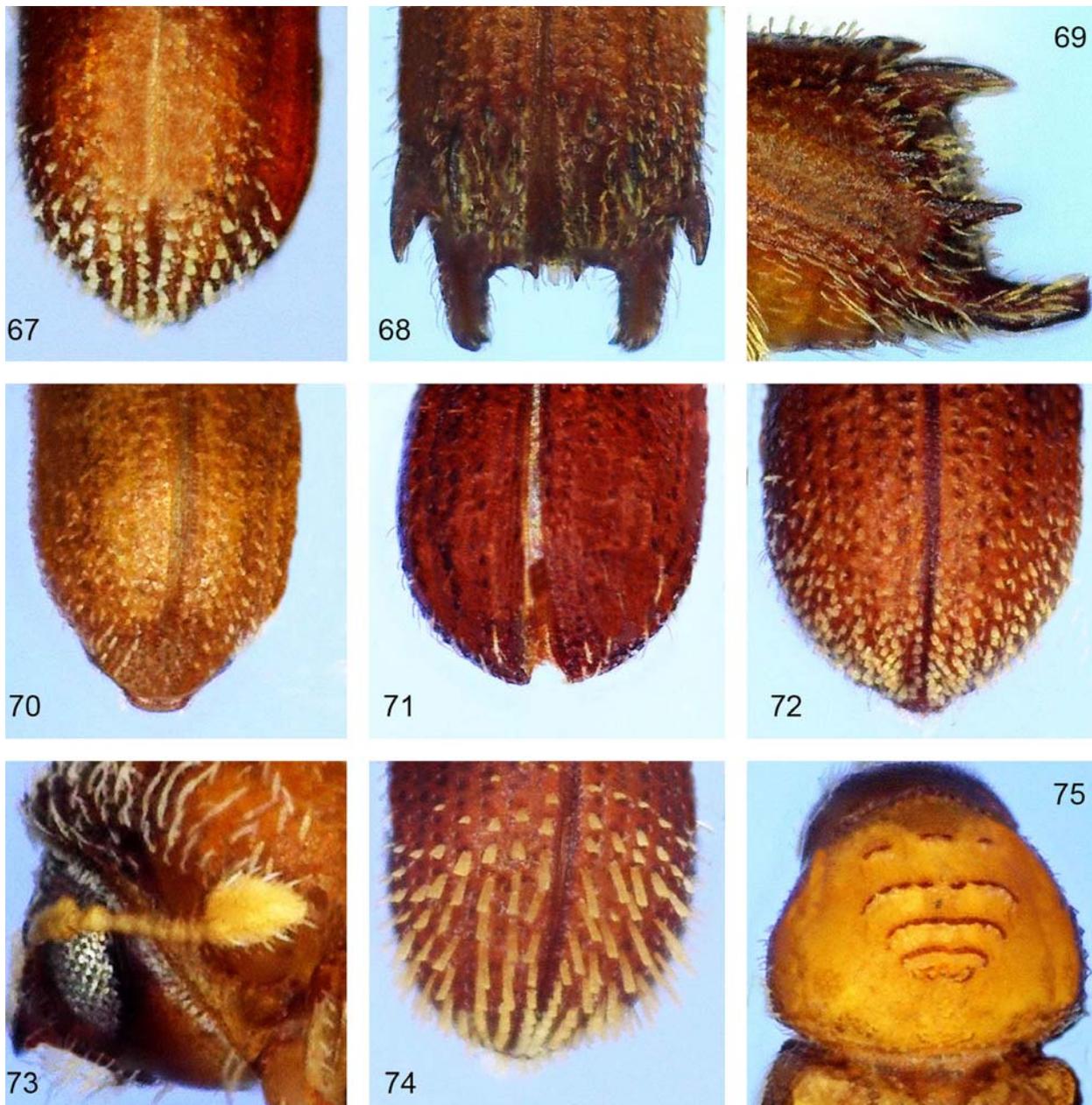
**Comments.** Adults of this species are very similar to those of *P. insularis* but differ by the much shorter, broader, more closely-placed elytral scales in the female and by the different arrangement of declivital scales in the males, as described above.

**Genus *Stevewoodia* Bright**

*Stevewoodia* Bright 2010: 46; Bright 2014: 119.

With the character states of Micracidini as given in the key to tribes and genera but differing from other genera in that adults have a 4-segmented antennal funicle (pedicel excluded), by a solid antennal club with the sutures not visible in the female, but with a median, longitudinal, narrow smooth space that may mark the limits of a strongly arcuate suture and by a very small and slender body which is 0.8–0.9 mm in length, 2.9–3.1 times longer than wide.

**Comments.** This genus was named in honor of the late Dr. Steven Lane Wood, Monte L. Bean Life Science Museum, Brigham Young University, Provo, Utah, USA, the preeminent authority on the systematics and taxonomy of the Scolytidae. Dr. Wood was my major professor while I was a graduate student at Brigham Young University many years ago. He remained a close colleague and friend throughout the years. Dr. Wood passed away in July, 2009.



**Figures 67–75.** Adult features of *Pseudothysanoes* spp. and *Allothenemus*. **67)** Declivity of *P. perexiguus*. **68)** Declivity of *P. magnispinatus*, dorsal. **69)** Declivity of *P. magnispinatus*, lateral. **70)** Declivity of *P. marginatus*. **71)** Declivity of *P. muricatus*. **72)** Declivity of *P. securigerus*. **73)** Antenna of *P. securigerus*. **74)** Declivity of *P. trunculus*. **75)** Pronotum of *A. exquisitus*, dorsal.

Two species are placed in this genus. Adults of both are exceedingly small and the characters are difficult to observe and evaluate. The descriptions below are made with a magnification of 200×.

#### Key to the species of *Steveoodia* in the West Indies

1. Anterior margin of pronotum unarmed; declivital interstitial scales 2.0 times longer than wide, as long as interstitial width; Martinique, Saint Lucia ..... ***S. minutum* Bright** (p. 103)

- Anterior margin of pronotum bearing two small serrations; declivital interstitial scales hairlike, 4.0 times longer than wide, longer than interstitial width; Puerto Rico .....  
 ..... *S. atomus* Bright, sp. nov. (p. 102)

***Stevewoodia atomus* Bright, sp. nov.**

**Type Material.** **HOLOTYPE** (male?) labeled: “**Puerto Rico:** San Germán, San Germán, Site 9, EDRR, 18.15118, -66.99364, 24.ix.2013, Coll: C. Torres & H. Rivera” / “**HOLOTYPE** *Stevewoodia atomus* D. E. Bright 2016” (USNM). **ALLOTYPE** labeled: “**Puerto Rico:** Patillas, Patillas, Site 6, EDRR, 18.07885, 66.03694, 11.IX.2013, Coll: C. Torres and H. Rivera” / “**ALLOTYPE** *Stevewoodia atomus* D. E. Bright 2016” (USNM). **PARATYPE** (1) labeled: “**PUERTO RICO:** Isabele, Bosque Estatel de Guajataca, Montanus Aymamon, 18–25–06N, 66–57–55W, forest” / “210 m, 14–15 June 1996, J. Rawlins, W. Zanol, R. Davidson, C. Young, M. Klingler, S. Thompson” (CMNH).

**Description (Male?).** Length 0.8–0.9 mm, 2.8 times longer than wide; dark brown. Frons convex, weakly impressed above epistomal margin, with a very faint, longitudinal groove extending from impression to level of upper margin of eyes; surface dull, minutely reticulate, with no evidence of punctures or special pubescence. Antennal club elongate-oval, 1.7 times longer than wide, solid with a very faint arcuate suture; funicle as long as scape. Pronotum as long as wide, widest at base; sides weakly arcuate; anterior margin broadly rounded, bearing two, conspicuous, basally contiguous serrations (two additional, very small and obscure serrations can be detected, one on each side of these two, larger serrations); anterior slope steeply convex, bearing scattered, small asperities, each asperity with a longer, flattened hairlike seta at posterior margin; posterior portion weakly transversely impressed behind slightly elevated, median summit, surface shining, minutely reticulate, with scattered, obscure, fine punctures. Elytra 1.6 times longer than wide; sides parallel on basal three-fourths, strongly converging to narrowly rounded apex; discal striae not impressed, punctured in even rows, punctures very large, very weakly impressed, each puncture with a minute seta; discal interstriae much narrower than striae, smooth except interstriae 1 with a median row of short scales, these 3.0–4.0 times longer than wide with truncate tips, gradually increasing in width toward declivity; remaining interstriae bearing similar scales on posterior third. Declivity convex; striae as on disc but distinctly impressed; interstriae strongly elevated and bearing a row of small granules and large truncate scales, these 2.0 times longer than wide.

**Female (?).** Length 0.9 mm, 2.9 times longer than wide; dark brown. Frons as in male except longitudinal groove absent, replaced by a very fine puncture. Antennal club as in male. Pronotum as in male. Elytra as in male except interstriae 1 bearing a median row of hairlike setae from base to apex; interstriae 3 and 5 bearing a few similar setae. Declivity convex; striae very weakly impressed; interstriae very weakly elevated, bearing a median row of very small granules and erect, hairlike setae, these 4.0 times longer than wide and longer than interstitial width.

**Distribution.** This species is known from Puerto Rico.

**Etymology.** From *atomus*, Latin for very small, referring to the size of the adults.

**Comments.** This species is known from three specimens, two of which are assumed to be a male and female. Based on the sexual dimorphism of related genera, the male is presumed to be the specimen with the elevated declivital interstriae with the broad scales. The female bears hairlike setae on the weakly elevated declivital interstriae. Other characters are mentioned in the above description. The minute adults of this species resemble those of *S. minutum* but may be distinguished by the presence of two serrations on the anterior margin of the pronotum, by the narrower interstitial scales on the disc and declivity of the female and by the convex frons of both sexes.

A third specimen, probably a female, has the elytra spread but is included in the type series as a paratype. This specimen bears four very small serrations on the anterior margin of the pronotum, the median pair are presumed to be worn down. Otherwise this specimen resembles the allotype.

Further collecting, especially from a host plant, is needed to resolve the male/female characters of this species.

***Stevewoodia minutum* Bright**

Figures 439, 509.

*Stevewoodia minutum* Bright 2010: 46; Bright 2014: 119.

**Description (Male).** Length 0.8 mm, 3.1 times longer than wide; light brown. Frons convex; surface moderately shining, densely, minutely reticulate. Antennal club oval, 1.7 times longer than wide, pubescent except on a median, longitudinal, narrow space extending from base to two-thirds of distance to apex, no other sutures visible; scape as long as funicle, without obvious setae. Pronotum 1.1 times longer than wide, widest at base; sides weakly arcuate; anterior margin broadly rounded, with a few, fine serrations; anterior slope steeply convex, bearing scattered, small asperities, each asperity with a longer, flattened scale at posterior margin; posterior portion weakly transversely impressed behind slightly elevated, median summit, surface shining, minutely reticulate, with scattered, obscure, fine punctures. Elytra 1.7 times longer than wide; sides parallel on basal three-fourths, strongly converging to narrowly rounded apex; discal striae not impressed, punctured in even rows, punctures very large, very weakly impressed; discal interstriae much narrower than striae, smooth, glabrous. Declivity convex; each interstriae bearing a median row of short, erect scales and very small granules.

**Female.** Length 0.9 mm, 3.1 times longer than wide; light yellowish-brown. Frons deeply concave from epistoma to well above upper eye level and laterally from eye to eye, lateral margin of cavity acutely margined opposite eye and acutely extended into a short elevation on upper margin; surface shining, smooth, glabrous, with a clump of very short setae below elevation on upper margin. Antennal club as in male, except longitudinal line absent; scape as in male, except bearing long setae. Pronotum as in male except vestiture on anterior slope hairlike, obscure. Elytra and declivity as in male except declivital granules smaller, obscure.

**Distribution.** This species is known from Martinique and Saint Lucia.

**Specimens examined. MARTINIQUE:** 4 km SW La Marin, Morne Aca, N14°27.8, W60°53.9, 260 m, 13–28.VII.2012, humid forest hilltop clearing flight intercept trap, S. Peck (2–SBPC, CNCI). **SAINT LUCIA:** Mon Repos, 6.5 km W Fox Grove Inn, 10–28.VI.2007, submontane forest flight intercept trap, 300 m, S. and J. Peck (2–SBPC, CNCI); Bordelais trap site, 185 m, 13.9689°N, 60.8859°W, 05–09 July 2009, flight intercept trap, C. A. Maier, M. L. Gimmel and K. J. Hopp (1–WIBF) and 10–25 June 2009, uv light, C. A. Maier and E. A. Ivie (1–WIBF).

**Comments.** Adults of this species may be easily recognized by their extremely small size, by the deeply concave female frons which bears a short, median elevation on the upper margin of the cavity and by the presence of rows of erect scales on each declivital interstriae.

**SUBFAMILY CRYPHALINAE**

Members of this subfamily may be recognized by the usually 1- to 4-segmented antennal funicle (pedicel excluded), by the steeply declivous anterior portion of the pronotum with distinct asperities, by the contiguous procoxae and by the ascending costal margin of the elytra.

In the West Indies, this subfamily contains ten genera placed in one tribe. This is a large subfamily and the classification is imperfect. In most cases, the genera and species are exceedingly difficult to identify and a comprehensive revision is needed.

**KEY TO THE GENERA OF WEST INDIES CRYPHALINAE**

1. Lateral margin of pronotum acutely rounded, bearing a fine raised line at least on basal third, basal margin of pronotum with a fine, raised line; antennal funicle 1–4-segmented (pedicel excluded), club variable ..... **2**
- Basal and lateral margins of pronotum rounded, without a fine, raised line; antennal funicle 4-segmented (pedicel excluded), club large, as long as wide (Fig. 448, 518) ..... ***Stegomerus* Wood** (p. 181)

- 2(1). Antennal funicle 1-segmented or not visible (visible segment is evidently the pedicel) ..... **3**  
 — Antennal funicle 2- to 4-segmented (pedicel excluded) ..... **4**
- 3(2). Antennal funicle evidently 1-segmented, segment as large as pedicel; elytra clothed with abundant, randomly placed, small, white, broad scales; body stout, 2.3 times longer than wide (Fig. 449, 519) ..... ***Trypolepis* Bright, genus nov.** (p. 182)  
 — Antennal funicle not visible, pedicel large; elytra clothed with interstrial rows of very small, round scales; body slender, 2.7 times longer than wide (Fig. 441, 511) .....  
 ..... ***Atomothenumus* Bright, genus nov.** (p. 106)
- 4(3). Adults extremely small, length 0.7–0.8 mm ..... **5**  
 — Adults larger, length usually more than 1.0 mm ..... **6**
- 5(4). Body slender, 3.1 times longer than wide, black; anterior margin of pronotum with six widely separated serrations, these as long as or longer than adjacent scales; elytral vestiture consisting of a row of small, broad scales in each interstriae, similar scales scattered on pronotum; length 0.8 mm (Fig. 446, 516) ..... ***Pygmaeoborus* Bright, genus nov.** (p. 178)  
 — Body stouter, 2.1 times longer than wide, light brown; anterior margin of pronotum with four serrations, median pair basally contiguous, slightly larger than lateral pair; elytral vestiture consisting of minute interstrial setae; length 0.7 mm (Fig. 445, 515) .....  
 ..... ***Microsomus* Bright genus nov.** (p. 178)
- 6(4). Posterior face of metatibia with a groove for reception of tarsus, groove glabrous, with a row of setae on mesal margin; antennal funicle 3-segmented (pedicel excluded), club flattened, without visible sutures or with a strongly oblique septum on one side, no other sutures visible (Fig. 393); pronotum with an indistinct, fine, raised lateral line (Fig. 447, 517); length 1.3–2.0 mm ..... ***Scolytogenes* Eichhoff** (p. 179)  
 — Posterior face of metatibia without a groove for reception of tarsus; antennal funicle 2- to 4-segmented (pedicel excluded), club with or without sutures; both basal and lateral margins of pronotum with a distinct, fine, raised lateral line, this line may be visible on basal third of lateral margin ..... **7**
- 7(6). Pronotal asperities basally contiguous, arranged into definite concentric rows (Fig. 75); antennal funicle 2-segmented (pedicel excluded); length 1.0–1.1 mm .....  
 ..... ***Allothenemus* Bright and Torres** (p. 105)  
 — Pronotal asperities separated, scattered in no apparent order; antennal funicle 2- to 4-segmented (pedicel excluded); length usually larger than 1.0 mm ..... **8**
- 8(7). Elytra densely covered with short, recumbent setae, interstriae with a row of erect, very narrow scales (Fig. 443, 513); strial punctures obsolete; posterior half of pronotum finely granulate ..... ***Hypocryphalus* Hopkins** (p. 112)  
 — Elytra either nearly glabrous or with interstrial rows of distinct, erect scales; strial punctures usually distinct; posterior half of pronotum not closely granulate, usually punctate ..... **9**
- 9(8). Elytra glabrous except for a few subcapitate, interstrial setae (Fig. 442, 512); anterior margin of pronotum with 10–16 serrations (Fig. 512); raised lateral margin on pronotum extending two-thirds of distance from basal margins; antennal club not septate .....  
 ..... ***Cryptocarenum* Eggers** (p. 107)  
 — Elytra densely clothed by scales and setae (Fig. 444, 514); anterior margin of pronotum with one to eight serrations; raised lateral margin of pronotum extending one-third of distance from base to anterior lateral margin; antennal club at least partly septate .....  
 ..... ***Hypothenemus* Westwood** (p. 113)

## TRIBE CRYPHALINI

Genus *Allothenemus* Bright and Torres

*Allothenemus* Bright and Torres 2006: 400; Bright 2014: 217.

*Allothenemus* was established for one aberrant species that resembles those in *Hypothenemus*. The type species differs from species in *Hypothenemus* by the basally contiguous pronotal asperities on anterior slope that are arranged into three concentric rows with a very short, inconspicuous fourth row at summit and no other asperities present on surface (Fig. 75); by the presence of four serrations on the anterior margin of pronotum, the median pair of which are slightly larger, by the basal margin of pronotum with a fine, elevated line, by the lateral margin of pronotum without an elevated line, by the 2-segmented antennal funicle (pedicel excluded), by the antennal pedicel much larger than the funicle and by the nearly circular antennal club which is very slightly longer than wide.

Two species are placed in this genus.

Key to the species of *Allothenemus* in the West Indies

1. Pronotal asperities arranged into even, unbroken, concentric rows; length 1.0 mm; Puerto Rico ..... ***A. minutus* Bright and Torres** (p. 106)
- First row of pronotal asperities arranged in three groups of two or three asperities each; length 1.1 mm; Dominican Republic ..... ***A. exquisitus* Bright, sp. nov.** (p. 105)

***Allothenemus exquisitus* Bright, sp. nov.**

Figure 75.

**Type Material.** HOLOTYPE (sex?) labeled: “DOMINICAN REPUBLIC: Province La Altagracia Nisibon, “Papagallo”, 16–19.VI.98, R. Woodruff: Freytag, blacklight trap” / “HOLOTYPE *Allothenemus exquisitus* D. E. Bright 2016” (REWC [FSCA]).

**Description (sex?).** Length 1.1 mm, 2.2 times longer than wide; light reddish-brown. Frons evenly convex, with a large, median puncture halfway between epistomal margin and level of upper margin of eyes and a very weak granule at mid-point of epistomal margin; surface weakly shining, densely, minutely reticulate with a few, scattered, yellowish setae along epistomal margin. Antennal club nearly circular, very slightly longer than wide, with a single, very vague, arcuate row of setae on apical half of anterior face. Pronotum 1.4 times wider than long, widest at base; sides broadly arcuate; apex narrowly rounded with a row of four acute serrations, the median pair slightly longer; summit distinct, elevated; anterior slope shining, with four distinctly elevated, concentric rows of basally contiguous serrations, first row divided into three groups of two asperities each (rightmost group contains three asperities), no other asperities present; posterior surface weakly shining, densely, minutely reticulate; vestiture of scattered, very short, erect, hairlike scales. Elytra 1.3 times longer than wide; sides parallel on anterior three-fourths, apex broadly rounded; discal striae punctured in distinct rows, punctures weakly impressed; discal interstriae narrow, half as wide as striae, surface weakly shining, minutely reticulate, each with a median row of erect, very short, yellowish scales, these half as long as distance between rows. Declivity evenly convex; surface and vestiture as on disc; each interstriae with a median row of minute, acute granules.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** From *exquisitus*, Latin for choice or fine, referring to the appearance of the adult.

**Comments.** Adults of this species resemble those of *A. minutus* but differ by the arrangement of the pronotal asperities as given above and in the key to species, by the very slightly larger size and by the distribution.

***Allothenemus minutus* Bright and Torres**

Figures 440, 510.

*Allothenemus minutus* Bright and Torres 2006: 401.

**Description (sex?).** Length 1.0 mm, 2.0 times longer than wide; color light reddish-brown. Frons evenly convex, with what appears to be a large puncture in middle at level of upper margin of eyes and a very weak granule at mid-point of epistomal margin; surface weakly shining, densely, minutely reticulate with a few, scattered, yellowish setae along epistomal margin. Antennal club nearly circular, very slightly longer than wide, with a single, very vague, arcuate row of setae on apical half of anterior face. Pronotum 1.3 times wider than long, widest at base; sides broadly arcuate; apex narrowly rounded with a row of four acute serrations, median pair slightly longer; summit distinct, elevated; anterior slope shining, with three distinctly elevated, concentric rows of basally contiguous serrations and a vague row at summit, no other asperities present; posterior surface weakly shining, densely, minutely reticulate; vestiture of very short, scattered, erect, hairlike to narrowly flattened scales, these arranged in a row behind each concentric row of asperities and scattered on basal and lateral areas. Elytra 1.2–1.3 times longer than wide; sides parallel on anterior three-fourths, apex broadly rounded; discal surface weakly shining, minutely reticulate over entire surface, striae not impressed except first striae very weakly impressed, striae punctures very weakly to not visible; discal interstriae not discernable, but each with a median row of erect, very short, yellowish scales, these half as long as distance between rows. Declivity evenly convex; surface and vestiture as on disc.

**Distribution.** This species is known from Puerto Rico.

**Specimens examined. PUERTO RICO:** Guaynabo, VII.1–30.1999 and 15–30.VII.1996, ex. light trap, J. A. Torres (2–CNCI); Arecibo, Arecibo, Site 12, EDRR, 18.45271, -66.59809, 20.VI-3.VII.2013, C. Torres and H. Rivera (1–MSUC).

**Comments.** The characteristics of this species are so unique that there should be no problem in recognizing the species in the future. It differs from all members of the Cryphalini (except *A. exquisitus*) by the characters mentioned under the generic diagnosis above. Adults differ from those of *A. exquisitus* by the arrangement of the pronotal asperities, by the smaller size and by the distribution.

In the original description of this species, I mentioned that the holotype would be deposited in the USNM and the paratype in the CNCI. However, the Puerto Rican specimens listed above from Guaynabo were collected by J. A. Torres and are all deposited in the CNCI.

**Genus *Atomothenus* Bright, genus nov.**

With the character states of Cryphalini as given by Wood (2007) except antennal funicle evidently not visible; pedicel large, round; antennal club flat with two, obscure sutures; elytra with interstriae rows of very small, round scales; anterior tibia with five very small socketed teeth on lateral margin; body slender, 2.7 times longer than wide.

**Type species.** *Atomothenus unicus* Bright sp. nov., monotypic.

**Etymology.** Prefix from *atomus*, Latin for very small, a very small species similar to *Hypothenemus*. Gender masculine.

**Comments.** This genus is established for one species from the Dominican Republic that differs significantly from any other currently recognized species in the Cryphalinae.

The genus contains one species in the West Indies.

***Atomothenus unicus* Bright, sp. nov.**

Figures 441, 511.

**Type Material.** HOLOTYPE (sex?): “DOMINICAN REPUBLIC: La Altagracia, Parque del Esta, Caseta Guaraquao, 4.4 km SE Bayahibe, 18–19–59N, 68–48–42W, 3 m, 26–27 May 2004” / “C. Young, J. Rawlins, J. Fetzner, C. Nunez, semi humid forest near sea, limestone, uv light. Sample 51114” / “Carnegie Museum Specimen Number CMNH-350.097” / “HOLOTYPE *Atomothenus unicus* D. E. Bright 2016” (CMNH).

**Description (sex?).** Length 0.9 mm, 2.7 times longer than wide; light reddish-brown. Frons weakly convex, very obscurely impressed on a small, circular area just above epistomal margin; surface dull, minutely reticulate, with a few, short, yellowish, narrowly flattened setae, these very slightly longer on area near eye and along epistomal margin. Antennal club round, as long as wide, with two obscure sutures marked by rows of slightly longer setae, basal segment glabrous, remaining area of club pubescent. Pronotum slightly less than 1.1 times wider than long, widest on posterior half; sides broadly arcuate, strongly converging toward anterior margin; anterior margin broadly rounded, with two widely separated serrations; anterior slope bearing 12 large asperities scattered in no apparent order but with a transverse row of four contiguous asperities just anterior to summit; summit distinctly elevated, located at middle; basal and lateral surface bearing scattered, small, round, widely separated scales, lacking setae. Elytra 1.6 times longer than wide; sides parallel on basal two-thirds, broadly rounded at apex; striae obscure, not impressed, with large, weakly impressed punctures placed in regular rows; interstriae shining, as wide as striae, each with a median row of widely separated, very small, round scales. Declivity broadly convex; interstriae as on disc except scales very slightly closer and slightly broader.

**Distribution.** This species is known from Dominican Republic.

**Etymology.** From *unicus*, Latin for only, singular or sole, referring to this species as the only species in the genus.

**Comments.** Only one specimen of this species was available for examination, but the unique combination of characters should allow for reliable identification in the future. Adults may be readily recognized by the widely separated, small scales on the posterior portion of the pronotum, by the similar widely spaced small scales placed in a median row in each elytral interstriae, by their very small size and by the other characters mentioned in the above description.

Each elytron on the type specimen is separated and the potential for further damage is great. To prevent such damage, I have placed a small drop of shellac gel on the scutellar area to firmly cement each elytron in place.

**Genus *Cryptocarenum* Eggers**

*Cryptocarenum* Eggers 1937: 79; Wood and Bright 1992: 902; Bright and Skidmore 1997: 189; Bright and Skidmore 2002: 333 (checklist); Bright 2014: 222.

*Tachyderes* Blackman 1943c: 35.

Species in *Cryptocarenum* are very similar to those in *Hypothenus* but differ by having a longer, raised lateral line on the pronotum, the antennal club has two sutures marked by rows of setae, the eyes are large and coarsely septate and the elytra are glabrous except for a row of several, narrowly spatulate setae in declivital interstriae 1, 3, 5 and 7.

This genus is represented by 14 species distributed throughout the Neotropical Region (Bright and Skidmore 2002). Three species are treated herein from the West Indies.

**Key to the species of *Cryptocarenum* in the West Indies (females only)**

1. Length 2.3–3.0 mm; anterior margin of pronotum armed with 12–16 large serrations; frons weakly convex, uniformly sculptured, deeply punctured, the punctures often indistinctly oriented into obscure longitudinal rows, with no indication of a transverse, median carina; Jamaica .  
..... *C. diadematus* Eggers (p. 108)
- Length less than 2.3 mm; anterior margin of pronotum usually armed with six to nine serrations; frons transversely impressed above epistoma, usually with a distinct tubercle on upper margin of transverse impression; widespread ..... **2**
- 2(1). Length 2.0 mm or more; frons with an arcuate row of three to five longitudinally elongate tubercles on upper margin of impression at upper level of eyes, median one often continuing onto vertex as a short dorsal carina; surface of frons more coarsely rugose and granulate ....  
..... *C. seriatus* Eggers (p. 110)
- Length 1.5–2.1 mm; frons bearing one, usually distinct, median tubercle on upper margin of impression at upper level of eyes ..... *C. heveae* (Hagedorn) (p. 108)

***Cryptocarenum diadematus* Eggers**

Figure 76.

*Cryptocarenum diadematus* Eggers 1937: 80; Wood and Bright 1992: 903; Bright and Skidmore 1997: 190; Bright and Skidmore 2002: 139; Wood 2007: 491.

**Description (Female).** Length 2.3–3.0 mm, 2.7 times longer than wide; light brown. Frons convex, with a weakly elevated median carina at upper level of eyes; surface finely granulate-punctate from epistoma to upper level of eyes, becoming more rugose above upper level of eyes; vestiture consisting of fine, abundant, short hairlike setae, longer and more prominent along epistomal margin. Antennal club oval, 1.1 times longer than wide. Pronotum 1.1 times longer than wide, widest slightly in front of middle; sides subparallel, arcuate, anterior margin broadly rounded, bearing 12–16 large, erect serrations; anterior slope with numerous large asperities; posterior area smooth, shining, with minute, sparse, weakly impressed punctures. Elytra 1.8 times longer than wide; sides parallel on anterior two-thirds, broadly rounded behind; striae not impressed except first, punctures very small, shallowly impressed, separated by a distance less than their own diameters; interstriae shining, smooth, impunctate, 3.0 times wider than striae. Declivity convex; striae 1 weakly impressed; interstriae 2 weakly impressed; vestiture consisting of very narrowly spatulate setae on interstriae 1, 3, 5 and 7 on the declivity and along lateral margin, sometimes with a few setae on discal interstriae.

**Male.** Not seen in material examined but is similar than female (1.5–1.6 mm); eye reduced in size; sculpture of frons finer; asperities on pronotum smaller; setae on elytral declivity slightly broader (Wood 1982).

**Distribution.** This species is known from southern Florida, southern Mexico to Brazil and in the West Indies from Jamaica.

**Specimens examined. JAMAICA:** Trelawny Parish, Barbecue Bottom, VIII.12,13,18. 1966, H. F. Howden (3–CNCI).

**Comments.** Adults of this species may be recognized by their larger size, by the evenly convex frons which is evenly granulate and punctate from the epistoma to the upper eye level and by the more numerous serrations on the anterior margin of the pronotum.

***Cryptocarenum heveae* (Hagedorn)**

Figure 78.

*Stephanoderes heveae* Hagedorn 1912: 338.

*Cryptocarenum heveae*: Wood and Bright 1992: 903; Bright and Skidmore 1997: 190; Bright and Skidmore 2002: 140; Bright and Torres 2006: 409; Wood 2007: 493.

*Cryptocarenum caraibicus* Eggers 1937: 82 (Guadeloupe).

*Cryptocarenum parvus* Blackman 1943c: 36 (Cuba).

**Description (Female).** Length 1.5–2.1 mm, 2.6 times longer than wide; reddish-brown. Frons transversely impressed above epistoma, impression broad, shallow; surface finely rugose at sides near eyes, more strongly rugose above impression, usually a distinct, median tuberculate elevation is evident on upper margin of impression at upper level eyes; vestiture consisting of intermixed, short and long hair-like setae, these more abundant along epistomal margin. Antennal club oval, as long as wide. Pronotum 1.1 times wider than long; sides weakly, evenly arcuate, anterior margin broadly rounded, bearing seven or eight large, erect asperities; anterior slope bearing numerous asperities, these erect, large; posterior area smooth, shining, finely, sparsely punctured; median line broad, flattened and smooth; vestiture consisting of narrowly spatulate setae, shorter on posterior area. Elytra 1.6 times longer than wide; sides parallel on anterior two-thirds, narrowly rounded behind; striae not impressed except on first, punctures fine, shallow, separated by a distance greater than their own diameters; interstriae shining, more than 2.0 times wider than striae, punctures extremely minute, abundant, randomly placed. Declivity convex; striae 1 and 2 impressed; vestiture consisting of erect, spatulate setae on interstriae 1, 3, 5, and 7 on declivity and along lateral margin, sometimes a few of these setae are located on discal interstriae.

**Male.** Length 1.0 mm, very similar to female.

**Distribution.** This species is known from southern Florida to northern South America. It was evidently introduced from Africa and probably occurs throughout the West Indies.

**Specimens examined.** **BARBADOS:** Welchmann Hall Gully, 26.V.2006, forest litter, 270 m, S. and J. Peck (2–SBPC). **CAYMAN ISLANDS:** **Cayman Brac,** The Creek, uv trap, 7.XI.1995, C. R. Dilbert (2–CNCI). **Grand Cayman,** Mastic Trailhead S, 20 May 2009 or 20–29 May 2009, flight intercept trap, R. Turnbow or M. C. Thomas, (4–FSCA), same locality, 20–20 May 2009, col. M. C. Thomas, Lindgren funnel trap baited with manuka oil (1–FSCA). **CUBA:** 7 km N of Vinales, Sept. 16–22, 1913 (1–AMNH). **DOMINICA:** Grand Bay, III.3.1964, Dale F. Bray / at light (1–USNM); Portsmouth, Cabrits National Park, 30 m, 2–13.VI.2004, tropical deciduous forest / flight intercept trap, S. and J. Peck (3–SBPC); Springfield Estate, 330–360 m, 30.V-16.VI.2004, S. and J. Peck, N15°29.796, W61°22.142, mature second forest flight intercept trap (1–SBPC); Saint John Parish, Cabrits National Park, 28 June 2004, R. Turnbow (2–RHTC). **DOMINICAN REPUBLIC:** Independencia, ESE Jimani, La Florida, S of Lago Limon, 01–06 April 1992, Lindgren funnel w/ turpentine, M. A. Ivie (6–WIBF); La Vega, Hotel Montana, 4 June 1994, R. Turnbow (1–RHTC); Pedernales, 25 km. N Cabo Rojo, 700 m, various dates in 1996, R. Turnbow (3–RHTC); Province Hato Mayor, W. Sabana de la Mar, Par. Nac. Los Haitises, bosque humido, 15 m, M. A. Ivie (1–WIBF); San Cristobal, Borbon Cuevas Pomier, 200 m, 13–28.VII.95, tropical deciduous forest flight intercept trap, S. and J. Peck (1–SBPC). **GRENADA:** Saint Andrew Parish, Mirabeau Agricultural Laboratory, Malaise trap, various dates in 1990, A. Thomas (13–SPBC, CNCI). **GADELOUPE:** Basse-Terre: Petit Binro, 02 Jan 2003, J. Touroult (1–WIBF); Basse-Terre: Malendure, Petite Trace, Fond Ravine, N16°10.44, W61°46.7 / streamside forest uv light, 2 m, 21.V.2012, S. Peck (1–SBPC); Basse-Terre: Rivière Sens, Sentier Houëlemont, N15°58.93, W6°42.62 / humid forest flight intercept trap, 19–31.V.2012, S. Peck (1–SBPC). **JAMAICA:** Saint Andrew Parish, Saint Peters, 9 July 1966 (1–CNCI); Trelawny Parish, Duncans, 15 and 23 August 1966, Howden and Becker (5–CNCI). **MARTINIQUE:** 1 km NW Diamant, N14°29.4', W61°02.5, 8–23'.VII.2010 / 10 m, thorn forest flight intercept trap, S. and J. Peck (9–SBPC, CNCI); 4 km SW Le Marin, Morne Aca, 260 m, N14°27.8, W60°53.9 / humid forest hilltop clearing flight intercept trap, 13–28.VI.2012, S. Peck (12–SBPC, CNCI); Morne Maxime, 12.VII.2001, Leg. Rouget, D., Cauvin, M./Marouet, J. (1–CNCI). **MONTSERRAT:** Old Towne Palm Court, 15–30 June 2002, M. A. Ivie and K. A. Marske, in pool and at light (1–WIBF); Woodlands Cassava Ghaut, Beattie House, 01–29 June 2003, K. A. Marske, flight intercept trap. (1–WIBF). **NETHERLANDS ANTILLES:** **Curacao,** Playa Santa Cruz Rd., 12°18'19"N, 69°08'26"W, blacklight, 16 Nov. 2014, R. Turnbow (6–RHTC, CNCI); Playa Kanoa Rd., 12°09'33"N, 68°52'50"W, blacklight, 9 Nov. 2014, R. Turnbow (1–RHTC); Weg Naar Playa Kanoa, 12°09'33"N, 68°52'50"W, blacklight trap, 9 Nov. 2014, R. Turnbow (1–RHTC); Weg Naar, Playa Kanoa, 12°9'37.82"N, 68°52'49.13"W, 10.XI.2014, M. C. Thomas, blacklight trap (1–FSCA); Christoffel N. P., North Car Route, 12°21'2.23"N, 69°6'10.14"W, 14.XI.2014, M. C. Thomas (1–FSCA); Christoffel Pk., The Woods, 12°21'02"N, 69°06'11"W, blacklight trap, 12 Nov. 2014, R. T. Turnbow (1–RHTC); Malpais Trail, 12°10'12.94"N, 69°00'16.48"W, blacklight trap, 9 Dec. 2015, R. Turnbow (1–RHTC); Savonet, 12°21'01.07"N, 69°06'23.44"W, 4 Dec. 2015, R. Turnbow (1–CNCI). **PUERTO RICO:** Guaynabo, various dates 1989–2000, J. Torres, ex: *Terminalia catappa* log (1–CNCI), ex: *Melicoccus bijugatus* seeds (3–CNCI), ex: light trap (3–CNCI), ex: vine (1–CNCI); Guánica, 8.VII.1989, J. Torres, ex: *Serjania polyphylla* vine (1–CNCI); Isabela, 15

enero 2011, E. Abreu, trampa alcohol (1-UPRC). **SAINT LUCIA:** Barre de L'Isle Trail, 13°93'N, 60°96'W, 8.VII.2009 / in pith of very small twigs, D. E. Bright (3-CNCL). **VIRGIN ISLANDS (BRITISH):** **Guana Island**, 1-10.X. 1999, B. and B. Valentine (1-OHUC); 1-14 July 1994, B. E. and P. M. Miller (1-USNM); Sugarloaf Trail, 100-800 ft., 09 Oct 1994, M. A. and L. L. Ivie (1-WIBF). **Tortola**, Cappons Bay Cemetery, 10', 06 Oct 1994, M. A. and L. L. Ivie, beating vegetation (2-WIBF). **Virgin Gorda**, Gorda Peak National Park, 1275 ft., 21 Oct-11 Nov 1992, T. R. Hughes col., flight inter. trap (1-WIBF). **VIRGIN ISLANDS (U. S.):** **Buck Island**, Buck Islands Reef National Monument, 08 Sept. 1998, Z. M. Hillis (2-WIBF), 08 Nov. 1994-19 Jan. 1995, flight intercept trap, Z. M. Hillis (2-WIBF). **Saint Croix**, Estate Cotton Garden, S.E.T.I. Station, 12 Jan 1993, at night, D. S. Sikes (1-WIBF); Sprat Hall, 21-31 Jan 1981: A. Goodwin / ex vane trap, ETOH bait (1-USNM). **Saint John**, Lameshur Bay Reef Bay Trail, 5 ft., 27 Jul-14 Oct 1994, M. A. and L. L. Ivie (1-WIBF); Lameshur Bay Lt., Europa to Europa Bay, 20 July 1994, M. S. Becker, beating (1-WIBF); Lameshur Bay, Yawzi Point Trail, 18 July 1994, M. S. Becker, night beating (1-WIBF). **Saint Thomas**, Nazareth, 40 ft., 27 July-19 Oct 1994, M. A. and L. L. Ivie, flight. intercept trap #9 (1-WIBF), same locality, 01 Jan 1993-06 Jul 1994, flight intercept trap (1-WIBF).

**Comments.** This species is known from a variety of vines, shrubs and trees in other tropical areas but is recorded from a *Vitis* sp. in southern Florida (Wood 1954).

It is difficult to distinguish the female of this species from the male of *C. seriatus* but the smaller eye and finer sculpture of the frons of the male *C. seriatus* should be sufficient to distinguish between the two. The less strongly sculptured frons, the minutely punctate elytral interstriae and the smaller size will distinguish the female of *C. heveae* from adults of the following species.

Included with this species are specimens I previously identified as *C. lepidus* Wood (Cognato and Bright 1996; Bright and Skidmore 1997; Bright and Skidmore 2002). The transverse impression on the female frons varies in depth and sculpture. Some specimens have an obscure longitudinal carina across the impression, similar to that on *C. lepidus*. A reexamination of the type of *C. lepidus* and other specimens has shown that my original identification was in error and all specimens are referred to *C. heveae*.

### ***Cryptocarenus seriatus* Eggers**

Figures 77, 390, 442, 512.

*Cryptocarenus seriatus* Eggers 1933: 10; Wood and Bright 1992: 904; Bright and Skidmore 1997: 190; Bright and Skidmore 2002: 140; Bright and Torres 2006: 409; Wood 2007: 496.

*Tachyderes floridensis* Blackman 1943c: 36. (Florida Keys).

**Description (Female).** Length 2.0-2.5 mm, 2.7 times longer than wide; reddish-brown. Frons shallowly impressed from epistoma to upper level of eyes; surface coarsely rugose and granulate, bearing three to five longitudinally elongate tubercles on upper level of impression, the median tubercle larger, sometimes continuing dorsad as a fine carina; vestiture consisting of sparse, intermixed short and long, hairlike setae, longer and more prominent along epistomal margin. Antennal club oval, 1.2 times longer than wide. Pronotum as long as wide; sides evenly, weakly arcuate, anterior margin broadly rounded, bearing seven or eight erect serrations; anterior slope as in proceeding species, asperities larger; posterior area smooth, shining, punctures sparse, weakly impressed; vestiture as on female of proceeding species. Elytra 1.8 times longer than wide; sides parallel on anterior two-thirds, broadly rounded behind; striae not impressed except on 1, punctures large, impressed, separated by a distance less than their own diameters; interstriae shining, smooth, impunctate, as wide as striae to 2.0 times wider than striae. Declivity convex; striae 1 and 2 impressed; vestiture consisting of very narrowly spatulate setae on interstriae 1, 3, 5 and 7 on the declivity and along lateral margin, sometimes with a few setae on discal interstriae.

**Male.** Similar to female except smaller, 1.5-1.6 mm; eye reduced in size; sculpture of frons finer; asperities on pronotum smaller; setae on elytral declivity slightly broader.

**Distribution.** This species is known from southern Florida and Texas to northern South America and is widespread in the West Indies.

**Specimens examined.** **ANTIGUA:** Christian Valley, blacklight trap, 3.XI. and 17.IX. 1991, FAO Insect Survey (2-SBPC); near Renfrew, 5-6.III.06, blacklight trap, residence Julie-Ann Laudat, R. E. Woodruff, J. Laudat (1-REWC). **BAHAMAS:** **Andros Island**, Forfar Field Station, nr. Stafford Creek, 22-28.VII.2006, M. C. Thomas, T. R. Smith, uv trap in coastal coppice (1-FSCA); Cargill Creek, 26.VII.2006, R. Turnbow, blacklight trap (1-RHTC);



**Figures 76–78.** Frons of *Cryptocarenum* spp. **76)** *C. diadematus*. **77)** *C. seriatus*. **78)** *C. heveae*.

Owens Town, 6 June 2004, R. Turnbow (1–RHTC); Stafford Creek, 8 June 2001, R. Turnbow (1–RHTC); Uncle Charlie's Blue Hole, 7 June 2001, R. Turnbow (1–RHTC). **BARBADOS:** Turner's Hall Woods, 200 m, 24.V-6.VI.2006, forest Malaise, S. and J. Peck (1–SBPC). **CAYMAN ISLANDS: Grand Cayman,** Mastic Trailhead S., 20 May 2009 or 20–29 May 2009, flight intercept trap, R. Turnbow (8–FSCA), same locality, 20–20 May 2009, M. C. Thomas, Lindgren funnel trap baited with manuka oil (2–FSCA). **CUBA:** Santiago Province, Gran Piedra Met. Radar, 6–17.XII.1995, 1100 m, elfin forest flight intercept trap, S. Peck (1–SBPC). **DOMINICA:** St. Paul Parish, Cabrits NP, E. Cabrits Tr., 15.5845N, 61.4725W, 30 MAY-07 JUNE 2011, 47 m, Lindgren funnel, TAMU group (50+–WIBF, CNCI); St. Paul Parish, Springfield Est., 15.3463N, 61.3687W, 29 MAY-11 JUNE 2011, elev. 357 m, L. L. Ivie; Lindgren funnel (25+–WIBF, CNCI). **DOMINICAN REPUBLIC:** Boca Chica, 10 m, various dates in 1971 and 1972, J. and S. Klapperich (3–CNCI); Dis. Nac., 4 km W Boca Chica, August 11 1979, G. B. Marshall (1–CNCI); Duarte, Reserva Loma Quita Espuela, Canelo, 13.2 km NNE San Francisco de Macoris, 515 m, 6 Apr 2004, C. Young, R. Davidson, J. Rawlins, edge of wet broadleaf forest, uv light (1–CMNH); Independencia, 4 km S Los Pinos, Loma

de Vientos, 455 m, 23 July 1992/R. Davidson, J. Rawlins, S. Thompson, O. Young, semiarid deciduous forest with pastures (3-CMNH); La Altagracia: N. del Este, Boca de Yuma, 18°21.904'N, 68°37.094'W, 05 August 1999, 2 m, at light, M. A. Ivie and K. A. Guerrero (5-WIBF); La Altagracia, Parque del Este, 2.9 km SW Boca de Yuma, 11 m., 28 May 2004 / J. Rawlins, C. Young, C. Nunez, J. Fetzner, semihumid dry forest, limestone, uv light (3-CMNH); Macoris, .5 km E Boca del Soco, 15 May 1993, R. Turnbow (1-RHTC); Pedernales, 26 km N Cabo Rojo, 565 m, 29.XI-3.XII.1991, evergreen dry forest intercept trap, Masner and Peck (1-CMNO); Pedernales, 4 km W Oviedo, 10 m, 28.XI-4.XII.1991, arid thorn forest intercept trap, Masner and Peck (1-CMNO); Province La Romana, 3 km N Casa de Campo, 15.VI.1998, blacklight trap, R. Woodruff-P. Freytag (1-REWC); Province Pedernales, km. 19 N Cabo Rojo, 12.VI.1998, R. E. Woodruff: H. Freytag, blacklight trap, 1000 ft. (1-REWC); San Cristobal, 4 km NW Villa Altagracia, 300 m, 12 April-06 July 1998, M. A. Ivie and R. O. Ivie, flight intercept trap (1-WIBF). **GRENADA:** Parish Saint George, Saint George's, 8-VI-1990, M. C. Thomas (2-RHTC). **GADELOUPE:** Basse-Terre: Mahault, Rivière Colas, 80 m, N16°11.26, W61°46.71 / xeric forest, streamside uv trap, 15.V.2012, S. Peck (1-SBPC). **JAMAICA:** Duncans, 21 August 1966, H. F. Howden (2-CNCI); 8 mi E Falmouth, VIII.5.1971, L. and C. W. O'Brien (1-CNCI); Saint James Parish, 3 miles west of Flamingo, 19 August 1966 (1-CNCI); Saint Thomas Parish, Morant Bay Road, 14.5 miles east of Kingston, 22 May 1960, T. H. Farr (3-IJCK); Trelawny Parish, Barbecue Bottom, 10-13 August 1966, H. F. Howden (4-CNCI). **MARTINIQUE:** Bellefontaine, III.2011 / J. Touroult (4-CNCI); 1 or 2 km NW Diamant, N14°29.4', W61°02.5', 8-23.VII.2010 / thorn forest flight intercept trap, S. and J. Peck (20-SBPC); 1 km E Diamant, 7-23.VII.2010 / 10 m, thorn forest flight intercept trap, S. and J. Peck (4-SBPC); 5 km SE Le Marin, Foret Creve, Coeur, 35 m, N14°27.05', W60°50.91' / dry forest uv trap, 10-28.VII.2012, S. Peck (1-SBPC). **MONTSERRAT:** Woodlands Cassava Ghaut, Beattie House, 18-19 May 2003, K. Marske, house light, night (1-WIBF) and 01-29 June 2003 (1-WIBF); Cedar Ghaut, 170 ft., 06 Aug 2005, WIBF group, uv light (1-WIBF); Woodlands Mahogany Road, 21 July 2005 (1-WIBF); Woodlands Riverside House, 33 m, 10-12 Jan 2002, M. A. Ivie, K. Marske, Malaise trap (1-WIBF). **PUERTO RICO:** Guánica, 8.VII.1989, ex *Serjania polyphylla* and vine (7-CNCI); Guaynabo, 23.VIII.1994, in *Melicoccus bijugatus* seeds (2-CNCI), various dates, light trap (4-CNCI). **SAINT LUCIA:** Bouton, 10.VII.2009, ex: small dead stem, D. E. Bright (1-CNCI); Savannes Mangrove Reserve, 2 m, 13.76720°, 96.91606°W, 01-03 May 2009, Lindgren funnel, I. A. Foley and R. C. Winton (1-WIBF). **VIRGIN ISLANDS (BRITISH):** **Guana Island**, 1-10.X. 1999, B. and B. Valentine (1-OHSC) and 8/14-X-01, B. and B. Valentine, Malaise trap (1-OSUC); La Ping Trail, 28 Oct 1992, beating, L. L. and M. A. Ivie (1-WIBF); Quail Dove Ghut, 20-25 Apr 1993, 400 ft., Lio Wei Peng, flight intercept trap (1-WIBF); plantation area, 16-20 Oct. 1992, R. R. Snelling (1-WIBF). **VIRGIN ISLANDS (U. S.):** **Buck Island**, Buck Island Reef National Monument, 08 JAN 1993, general coll. (3-WIBF). **Saint Croix**, Sprat Hall, 21-31 Jan 1981: A. Godwin (24-USNM, WIBF, CNCI) and 01-15 Jan 1983, J. A. Yntema, vane trap w/ETOH (1-CNCI).

**Records from literature. SAINT LUCIA:** Gastries, Sept. 10, 22, 1919, J. C. Bradley (Schedl 1957).

**Comments.** This species is known from a large variety of plants including *Chenopodium*, *Coccoloba*, *Conocarpus*, *Dipholis*, *Ficus*, *Galactea*, *Ipomoea*, *Metopium*, *Ocotea*, *Persea*, *Pithocellobium*, *Rhizophora*, *Rhus*, *Torrubia* and *Vitis* (Wood 1954).

The larger size and the rougher sculpture of the frons will distinguish the female of *C. seriatus* from adults of the other West Indian members of the genus. The males may be distinguished by the smaller size, by the smaller eyes and by the finer sculpture.

### Genus *Hypocryphalus* Hopkins

*Hypocryphalus* Hopkins 1915a: 41; Wood and Bright 1992: 868; Bright and Skidmore 2002: 385 (checklist); Bright 2014: 225.

Members of *Hypocryphalus* can be distinguished from those in other genera in the Cryphalini by the 4-segmented antennal funicle (pedicel excluded), by the procurved sutures on the antennal club, by the broadly convex, weakly sculptured frons and by the densely pubescent elytra with a median row of erect, very narrow, hairlike scales in each elytral interstriae.

About 50 species are known in the Old World (Bright and Skidmore 2002), one of which has been introduced into the New World in mango trees.

### *Hypocryphalus mangiferae* (Stebbing)

Figures 365, 391, 443, 513.

*Cryphalus inops* Eichhoff 1872: 131. (Name suppressed by plenary powers of the International Commission of Zoological Nomenclature 1986).

*Cryphalus mangiferae* Stebbing 1914: 542. (Name conserved by plenary powers of the International Commission of Zoological Nomenclature 1986).

*Hypocryphalus mangiferae*: Wood and Bright 1992: 869; Bright and Skidmore 2002: 133; Bright and Torres 2006: 402; Wood 2007: 487.

**Description (Female).** Length 1.6–1.9 mm, 2.2 times longer than wide; dark yellowish-brown. Frons broad, slightly flattened above epistoma, convex above; surface minutely reticulate, with very fine, inconspicuous setae, these longer and denser along epistomal margin. Antennal club sub-circular, slightly longer than scape, with three procurved sutures. Pronotum 1.1 times wider than long, widest on basal half; anterior margin broadly rounded, with four serrations, median pair slightly longer; summit distinctly elevated, near middle; anterior slope with more than 30 erect asperities; posterior area moderately shining, finely granulate, with short, fine setae and a few longer, erect scales. Elytra 1.4 times longer than wide; apex broadly rounded; striae very obscurely impressed, punctures obscure, not impressed; interstriae 4.0–5.0 times wider than striae, densely covered by dense, minute granules and very short, very small, recumbent scales, each interstriae with a median row of longer, erect, fine setae. Declivity convex; similar to disc except interstitial setae slightly longer, sometimes slightly darker.

**Male.** Similar to female.

**Distribution.** This species is widespread throughout the Old World tropics and is known from southern Florida, Central America and northern South America and probably occurs throughout the West Indies.

**Specimens examined.** **ANTIGUA:** Christian Valley, 26.VIII.1991, FAO Insect Survey, blacklight trap (2–FSCA, 1–SBPC). **BARBADOS:** Island record only, B. A. Bourne (2–USNM). **CUBA:** 5 km from Holguin, 17–VI-50 / Mango leaf (1–USNM). **DOMINICA:** Springfield Estate, Mt. Joy, 31.V-16.VI.2004, ridge top forest, S. and J. Peck (1–SBPC). **DOMINICAN REPUBLIC:** La Estrel, 8 km E Hondo Valle, 7 August 1979, C. W. O'Brien (1–CNCI). **GRENADA:** Saint Andrew, Mirabeau Agriculture Laboratory, various dates in 1990 and 1991, various collectors, light traps (4–CNCI, SBPC). **NETHERLANDS ANTILLES:** **Saba,** Windward side, 23–26.VIII.1993, R. M. and H. V. Baranowski, blacklight trap (1–CNCI); **Saba:** Bottom Mountain Trail, 1366 ft., 27.IV.2013 / broken branch, D. E. Bright and B. A. Barr (10–CNCI); **Saba:** Crispeen Track, near Ecolodge, 1500', 25.IV.2013 / ex: broken branch, D. E. Bright and B. A. Barr (2–CNCI). **PUERTO RICO:** Guaynabo, various dates in 1996–2000, J. Torres / ex: light trap (8–CNCI, USNM); Mayagüez, Mayagüez, Site 10, EDRR, 18.21822, -67.14791, 20.VI.- 3.VII.2013, C. Torres and H. R. Torres (1–MSUC). **SAINT LUCIA:** Barre de L'Isle Trail, 13°93'N, 60°96'W, 8.VII.2009 / in pith of very small twigs, D. E. Bright (4–CNCI). **SAINT KITTS-NEVIS:** **Saint Kitts,** Saint Peters Parish, Fountain Estates, 8–9.III.2006, R. E. Woodruff, blacklight trap (1–REWC). **VIRGIN ISLANDS (U. S.):** **Saint John,** Lameshur Bay, VIBFP, 10 March 1984, at uv light, W. B. Muchmore (2–CNCI, WIBF).

**Comments.** Adults of *H. mangiferae* may be distinguished by the elytral surface that is completely covered by short, recumbent scales with a row of long, erect, hairlike setae in each interstriae and by the generic characters mentioned in the generic key.

The host of this species is *Mangifera indica*. The beetles infest unhealthy branches on living trees as well as recently cut or broken larger material and shaded-out branches (Wood 1982, 2007).

### Genus *Hypothenemus* Westwood

*Hypothenemus* Westwood 1834: 35; Wood and Bright 1992: 904; Bright and Skidmore 2002: 366 (checklist); Bright 2014: 225.

*Trischidias* Hopkins 1915a: 12; Wood and Bright 1992: 947; Bright and Skidmore 2002: 445 (checklist); Bright 2014: 234. **New Synonymy.**

This is, without a doubt, the most difficult genus in the Scolytidae for investigators to identify the various included species. Specimens of all species are very small, the characters used to characterize species are obscure and difficult to see and evaluate, individual and specific variation is common and distinct, specimens of several species have been widely introduced through commerce and numerous

species have been described and numerous synonyms have been created. *Hypothenemus eruditus* has the dubious distinction of having more synonyms than any other species of Scolytidae and in fact, may have more synonyms than any other living organism; at last count, 72 names are listed in synonymy in Wood (2007) and likely more will be detected as the fauna of various regions of the world, especially South America, becomes better understood. Compounding the taxonomic difficulties is the fact that most, if not all, species are partly parthenogenetic (Wood 1982). Mating, if it occurs, is within siblings or between mother and son in the galleries in the host plant. Males are flightless, dwarfed and are rarely collected, probably never collected by the passive trap methods used by most collectors. Because of this mating system, the concept of species is blurred. Any mated female can start a population and if that female is slightly different from other females of the same species in the population, each progeny may be similarly variable and may appear to be a different species.

This genus appears to have undergone a massive radiation in the West Indies islands. In 1985 I recorded twenty-four species from the region. Discounting synonyms and including new additions, the total number changed by one by 2010. The number of species that I can now recognize has more than doubled.

Species may be found in all types of vegetation, from cut or broken branches of trees, vines, shrubs, leaf petioles of *Cecropia* sp. (and probably other species of plants), stems of weeds, grasses, in seeds and berries, etc. Several species were found in minute fungus pustules just below the bark surface. Most species are not of economic importance, but *H. hampei* is an important pest of coffee. Probably many other species have an unrecognized, but important, effect on mans' agricultural and forestry activities.

Species of *Hypothenemus* (females only) may be distinguished by the 2- to 4-segmented antennal funicle (pedicel excluded), by the transverse suture 1 on the antennal club, by the presence of a fine elevated line on the lateral and basal margin of the pronotum, by the vestiture that consists of rows of interstitial scales of various length and width and recumbent strial setae, which are either in rows or randomly scattered and by the small size. Males are flightless, smaller in size with reduced or more obscure characters.

*Trischidias* was described by Hopkins (1915) to include species that were very similar to those in *Hypothenemus* but differed by the smaller and stouter body, by the 2-segmented antennal funicle (pedicel excluded) and by an entire eye. None of these characters are unique and none can be used to distinguish genera. Adults of several species of *Hypothenemus* have a variable number of funicular segments, ranging from two to four, the eyes of *Hypothenemus* species varies from entire to very slightly emarginate and the smaller specimens of *Hypothenemus* species overlap the small size of *Trischidias* species. The placement of these minute specimens in either *Hypothenemus* or *Trischidias* often depends on the judgment of the observer and this is not a sufficient reason to maintain the two genera. Atkinson (1993a) and Vega et al. (2015) both comment that *Trischidias* may eventually be considered a species group within *Hypothenemus* and I agree. I have therefore placed *Trischidias* as another synonym of *Hypothenemus*.

Bright and Skidmore (2002) record 183 species in *Hypothenemus* from throughout the world and seven species in *Trischidias*. Two species from Puerto Rico have recently been described in *Hypothenemus* by Bright and Torres (2006) and seven, mostly from South America, have been described by Wood (2007). Two additional species have been described from southeastern United States (Johnson et al. 2016). Fifty-three species are included herein from the West Indies.

A microscope with magnification of at least 100× and a good light source are required in order to see and evaluate the minute characters of the various species and access to a comprehensive collection of identified species is a definite asset. The descriptions below were prepared using a microscope with magnification of 200×.

### Key to the species of *Hypothenemus* in the West Indies (females only)

1. Length 0.6–1.1 mm, usually less than 2.3 times longer than wide (one species 2.5 times longer than wide) ..... **2**
- Length 1.0 mm or more, usually more than 2.3 times longer than wide ..... **23**

- 2(1). Anterior margin of pronotum with four closely placed serrations, median pair shorter, with an additional pair of serrations widely separated from median four; anterior slope of pronotum with 20 small, weakly elevated asperities; each discal interstriae with a median row of short, broad scales, these 1.5–2.0 times longer than wide and shorter than interstitial width, very closely placed in row on declivity; length 0.9–1.0 mm, 2.5 times longer than wide; color light yellowish-brown; Grenada, Martinique, Virgin Islands ..... *H. ustulatus* Bright, sp. nov. (p. 174)
- Anterior margin of pronotum with variable number of serrations; vestiture on elytra consisting of narrow to broad scales, these not broad and closely placed on declivity ..... 3
- 3(2). Anterior margin of pronotum with four to six serrations, median pair basally contiguous and usually slightly longer ..... 4
- Anterior margin of pronotum with two to eight serrations, all of equal to nearly equal length, serrations widely separated or basally contiguous in various combinations ..... 13
- 4(3). Body 2.3–2.4 times longer than wide ..... 5
- Body stouter, less than 2.3 times longer than wide ..... 8
- 5(4). Elytral interstitial vestiture consisting of hairlike setae; anterior margin of pronotum bearing four serrations, median pair twice as long as others; discal interstriae narrower than striae; length 0.9 mm; Montserrat ..... *H. setiferous* Bright, sp. nov. (p. 169)
- Elytral interstitial vestiture consisting of flattened scales; anterior margin of pronotum with variable number of serrations, not arranged as above ..... 6
- 6(5). Vestiture of elytral declivity consisting of dense, hairlike, randomly placed setae, especially noticeable on postero-lateral areas, in addition to uniseriate rows of interstitial scales and striae setae; pronotum, antenna and legs reddish, elytra, head and ventral portions dark brown to black; length 1.0–1.4 mm, 2.4–2.6 times longer than wide; widely distributed ..... *H. eruditus* Westwood (in part) (p. 136)
- Vestiture of elytral declivity consisting of narrowly flattened to broad scales, hairlike setae absent between scales ..... 7
- 7(6). Elytral interstitial vestiture consisting of very short, broad, flattened scales, 2.0 times longer than wide and shorter than interstitial width; length 0.7–1.0 mm, 2.3 times longer than wide; widely distributed ..... *H. atomus* Hopkins (p. 126)
- Elytral interstitial vestiture consisting of narrowly flattened scales, 4.0 times longer than wide and longer than interstitial width; anterior margin of pronotum narrowly rounded, bearing four serrations, median pair slightly larger; interstitial scales on posterior half of elytra broader and slightly longer than those on anterior half; length 0.9 mm, 2.5 times longer than wide Barbados ..... *H. solivagus* Bright, sp. nov. (p. 171)
- 8(4). Body very stout, 2.0 times longer than wide; elytral interstriae narrower than striae; anterior margin of pronotum with two or four serrations ..... 9
- Body more slender, more than 2.0 times longer than wide; elytral interstriae variable in width; anterior margin of pronotum bearing a variable number of serrations ..... 10
- 9(8). Elytral striae not impressed; anterior margin of pronotum with two subcontiguous serrations; interstitial scales on declivity 1.5 times longer than wide; length 0.6–0.8 mm; Florida Keys ... *H. woodi* Bright, replacement name (p. 153)
- Elytral striae deeply impressed; anterior margin of pronotum with four subcontiguous serrations; interstitial scales on declivity 4.0 times longer than wide; length 0.7–0.8 mm; Dominican Republic ..... *H. striatus* (Atkinson) (p. 172)

- 10(8). Discal interstriae wider than striae; interstitial scales as long as or longer than interstitial width; body 2.0 times longer than wide ..... **11**  
 — Discal interstriae narrower than striae; interstitial scales slender, 5.0 times longer than wide or scales 2.0 times longer than wide; body 2.1 times longer than wide ..... **12**
- 11(10). Strial punctures large and distinct, interstriae less than half as wide as striae; interstitial scales shorter than interstitial width, scales as long as wide; length 0.7 mm; Montserrat .....  
 ..... ***H. pygmaeomorphus* Bright, sp. nov.** (in part) (p. 166)  
 — Strial punctures smaller, interstriae twice as wide as striae; interstitial scales on disc shorter than interstitial width, slightly longer than interstitial width on declivity; interstitial scales 2.0–3.0 times longer than wide; length 0.9 mm; Martinique .....  
 ..... ***H. paulus* Bright, sp. nov.** (p. 162)
- 12(10). Erect interstitial scales on declivity long, slender, more than 5.0 times longer than wide; length 0.8–1.0 mm; Florida Keys, Barbados, Dominica; Guadeloupe .... ***H. exiguus* (Wood)** (p. 140)  
 — Erect interstitial scales on disc and declivity as long as interstitial width, 2.0 times longer than wide; length 0.9–1.0 mm; Virgin Islands to Grenada .....  
 ..... ***H. nanoparvus* Bright, sp. nov.** (p. 154)
- 13(3). Anterior margin of pronotum with two basally contiguous serrations ..... **14**  
 — Anterior margin of pronotum with four to eight equally sized serrations (rarely lateral pair smaller) ..... **17**
- 14(13). Elytral disc completely micro-rugose, strial punctures not visible; strial punctures visible on posterior half of elytra; each declivital interstriae bearing a median row of short scales, these as long as interstitial width and bearing a row of minute granules; length 0.9 mm, 2.0 times longer than wide; Guadeloupe ..... ***H. liliputianus* Bright, sp. nov.** (p. 152)  
 — Elytral disc with obvious strial punctures; other characters not as above ..... **15**
- 15(14). Elytral interstriae distinctly narrower than striae; frons smooth, without a distinct, longitudinal, median groove ..... **16**  
 — Elytral interstriae wider than striae; frons with a distinct, longitudinal groove; discal interstriae each with a row of minute granules; declivital interstitial scales as long as distance between scales in row, 3.0–4.0 times longer than wide; body black; length 1.0 mm, 2.0 times longer than wide; Barbados ..... ***H. ignotus* Bright, sp. nov.** (p. 146)
- 16(15). Strial punctures large and distinct; length 0.7 mm, 2.0 times longer than wide; Montserrat .....  
 ..... ***H. pygmaeomorphus* Bright, sp. nov.** (in part) (p. 166)  
 — Strial punctures small, indistinct; length 0.9 mm, 2.5 times longer than wide; Dominican Republic, Virgin Islands ..... ***H. discordis* Bright, sp. nov.** (p. 133)
- 17(13). Anterior margin of pronotum with four basally contiguous or widely separated serrations .. **18**  
 — Anterior margin of pronotum with six or eight equal sized serrations (lateral pair often smaller) ..... **19**
- 18(17). Anterior margin of pronotum with four large, widely separated serrations; interstitial scales as long as interstitial width, 2.0 times longer than wide; length 1.0–1.1 mm, 2.4 times longer than wide; widely distributed ..... ***H. nesiotus* Bright, sp. nov.** (p. 154)  
 — Anterior margin of pronotum with four basally contiguous serrations; interstitial scales 1.5–2.0 times longer than interstitial width and very long, 5.0–6.0 times longer than wide; length 1.1 mm, 2.2 times longer than wide; Bahamas ..... ***H. turnbowi* Bright, sp. nov.** (p. 173)

- 19(17). Frons with a distinct, longitudinal carina extending from epistomal margin to upper level of eyes; serrations on anterior margin of pronotum and asperities on anterior slope of pronotum slender, erect; length 1.0–1.1 mm, 2.5 times longer than wide; Cayman Islands, Saint Vincent ..... ***H. carinafrons* Bright, sp. nov.** (p. 128)
- Frons convex, not bearing a longitudinal carina; serrations on anterior margin of pronotum and pronotal asperities not especially slender or erect ..... **20**
- 20(19). Discal stria punctures small, shallow; elytral interstriae wider than striae; body slender, 2.2–2.4 times longer than wide ..... **21**
- Discal stria punctures very large, weakly impressed; elytral interstriae much narrower than striae; body stouter, 2.2 times longer than wide ..... **22**
- 21(20). Length 1.0–1.1 mm, discal interstitial scales slightly longer than interstitial width; declivital interstitial scales slightly longer than discal scales, slender, 3.0 times longer than wide; Netherlands Antilles (Saba), Puerto Rico, Saint Lucia ..... ***H. parvulus* Bright, sp. nov.** (p. 160)
- Length 1.0 mm; discal interstitial scales as long as or slightly shorter than interstitial width; declivital interstitial scales broad, less than 2.0 times longer than wide; Bahamas, U. S. Virgin Islands, Dominican Republic, Puerto Rico, Cuba ... ***H. perexiguus* Bright, sp. nov.** (p. 162)
- 22(20). Elytral surface shining; length 1.0 mm; Puerto Rico ..... ***H. puertoricensis* Bright and Torres** (p. 166)
- Elytral surface dull, densely minutely reticulate; length 0.9 mm; Jamaica ..... ***H. indistinctus* Bright, sp. nov.** (p. 147)
- 23(1). Frons evenly convex to very slightly flattened above epistoma, often unmodified or with either a narrow, median, longitudinal groove, a weakly elevated, transverse carina, a smooth, longitudinal line or a fine, longitudinal carina, but usually devoid of a median tubercle or a transverse swelling (tubercle present in *H. gossypii*) ..... **24**
- Frons very weakly to strongly transversely or concavely impressed above epistomal margin, usually with a weak to conspicuous, median tubercle, a transverse swelling at middle above impression or a narrow, transverse, arcuate swelling on upper border of impression ..... **54**
- 24(23). Anterior slope of pronotum with eight to 25 coarse asperities, additional small granules or asperities may be present on summit area; anterior margin of pronotum either unarmed or bearing up to four or six small to coarse, acute serrations; elytral vestiture usually consisting of erect, interstitial scales and short stria setae and ground vestiture of abundant, short, scalelike or hairlike setae, these usually more conspicuous on declivity ..... **25**
- Anterior slope of pronotum with 25 or more, usually small asperities; anterior margin of pronotum bearing two to eight (occasionally more) serrations; elytral vestiture usually consisting of rows of erect, interstitial scales and uniseriate rows of short, stria setae with ground vestiture absent or inconspicuous or with ground vestiture of abundant, short, scalelike or hairlike setae, these usually more conspicuous on declivity ..... **37**
- 25(24). Anterior margin of pronotum bearing one large, acute serration; body very slender, 2.7 times longer than wide; Florida Keys ..... ***H. miles* (LeConte)** (p. 153)
- Anterior margin of pronotum bearing two or more serrations; body stouter ..... **26**
- 26(25). Elytral vestiture consisting of very narrow, flattened interstitial scales, each with an acute apex; length 1.7–1.9 mm, 2.2 times longer than wide; Dominican Republic ..... ***H. hirsutus* (Wood)** (p. 146)
- Elytral interstriae with erect, slender to broad scales, each broadly rounded or truncate at apex ..... **27**

- 27(26). Pronotum, head and legs reddish, elytra and ventral surfaces black to very dark brown; discal interstitial scales shorter than interstitial width and 2.0 times longer than wide; anterior margin of pronotum with six relatively large, basally contiguous, narrow, acute serrations; length 1.1 mm, 2.4 times longer than wide; Saint Lucia ..... ***H. versicolor* Bright, sp. nov.** (p. 176)  
 — Body black to brown, uncolored; other characters not as above ..... **28**
- 28(27). Frons moderately concave in center with a narrow, glabrous, longitudinal area extending to epistomal margin, remainder of frons between eye densely pubescent; anterior margin of pronotum with six widely separated serrations, median pair minute; each elytral interstriae with a median row of erect, spatulate scales, these as long as interstitial width and spaced in row by a distance less than their length, closer on declivity; length 1.7 mm, 2.7 times longer than wide; Guadeloupe ..... ***H. dubitalis* Bright, sp. nov.** (p. 134)  
 — Frons convex, with a narrow, longitudinal smooth space or narrow groove, not densely pubescent; anterior margin of pronotum with two or more serrations, these either nearly equal in size or median pair longer; elytral vestiture not as above; length variable ..... **29**
- 29(28). Discal striae distinctly impressed, punctures larger; each declivital interstriae with a median row of distinct granules ..... **30**  
 — Discal striae weakly to not impressed, punctures variable; declivital interstriae with a median row of very small granules or without distinct granules ..... **33**
- 30(29). Anterior margin of pronotum with four equal-sized serrations; each erect interstitial scale on declivity 2.0–4.0 times longer than wide; declivity shining, interstitial granules very small; length 1.3–1.4 mm, 2.4 times longer than wide; U. S. Virgin Islands .....  
 ..... ***H. adustus* Bright, sp. nov.** (p. 122)  
 — Anterior margin of pronotum with two equal-sized serrations; declivity dull or shining; length 1.3–1.9 mm, 2.1–2.2 times longer than wide; Curaçao ..... **31**
- 31(30). Length 1.8–1.9 mm, 2.1 times longer than wide; declivity very dull, densely reticulate, interstitial granules very large and distinct; female frons with a small, median fovea and a shining, longitudinal smooth space extending from epistoma to fovea .....  
 ..... ***H. granulatus* Bright, sp. nov.** (p. 144)  
 — Length less than 1.8 mm; declivity shining, interstitial granules very small; female frons lacking a median fovea or a smooth, longitudinal space ..... **32**
- 32(31). Length 1.6–1.7 mm, 2.1 times longer than wide; interstitial scales on declivity longer than interstitial width and more slender, more than 4.0 times longer than wide .....  
 ..... ***H. ponticus* Bright, sp. nov.** (p. 164)  
 — Length 1.3–1.5 mm, 2.2 times longer than wide; interstitial scales on declivity shorter than interstitial width, very broad, 2.0 times longer than wide .....  
 ..... ***H. leptosquamus* Bright, sp. nov.** (p. 152)
- 33(29). Declivity steeply flattened, weakly impressed at middle; posterolateral portion of pronotum with erect and recumbent hairlike setae; length 1.9–2.2 mm; British Virgin Islands, Puerto Rico ..  
 ..... ***H. amplissimus* Bright and Torres** (p. 124)  
 — Declivity evenly convex; length less than 2.0 mm ..... **34**
- 34(33). Anterior margin of pronotum with two large serrations; posterolateral portion of pronotum with intermixed very narrow scales and hairlike setae; length 1.4–1.8 mm; widely distributed .....  
 ..... ***H. rotundicollis* (Eichhoff)** (p. 167)  
 — Anterior margin of pronotum with four serrations, lateral pair smaller; posterolateral portion of pronotum with intermixed wide scales and hairlike setae ..... **35**

- 35(34). Pronotum with erect asperities on anterior slope, no other supplementary granules or small asperities on summit area; length 1.5–2.2 mm; widely distributed ..... *H. erectus* LeConte (p. 134)
- Pronotum with numerous, small granules or asperities clustered on or posterior to summit area, in addition to coarse, erect asperities on anterior slope ..... **36**
- 36(35). Posterior half of elytra densely rugose-reticulate, dull; pronotum dull, minutely granulate between asperities on anterior slope; length 1.9–2.0 mm; Greater Antilles ..... *H. opacus* (Eichhoff) (p. 159)
- Posterior half of elytra smooth and shining; pronotum reticulate between asperities on anterior; length 1.4 mm; Saint Lucia, Montserrat ..... *H. collinus* Bright, sp. nov. (p. 129)
- 37(24). Basal half of pronotum with hairlike setae ..... **38**
- Basal half of pronotum with intermixed scales and setae ..... **40**
- 38(37). Interstitial scales shorter than interstitial width, most deeply divided into two filaments; anterior margin of pronotum armed with four, large serrations, median pair basally contiguous and slightly longer than lateral pair; posterior half of pronotum dull, densely reticulate, with scattered small granules; length 1.5 mm; Saint Thomas in U. S. Virgin Islands ..... *H. bifurcatus* Bright, sp. nov. (p. 127)
- Interstitial scales variable in length, all entire, none divided into two filaments; anterior margin of pronotum variable; posterior half of pronotum shining or dull, with punctures or obscure granules ..... **39**
- 39(38). Discal interstriae with a median row of erect, very narrow setae, these slightly longer than interstitial width; declivity with abundant, recumbent, hairlike setae; length 1.1–1.2 mm; Virgin Islands ..... *H. crinatus* Bright, sp. nov. (p. 131)
- Discal interstriae with a median row of hairlike setae; declivity with very short, striae setae and longer, interstriae setae; length 1.1 mm; Cuba ..... *H. pilosus* Hopkins (p. 163)
- 40(37). Interstitial scales on declivity very slender, 8.0 times longer than wide, slightly flattened .... **41**
- Interstitial scales on declivity strongly flattened, each scale less than 5.0 times longer than wide ..... **42**
- 41(40). Discal interstitial scales slightly wider than those on declivity; elytral declivity steep, confined to posterior fourth; interstitial punctures finely granulate on basal half of disc; length 1.3–1.7 mm; Greater Antilles ..... *H. interstitialis* (Hopkins) (p. 148)
- Discal and declivital interstitial scales equal in width, very slender, almost hairlike; elytral declivity gradual, extending almost to middle of elytra; interstitial punctures on basal half of disc not at all granulate; length 1.4–1.7 mm; Jamaica, Puerto Rico ..... *H. hampei* (Ferrari) (p. 145)
- 42(40). Pronotum and often elytra dull, minutely reticulate or rugose; frons often with a deep, narrow, median longitudinal groove extending from epistoma to upper level of eyes or groove absent; discal striae moderately impressed, wider than interstriae; length 1.3–1.8 mm; widely distributed ..... *H. obscurus* (Fabricius) (in part) (p. 156)
- Pronotum and elytra shining, smooth; frons evenly convex to weakly, transversely impressed, with or without a median groove, carina or smooth space; discal striae variable, impressed or not impressed ..... **43**
- 43(42). Declivital striae strongly impressed; declivital interstriae narrower than striae, narrowly convex, armed with a median row of small, pointed granules, these equally developed to apices of all interstriae ..... **44**
- Declivital striae weakly to moderately impressed; declivital interstriae usually as wide as or wider than striae, interstitial granules small, rounded or not present ..... **46**

- 44(43). Frons densely minutely reticulate, with a distinct, longitudinal, shining, median carina extending from epistomal margin to well above upper margin of eyes; declivital scales 2.0 times longer than wide, apex truncate; length 1.3 mm; Curaçao ..... *H. vernaculus* Bright, sp. nov. (p. 174)
- Frons punctured or reticulate, without a longitudinal carina; declivital scales 2.0–4.0 times longer than wide; length 1.2–1.5 mm ..... **45**
- 45(44). Declivity steep, appearing slightly flattened; interstitial scales on disc 2.0 times longer than wide, becoming 4.0 times longer than wide on declivity, separated in row by a distance less than length of scale; length 1.3–1.5 mm; Bahamas, Cuba ..... *H. squamosus* (Hopkins) (p. 171)
- Declivity more sloping, convex; interstitial scales on disc more slender, 4.0 times longer than wide, those on declivity very slightly longer, separated in row by a distance length of scale; length 1.2 mm; Barbados ..... *H. parasquamosus* Bright, sp. nov. (p. 160)
- 46(43). Vestiture on elytral declivity consisting of uniseriate rows of interstitial scales and rows of fine, short, strial setae ..... **47**
- Vestiture of elytral declivity consisting of uniseriate rows of interstitial scales and rows of fine, short, strial setae and dense, hairlike, randomly placed setae, especially noticeable on posterior-lateral areas ..... **50**
- 47(46). Frons with a small, rounded, median tubercle or a small, round, smooth, brightly shining, median space or a very fine, obscure puncture at upper level of eyes; lower half of frons shallowly, transversely concave, often with a variable, shallow, longitudinal, median groove ending dorsally at median tubercle; length 1.4–1.6 mm; widely distributed ..... *H. crudiae* (Panzer) (in part) (p. 131)
- Frons almost uniformly convex or very weakly, transversely impressed above epistoma, without a median tubercle or swelling ..... **48**
- 48(47). Pronotum, legs and antennae reddish, elytra, head and ventral portions of body black; elytra densely reticulate, minutely micro-punctate; length 1.2 mm, 2.7 times longer than wide; Netherlands Antilles (Saba) ..... *H. rubrithorax* Bright, sp. nov. (p. 168)
- Body black to dark or light brown; elytral striae punctured in obvious rows; length 1.3–1.6 mm; widely distributed ..... **49**
- 49(48). Interstitial scales on elytra broad, 2.0 times longer than wide, truncate at apex, those on declivity slightly larger and broader than those on disc, separated in row by a distance less than length of scale; frons very weakly impressed above epistoma ..... *H. exceptus* Bright, sp. nov. (p. 139)
- Interstitial scales on elytra more slender, linear, 4.0–6.0 times longer than wide, those on declivity same size as those on disc, separated in row by a distance slightly more than length of scale; frons evenly convex ..... *H. obscurus* (Fabricius) (in part) (p. 156)
- 50(46). Interstitial scales on declivity broad, 1.5–2.0 times longer than wide, separated in row by a distance less than length of scale; elytral striae on declivity distinctly impressed, wider than interstriae; length 1.0–1.1 mm; widely distributed ..... *H. pubescens* Hopkins (p. 165)
- Interstitial scales on declivity equal in length to or greater than distance between rows and each more than 3.0 times longer than wide ..... **51**
- 51(50). Interstitial setae on elytral apex densely placed, setae as long as adjacent erect scales; anterior margin of pronotum with six equal-sized, widely separated serrations; length 1.2 mm; widely distributed ..... *H. glabratulus* (Schedl) (in part) (p. 142)
- Interstitial setae on elytral apex less densely placed, not conspicuous, each seta definitely shorter than erect scales; other characters not as above ..... **52**

- 52(51). Postero-lateral portion of pronotum densely punctured or finely granulate; body slender, 2.5 times longer than wide; length 1.0–1.3 mm; widely distributed ..... *H. californicus* Hopkins (p. 127)
- Postero-lateral portion of pronotum smooth, shallowly punctured or with very fine, widely separated granules; body stouter, usually less than 2.5 times longer than wide ..... **53**
- 53(51). Anterior margin of pronotum narrowly rounded, median pair of serrations subcontiguous or narrowly separated; declivital interstitial scales 3.0–5.0 times longer than wide; length 1.0–1.4 mm, 2.4–2.6 times longer than wide; widely distributed ..... *H. eruditus* Westwood (in part) (p. 136)
- Anterior margin of pronotum broadly rounded, median pair of serrations widely separated; declivital interstitial scales 6.0–8.0 times longer than wide; length 1.2–1.4 mm, 2.6 times longer than wide; Cuba ..... *H. gossypii* Hopkins (in part) (p. 143)
- 54(23). Frons weakly, transversely impressed or flattened, sometimes with a small, weakly elevated median tubercle or a small swelling at upper margin of impression ..... **55**
- Frons distinctly concave or transversely impressed, usually with a long, transverse elevation at upper level of impression ..... **60**
- 55(54). Each elytral interstriae with a row of long, slender, hairlike setae; posterior half of pronotum with hairlike setae, no flattened scales present; anterior margin of pronotum with four serrations, median pair much larger; pronotal slope with 12 large asperities; length 1.6–1.7 mm; Jamaica, Saint Vincent ..... *H. fuscicollis* (Eichhoff) (p. 140)
- Each elytral interstriae with a median row of flattened scales; body usually smaller than 1.7 mm ..... **56**
- 56(54). Pronotal summit not distinctly elevated; anterior margin of pronotum with six widely separated serrations; declivity with abundant interstitial vestiture; length 1.2 mm; widely distributed ..  
..... *H. glabratus* (Schedl) (in part) (p. 142)
- Pronotal summit distinctly elevated, usually with a transverse impression behind summit; anterior margin of pronotum variable; declivity with interstitial rows of scales and striae rows of short setae ..... **57**
- 57(56). Frons distinctly impressed, median tubercle or elevation on upper level margin of impression distinct; length 1.4–1.6 mm; widely distributed ..... *H. crudiae* (Panzer) (in part) (p. 131)
- Frons very shallowly, almost imperceptibly impressed; median tubercle or elevation, if present, usually very small, indistinct; length 1.1–1.4 mm or 1.6–1.7 mm ..... **58**
- 58(57). Length 1.6–1.7 mm; frons very densely minutely reticulate, dull, median tubercle weakly elevated but distinct; elytra with striae weakly impressed, interstriae smooth, shining, with a median row of short scales; Puerto Rico ..... *H. obscurifrons* Bright, *sp. nov.* (p. 155)
- Length 1.1–1.4 mm; frons punctured, mostly shining; striae and interstriae not as above.... **59**
- 59(58). Anterior margin of pronotum narrowly rounded, median pair of serrations subcontiguous or narrowly separated; declivital interstitial scales 3.0–5.0 times longer than wide; length 1.0–1.4 mm, 2.4–2.6 times longer than wide; widely distributed ..... *H. eruditus* Westwood (in part) (p. 136)
- Anterior margin of pronotum broadly rounded, median pair of serrations widely separated; declivital interstitial scales 6.0–8.0 times longer than wide; length 1.2–1.4 mm, 2.6 times longer than wide; Cuba ..... *H. gossypii* Hopkins (in part) (p. 143)
- 60(54). Interstitial ground vestiture present, consisting of fine, abundant, randomly placed setae, especially noticeable on lateral areas; length usually 1.1–1.8 mm long, 2.4–2.8 times longer than wide .  
..... **61**

- Interstitial ground vestiture absent, interstitial scales and strial setae present; length usually 1.3–2.0 mm long, 2.3 times longer than wide ..... **64**
- 61(60). Length 1.8 mm, 2.5 times longer than wide; surface of frons brightly shining and densely pubescent, setae as long as scape; Netherlands Antilles (Saint Eustatius) ..... ***H. villosus* Bright, sp. nov.** (p. 176)
- Length less than 1.5 mm, setae on surface of frons sparse, much shorter than scape ..... **62**
- 62(61). Interstitial scales on declivity usually more than 4.0 times longer than wide; lower half of frons flattened, transverse elevation above impression weakly developed; posterior half of pronotum smooth, shining; length 1.2–1.4 mm; Bahamas, Puerto Rico, Virgin Islands, Saint Lucia ..... ***H. arecae* (Hornung)** (p. 125)
- Interstitial scales on declivity 2.0–4.0 times longer than wide; lower half of frons more strongly impressed ..... **63**
- 63(62). Transverse elevation on frons above impression strongly elevated, carinate; length 1.1–1.3 mm, 2.5 times longer than wide; widely distributed ..... ***H. columbi* Hopkins** (p. 129)
- Upper margin of transverse impression on frons rounded, not carinate; body 1.4 mm, 2.8 times longer than wide; Cayman Islands ..... ***H. inordinatus* Bright, sp. nov.** (p. 148)
- 64(60). Anterior margin of pronotum bearing four basally contiguous serrations, these slightly smaller than pronotal asperities; pronotum reddish, elytra black; length 1.1 mm, 2.3 times longer than wide; Martinique ..... ***H. tectus* Bright, sp. nov.** (p. 173)
- Serrations on anterior margin of pronotum usually equal in size or larger than pronotal asperities; length greater than 1.1 mm ..... **65**
- 65(64). Interstitial scales on declivity almost as long as distance between rows, each scale broad, 2.0–3.0 times longer than wide; posterolateral areas of pronotum smooth, shining, with small, abundant punctures; frons concave; anterior margin of pronotum with four serrations, these often arranged into two widely separated pairs; length 1.7–2.0 mm; widely distributed ..... ***H. africanus* (Hopkins)** (p. 123)
- Interstitial scales on declivity shorter than distance between rows, each scale more slender, at least 3.0–6.0 times longer than wide; posterolateral areas of pronotum reticulate to rugose-punctate, with fine, shallow punctures; frons more distinctly transversely impressed; asperities on anterior margin of pronotum variously arranged but not as above ..... **66**
- 66(64). Upper margin of impression on frons rounded, not elevated into a transverse carina, with a small, rounded tubercle; length 1.4–1.5 mm; Saint Lucia, Grenada ..... ***H. improvidus* Bright, sp. nov.** (p. 147)
- Upper margin of impression on frons with a sharply elevated, transverse carina ..... **67**
- 67(66). Body 2.4 times longer than wide; anterior slope of pronotum with more than 25 small asperities; anterior margin of pronotum with six to eight serrations; length 1.6–1.8 mm; widely distributed ..... ***H. setosus* (Eichhoff)** (p. 170)
- Body 2.2–2.3 times longer than wide; anterior slope of pronotum with 12–18 coarse asperities; anterior margin of pronotum armed by two to four serrations; length 1.3–1.7 mm; widely distributed ..... ***H. javanus* (Eggers)** (p. 150)

***Hypothenemus adustus* Bright, sp. nov.**

Figure 79.

**Type Material.** HOLOTYPE (female) labeled: “VIRGIN IS., Saint John, Est. Lameshur Bay, Yawzi Point Trail, 18 July 1994, night, M. S. Becker, beating” / “HOLOTYPE *Hypothenemus adustus* D. E. Bright 2016” (WIBF [CNCI]). PARATYPES (2): 1 labeled: “VIRGIN IS., Saint John, Est. Lameshur

Bay, Lt. Europa to Europa Bay, 20 July 1994, M. S. Becker, beating" (WIBF); 1 labeled: "VIRGIN IS., Buck Island, Buck Island Reef N. M., 08 JAN 1992, general coll., VIBFP collrs." (WIBF).

**Description (Female).** Length 1.3–1.4 mm, 2.4 times longer than wide; light brown. Frons evenly convex, very weakly transversely impressed above epistoma, devoid of any modifications; surface dull, densely reticulate. Pronotum 1.15 times wider than long widest on basal third; sides broadly arcuate, broadly rounded anteriorly; anterior margin with four small, equal sized serrations; summit high; anterior slope steeply declivous, with ten large, coarse, strongly elevated serrations in addition to those clustered around summit; posterior portion dull, densely reticulate, with scattered, very fine, shining granules and with intermixed erect, fine setae and erect, very narrow scales. Elytra 1.5 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae moderately deeply impressed, with large, deeply impressed punctures; discal interstriae as wide or very slightly wider than striae, moderately shining, weakly convex, each with a median row of several, erect, flattened, narrow scales, these much shorter than interstitial width, 2.0–3.0 times longer than wide and rounded at tip, becoming much more abundant and wider toward declivity. Declivity steeply, evenly convex; striae more deeply impressed than on disc, with large, distinct punctures; interstriae as wide as striae, each with a median row of small, distinct, rounded granules and a median row of short, broad scales, these separated in row by a distance equal to or less than their length, each 1.5–2.0 times longer than wide, with a truncate apex.

**Male.** Unknown.

**Distribution.** This species is known from Saint John and Buck Island in the U. S. Virgin Islands.

**Etymology.** From *adustus*, Latin for brown, referring to color of adult.

**Comments.** Females of this species somewhat resemble those of *H. rotundicollis* but differ by their smaller size, by the distinctly impressed declivital striae, by the distinctly granulate declivital interstriae and by the short, broad, closely placed scales. The frons of the females is evenly convex, dull, reticulate and without any notable modifications.

### ***Hypothenemus africanus* (Hopkins)**

Figure 80.

*Stephanoderes africanus* Hopkins 1915a: 30.

*Hypothenemus africanus*: Wood and Bright 1992: 906; Bright and Skidmore 1997: 190; Bright and Skidmore 2002: 140; Bright and Torres 2006: 404; Wood 2007: 523.

*Hypothenemus concavifrons* Bright and Torres 2006: 405. (Puerto Rico). **New Synonymy.**

**Description (Female).** Length 1.7–2.0 mm, 2.5 times longer than wide; uniformly reddish-brown. Frons distinctly concave on a circular area extending from epistomal margin to well above eyes; surface of concavity brightly shining, minutely reticulate, with abundant, moderately long, yellowish setae, these almost as long as those along epistomal margin, median line glabrous; surface above and lateral to concavity shining, minutely reticulate, glabrous. Pronotum 1.1 times wider than long; sides broadly arcuate, broadly rounded anteriorly; anterior margin with four large serrations, these arranged into two widely separated pairs; summit high; anterior slope steeply declivous, with 30 large, coarse, strongly elevated serrations; posterior portion brightly shining, with numerous, fine punctures and rugae, with intermixed erect, fine setae and erect, narrow scales. Elytra 1.6–1.7 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae very weakly impressed, with large, deeply impressed punctures, each striae with numerous very short setae, each slightly longer than diameter of puncture; discal interstriae as wide or very slightly wider than striae, moderately shining, weakly convex, with an even median row of erect, flattened, narrow scales, these 3.0 times longer than wide and truncate at tip. Declivity evenly convex; striae as on disc except less distinctly impressed; recumbent ground setae slightly longer and more abundant.

**Male.** Unknown.

**Distribution.** This species is known from South Africa, Malaysia and Indonesia and in the southern United States to northern South America. It probably occurs throughout the West Indies.

**Specimens examined.** **CAYMAN ISLANDS: Grand Cayman**, 14.VII.1992, blacklight trap: Fitzgerald (1-FSCA). **DOMINICAN REPUBLIC:** Barahona, Barahona, 8–29–30.1997, R. Baranowski and C. W. O'Brien (1-CNCI). **HAITI:** Port-au-Prince, Damiens, XI.9.1959 / collector A. M. Nadler (1-AMNH). **JAMAICA:** intercepted at New York in *Poinciana* pods (3-USNM). **MARTINIQUE:** 1 km E Diamant, N14°29.4', W61°02.5', 7–23.VII.2010 / 10 m, thorn forest flight intercept trap, S. and J. Peck (3-SBPC). **MONTSERRAT:** Brades, 6.V.1993: Jeffers, blacklight trap (1-FSCA). **NETHERLANDS ANTILLES: Curaçao**, Piscadera Baai, 12°07'20"N, 68°58'06"W, 10 Nov. 2014, R. Turnbow (1-FSCA). **PUERTO RICO:** Island record only, 29.I.47, *Poinciana* dried pod, intercepted New York (1-USNM); Guánica, III.1997, M. Canals, light trap (2-USNM); Cayey, 1.VIII.1994, in *Delonix regia* pods; Guánica, 15.IV.1996, ex: light trap (1-CNCI). **VIRGIN ISLANDS (BRITISH): Tortola**, SE C and W Station (?), 1375', Petrovic's, 18°25.47'N, 64°38.86'W, beating, 21 Oct 2002, M. A. Ivie (1-WIBF).

**Comments.** The frons of the female is distinctly and deeply concave on a large circular area that extends from very near the epistomal margin to well above the eyes and laterally occupies slightly less than the median three-fourths and which bears numerous long, erect setae except on a longitudinal median area. The anterior margin of the pronotum usually bears four large, distinct, widely separated serrations often arranged in two widely separated pairs. The anterior slope of the pronotum bears 30 large, distinct asperities and the elytra bears ground vestiture of numerous, short, recumbent setae. I am not aware of any other species of *Hypothenemus* in North America or the West Indies with the above combination of characters. The one specimen from Curaçao listed above is atypical; the usual four large serrations on the anterior margin of the pronotum are missing, evidently worn away or broken off. The specimen is otherwise typical of *H. africanus*.

The treatment above is based on the holotype and a metatype of *H. africanus* in the USNM and on the holotype of *H. concavifrons* in the CNCI.

### *Hypothenemus amplissimus* Bright and Torres

Figure 81.

*Hypothenemus amplissimus* Bright and Torres 2006: 404.

**Description (Female).** Length 1.9–2.2 mm, 2.3 times longer than wide; light reddish-brown, head and pronotum slightly darker. Frons evenly convex, without median elevation, transverse carina, or longitudinal groove; surface moderately shining, minutely reticulate, with fine, scattered granules and very faint, longitudinal scratches or rugosities. Pronotum 1.3 times wider than long; sides broadly arcuate, broadly rounded anteriorly; anterior margin with two large, basally contiguous serrations; summit high; anterior slope steeply declivous, with 14 coarse, strongly elevated serrations; posterior portion brightly shining, with numerous, fine punctures and with erect, fine setae, scalelike setae absent. Elytra 1.5–1.6 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae weakly impressed, with large, deeply impressed punctures, each puncture with a very short seta as long as diameter of puncture; discal interstriae 1.5–2.0 times wider than striae, brightly shining, weakly convex, with more weakly impressed, often scattered (usually 2-ranked) punctures, each with a median row of scattered, erect, flattened, narrow scales, these becoming more abundant toward declivity. Declivity steeply convex, interstriae 1 and 2 flattened or very weakly, transversely impressed in median area; striae slightly more deeply impressed than on disc, with punctures more obscure; interstriae 3 slightly more convex, weakly elevated, with very obscure, fine granules; vestiture abundant, consisting of dense interstitial scales, these in a single median row in interstriae 1, arranged in partial double row in remaining interstriae and with very short scalelike setae along margin of interstriae, each striae puncture with a very short seta; interstitial scales truncate at apex, slightly longer than interstriae, placed closer than scale length in rows.

**Male.** Unknown.

**Distribution.** This species is known from Guana Island in the British Virgin Islands and Puerto Rico.

**Specimens examined.** **PUERTO RICO:** Guánica, 8.VII.89, J. Torres / *Serjania polyphylla* vine (5-CNCI). **VIRGIN ISLANDS (BRITISH): Guana Island**, 15–21.X. 01, B. and B. Valentine, beating (1-WIBF); The Flat, 10

July 1994, M. A. Ivie (2-WIBF); La Ping Trail, 28 Oct 1992, beating, L. L. and M. A. Ivie (3-WIBF); Quail Dove Ghut, 31 Oct-13 Nov 1992, 400 ft., M. A. Ivie, flight intercept trap #5 (1-WIBF).

**Comments.** Adults of this species may be characterized by their larger size, by the strongly convex pronotum with 14 large asperities on the anterior slope, by the flattened to weakly impressed elytral declivity with abundant, closely placed scales as long as interstitial width and by the weakly elevated declivital interstriae 3. This is one of the largest species of *Hypothenemus* so far seen from the West Indies. It is one of five or six species in North America that have the combination of two serrations on the anterior pronotal margin, less than 20 asperities on the anterior slope of the pronotum and setae on the posterior half of the pronotum. The present species differs by the specific characters mentioned above.

In the original description of this species, I mentioned that the holotype and one paratype would be deposited in the USNM. However, all the Puerto Rican specimens listed above were collected by J. A. Torres and are all deposited in the CNCI. One paratype is in the USNM.

***Hypothenemus areccae* (Hornung)**

Figure 82.

*Bostrichus areccae* Hornung 1842: 117.

*Hypothenemus areccae*: Wood and Bright 1992: 906; Bright and Skidmore 1997: 190; Bright and Skidmore 2002: 140; Wood 2007: 522.

*Stephanoderes obscurus* Eichhoff 1872: 133 (Antilles), preoccupied by Fabricius 1801: 395; Wood 2007:522.

*Stephanoderes depressus* Eichhoff 1878b: 155 (replacement name for *obscurus* Eichhoff); Wood 2007: 522.

*Stephanoderes martiniquensis* Eggers 1941: 99 (Martinique).

**Description (Female).** Length 1.2–1.4 mm (occasional specimens 1.6 mm in length), 2.4 times longer than wide; dark brown. Frons weakly but distinctly, transversely impressed from epistoma to upper eye level, convex above impression, upper margin of impression elevated into a weak crest sometimes with an obscure, median tubercle on crest; surface of impressed area smooth, shining, with small, close punctures, sometimes with a faint longitudinal carina on lower half, area above impressed area minutely reticulate. Pronotum 1.2 times wider than long, widest at base; sides arcuate; anterior margin broadly rounded, with six to eight large, separated serrations; summit at middle; anterior slope with 25 or more coarse, strongly elevated asperities; posterior portion brightly shining, with numerous, fine punctures or fine rugosities, with recumbent, fine setae and slender scales. Elytra 1.7 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae weakly impressed, with small, obscure punctures; discal interstriae 1.5–2.0 times wider than striae, moderately shining, each with a median row of erect, flattened scales 3.0 times longer than wide with truncate tips. Declivity convex, as on disc except interstitial scales slightly longer; interstitial setae conspicuous, slightly shorter than interstitial scales.

**Male.** Unknown.

**Distribution.** This species is widespread throughout the tropical and subtropical regions of the world. In the West Indies it is known from the Bahamas, Puerto Rico, Saint Lucia and the Virgin Islands. Wood and Bright (1992) record Martinique.

**Specimens examined.** **BAHAMAS:** intercepted at West Palm Beach, FL, V.19.60, in *Delonix regia* (1-CNCI). **PUERTO RICO:** Mayagüez, X.2.1913 / Fed. Exp. Sta. / in mummified cacao pods (1-USNM). **SAINT LUCIA:** Union Agricultural Station, 11.IX.1986, Crop Protection Unit (1-FSCA). **VIRGIN ISLANDS (BRITISH):** Guana Island, 1-7.X.01, B. and B. Valentine, beating (1-WIBF).

**Record from literature.** **BAHAMAS:** Island record only (Turnbow and Thomas 2008). **MARTINIQUE:** Island record only (Wood and Bright 1992).

**Comments.** Adults of this species closely resemble those of *H. columbi* but may be distinguished by the slightly longer interstitial scales on declivity, these usually more than 4.0 times longer than wide, by the weakly elevated frontal carina, with the lower portion of the frons flattened, by the shining posterior half

of pronotum and by the slightly larger size. Specimens were compared to specimens in the Wood collection (USNM) that had previously compared to type material of various synonyms. A lectotype was designated by Wood in 1974.

This species is common in numerous species of herbs, shrubs and trees (Wood 2007).

### ***Hypothenemus atomus* Hopkins**

Figure 83.

*Hypothenemus atomus* Hopkins 1915a: 15.

*Trischidias atoma*: Wood and Bright 1992: 947; Bright and Skidmore 1997: 197; Bright and Skidmore 2002: 146; Wood 2007: 527.

**Description (Female).** Length 0.7–1.0 mm, 2.3 times longer than wide; reddish-brown. Frons convex, very weakly transversely impressed above epistoma, with an indistinct, shallow, median groove or impression extending from epistoma to upper eye level, this impression often not visible; surface dull, minutely reticulate. Pronotum 1.1 times wider than long, widest at base; sides broadly rounded; anterior margin narrowly rounded, with four or six serrations, median pair basally contiguous, distinctly longer; summit distinctly elevated; anterior slope with numerous, small, scattered asperities; posterior half smooth, dull, minutely reticulate, with scattered, very small granules and very short, semirecumbent, hairlike setae and very short, erect scales, scales rounded at tip, as long as wide. Elytra 1.5 times longer than wide; sides weakly arcuate on basal half, converging to broadly rounded apex; discal striae weakly impressed, punctured in regular rows, punctures small, shallowly impressed, separated by a distance equal to diameter of puncture, each with a minute seta; discal interstriae narrower than striae, each with a median row of erect, short, broad scales, each scale 1.5–2.0 times longer than wide, as long as interstitial width, apex truncate. Declivity evenly convex; striae and interstriae as on disc.

**Male.** Length 0.5–0.6 mm, otherwise similar to female.

**Distribution.** This species occurs in the eastern United States from Washington D. C. and New Jersey to Texas and the Florida Keys. It is evidently introduced to Brazil (Wood 2007). In the West Indies it is recorded from the Dominican Republic to Saint Lucia and probably occurs throughout the West Indies.

**Specimens examined.** **DOMINICA:** Springfield Estate, 30.V-16.VI.2004, 830–860 m, mature second forest flight intercept trap, S. and J. Peck (1–SBPC). **DOMINICAN REPUBLIC:** Province Hato Mayor, Par. Nac. Los Haitises, W. of Sabana de la Mar, Bosque Humido, 01–02 Apr 1992, litter, M. A. Ivie (1–WIBF). **MARTINIQUE:** 4 km SW Le Marin, Morne Aca, 260 m, N14°27.8, W60°53.9 / humid forest hilltop clearing flight intercept trap, 13–28.VI.2012, S. Peck (2–SBPC); 5 km SE Le Marin, Forest Creve, Coeur, 35 m, N14°27.05, W60°50.51 / dry forest uv trap, 10–28.VII.2012, S. Peck, collr. (1–SBPC). **PUERTO RICO:** Along hwy. 52, west side rest area, Puertorriqueno, near hwy. marker 50 km, 18°4'16.251"N, 66°13'7.1574"W, III.20.2011, S. J. Seybold / fallen branch of *Albizia procera*, 6–10 cm dia. pieces, emerged in lab., VI and VII.2011 (1–CNCI); Guaynabo, VI.2000, J. Torres / ex light trap (1–CNCI); Island record only, EDRR, Site 6, 30.VII.2014 (1–MSUC). **SAINT LUCIA:** Praslin, 50 m, 25.VII.2007 / lowland woodland ravine flight intercept trap, S. and J. Peck (1–SBPC). **VIRGIN ISLANDS (U. S.): Saint Croix,** Estate North Star, 18 Dec-06 Jan 1993, 60 ft., flight intercept trap #7, J. Keularts (1–WIBF); Est. Fountain, 350 ft., 20 Apr-19 May 1993, J. Keularts, flight intercept trap #15 (1–WIBF).

**Record from literature.** **CUBA:** Island record only (Vázquez et al. 2003).

**Comments.** Adults of this species may be distinguished from the other species in the genus by the more slender body form, by the short, broadly flattened scales in the elytral interstriae, these as long as interstitial width and by the narrowly rounded anterior margin of the pronotum which bears four or sometimes six serrations, the median pair larger. Adults resemble those of *H. solivagus* but differ by the much shorter, interstitial setae.

This species is recorded from a wide variety of host plants in the United States, especially *Acer*, *Asimina*, *Carya*, *Castanea*, *Cestrum*, *Ficus*, *Ilex*, *Rhododendron*, *Liriodendron*, *Pinus*, *Quercus*, *Rhizophora*, *Rhus*, *Robinia*, *Salix*, *Toxicodendron* and *Ulmus* (Wood and Bright 1992; Bright and Skidmore 1997). Vázquez et al. (2003) record *Cynodon* as a host in Cuba.

***Hypothenemus bifurcatus* Bright, sp. nov.**

Figure 132.

**Type Material. HOLOTYPE** (female) labeled: "VIRGIN IS: St. Thomas, Brewers Bay, 06 AUG.1980" / "M. A. Ivie" / "HOLOTYPE *Hypothenemus bifurcatus* D. E. Bright 2016" (WIBF [CNCI]).

**Description (Female).** Length 1.5 mm, 2.3 times longer than wide; very dark reddish-black. Frons convex; surface dull, densely minutely reticulate, with a narrow, longitudinal groove extending from epistomal margin to level with upper margin of eyes; vestiture very short, inconspicuous. Pronotum 1.18 times wider than long, widest slightly behind level of summit; sides weakly arcuate; anterior margin broadly rounded, bearing four, large serrations, median pair basally contiguous and slightly longer than lateral pair, lateral pair separated from median pair by a distance equal to basal width of serration; anterior slope with 25 relatively large asperities; summit distinctly elevated; posterior half dull, densely minutely reticulate and rugose-granulate, with scattered small granules, punctures absent; vestiture consisting of long hairlike setae. Elytra 1.5 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae slightly impressed, punctured in regular rows, punctures shallow, each bearing a seta as long as diameter of puncture; discal interstriae dull, minutely reticulate, as wide as to slightly wider than striae; each interstriae bearing a median row of very short scales, these shorter than width of interstriae and most deeply incised into two filaments. Declivity convex; striae as on disc but slightly less impressed and punctures smaller; interstriae as on disc.

**Male.** Unknown.

**Distribution.** This species is known from Saint Thomas in the U. S. Virgin Islands.

**Etymology.** From *bifurcus*, Latin for two-pronged or to divide into two branches, referring to the peculiar interstitial scales.

**Comments.** Females of this distinctive species may be recognized by the presence of deeply incised interstitial scales, by the dull, minutely reticulate posterior portion of the pronotum which bears hairlike setae, by the narrow, longitudinal groove on the frons and by the other characters mentioned in the above description. The antennal clubs are missing on the holotype.

***Hypothenemus californicus* Hopkins**

Figure 84.

*Hypothenemus californicus* Hopkins 1915a: 19; Wood and Bright 1992: 912; Bright and Skidmore 1997: 191; Bright and Skidmore 2002: 141; Wood 2007: 517.

**Description (Female).** Length 1.0–1.3 mm, 2.5 times longer than wide; dark brown to black. Frons convex, often weakly, transversely impressed above epistoma, with a weakly elevated median line extending from epistomal margin to upper eye level; surface minutely reticulate; vestiture inconspicuous. Pronotum as long as wide, sides parallel on basal two-thirds; anterior margin broadly rounded, usually bearing six widely separated, erect serrations; anterior slope bearing 15–20 erect asperities; posterior area shining, minutely reticulate, punctures faint, lateral portions closely, deeply punctured, usually with intermixed, scattered, fine granules; vestiture consisting of hairlike setae and slender scales, especially on posterior portion. Elytra 1.5–1.6 times longer than wide; sides parallel on anterior three-fourths, broadly rounded behind; discal striae not impressed, punctures small, shallow and obscure; discal interstriae shining, twice as wide as striae, punctures minute, obscure; vestiture consisting of uniseriate rows of erect interstitial scales, these twice as long as wide and short, slender, hairlike, striae setae. Declivity convex, not modified.

**Male.** Similar to female except smaller, length less than 1.0 mm; eye reduced in size and pubescence longer and more slender.

**Distribution.** This species is widespread from California and Texas and in the eastern and southern United States to Brazil and is recorded from the Galápagos Islands. It has not been previously recorded from the West Indies but possibly occurs throughout the region.

**Specimens examined.** **ANTIGUA:** Christian Valley, blacklight trap, 3.XI.1991, FAO Insect Survey (1–CNCI). **BAHAMAS:** Abaco Cays, Aliana Cay, May 9, 1953 / Van Voast-AMNH, E. B. Hayden (1–AMNH). **GRENADA:** St. Andrew, Mirabeau Agricultural Laboratory, 6.III.1990, R. E. Woodruff (1) and 10.IX.1990, J. Telesford (1), light trap (2–CNCI) (identity?). **PUERTO RICO:** Santa Isabella, Hwy. 1, km 96.2, IV-VII 2010, Lindgren trap (1–CNCI).

**Comments.** The identification of this species is extremely difficult and subject to various interpretations. The major features used by Wood (1982) to characterize the adults of this species are the presence of large, coarse punctures on the lateral portion of the pronotum and the slender body. Examination of the holotype in the USNM and additional specimens identified and compared to the type by Wood showed that these characters are very difficult to observe and evaluate. Adults of many species of *Hypothenemus* are as slender as those of *H. californicus* and the determining the presence of large punctures on the pronotum requires magnification of at least 200× and a good light source. My examination of hundreds of *Hypothenemus* specimens revealed a very few specimens that I could conceivably consider to be this species.

***Hypothenemus carinafrons* Bright, sp. nov.**

Figure 85.

**Type Material.** **HOLOTYPE** (female) labeled: “**CAYMAN: Cayman Brac:** Major Donald Dr., .6 km E. jct. Ashton Dr., 3 July 2013, R. Turnbow” / “**HOLOTYPE** *Hypothenemus carinafrons* D. E. Bright 2016” (RHTC [FSCA]). **PARATYPES** (2): 1 labeled: “**ST. VINCENT,** Charlotte P, Belle Vue, Colonarie Bay, 8–28–1991, C. W. & L. B. O’Brien” (CNCI); 1 labeled: “**CURAÇAO:** Weg Naar, Playa Kanoa, 12°9′37.82″N, 68°52′49.13″W, 10.XI.2014, M. C. Thomas, blacklight trap” (FSCA).

**Description (Female).** Length 1.0–1.1 mm, 2.5 times longer than wide; black, basal third of elytra with reddish tinge. Frons convex, bearing a distinct, shining, longitudinal carina extending from epistomal margin to upper level of eyes; surface shining, densely minutely punctate-granulate. Pronotum 1.1 times wider than long, widest slightly behind middle; sides slightly arcuate; anterior margin broadly rounded, bearing eight, narrow, elongate, acute serrations, these basally separated by a distance equal to their width; anterior slope bearing numerous, narrow, erect, acute asperities; posterior portion dull, minutely reticulate, with scattered, minute granules and abundant, erect, very short scales and recumbent, hair-like setae. Elytra 1.5 times longer than wide; sides parallel on anterior two-thirds, apex narrowly rounded; discal striae not impressed, punctures small, shallow, weakly impressed; discal interstriae smooth, shining, each with a median row of small, broad scales shorter than interstitial width. Declivity convex; surface as on disc except each interstriae bears a median row of minute granules in addition to small, broad scales.

**Male.** Unknown.

**Distribution.** This species is known from the Cayman Islands, Saint Vincent and Curaçao in the Netherland Antilles.

**Etymology.** From *carina* Latin for keel, and *frons*, referring to the presence of a carina on the frons.

**Comments.** Females of this species are distinctive in a number of characteristics. They may be distinguished by the presence of a short carina on the frons, by the evidently 2-segmented antennal funicle (pedicel excluded), by the oval antennal club with a chitinized suture 1 and by the presence of six large, erect and widely separated serrations on the anterior margin of the pronotum. All of these features seem to be unique among the species of *Hypothenemus* that I am familiar with. Other characters are mentioned in the key to species

***Hypothenemus collinus* Bright, sp. nov.**

Figure 86.

**Type Material.** HOLOTYPE (female) labeled: "WEST INDIES: SAINT LUCIA, Barre d'Isle Trail, 13°93'N, 60°96'W, 7.VIII.2009, 340 m" / "in pith of very small twigs, D. E. Bright, collr." / "HOLOTYPE *Hypothenemus collinus* D. E. Bright 2016" (CNCI). PARATYPES (20), all labeled with same data as holotype except 5 dated "8.VIII.2009" (CNCI, WIBF). One specimen, not designated as a paratype, is labeled "MONTSERRAT: Centre Hills, N. E. of Fleming Spring Ghaut, 750', 23 June 2000, K. A. Guerrero, leaf litter" (WIBF).

**Description (Female).** Length 1.4 mm, 2.3 times longer than wide; black. Frons evenly convex; surface weakly shining to dull, very minutely reticulate. Pronotum 1.3 times wider than long; sides broadly arcuate; anterior margin broadly rounded, bearing four serrations, median pair much longer, basally contiguous, lateral pair less than half as long as median pair; anterior slope bearing 25 small, erect asperities, these becoming densely placed granules at summit area; summit very slightly elevated; posterior area dull, densely reticulate and bearing numerous, scattered granules; vestiture consisting of hair-like setae on anterior slope, these becoming denser at summit area, posterior area with intermixed short setae and narrow scales. Elytra 1.4 times longer than wide; sides parallel on anterior three-fourths, apex broadly rounded; discal striae not impressed, punctures small, shallow and obscure; discal interstriae shining, 1.5 times wider than striae, punctures minute; vestiture consisting of a median, uniseriate row of erect scales in each interstriae, these twice as long as wide and very short, slender, hairlike, striae setae, no ground vestiture present. Declivity convex; interstriae as on disc except scales slightly longer and narrower.

**Male.** Unknown.

**Distribution.** This species is known from Montserrat and Saint Lucia.

**Etymology.** From *collinus*, Latin for of a hill, referring to the habitat locality of the holotype.

**Comments.** Females of this species may be distinguished from those of *H. opacus* by the shining basal portion of the elytra and by the smaller size.

Specimens were collected from the pith of very small, cut twigs of an unknown tree.

***Hypothenemus columbi* Hopkins**

Figure 87.

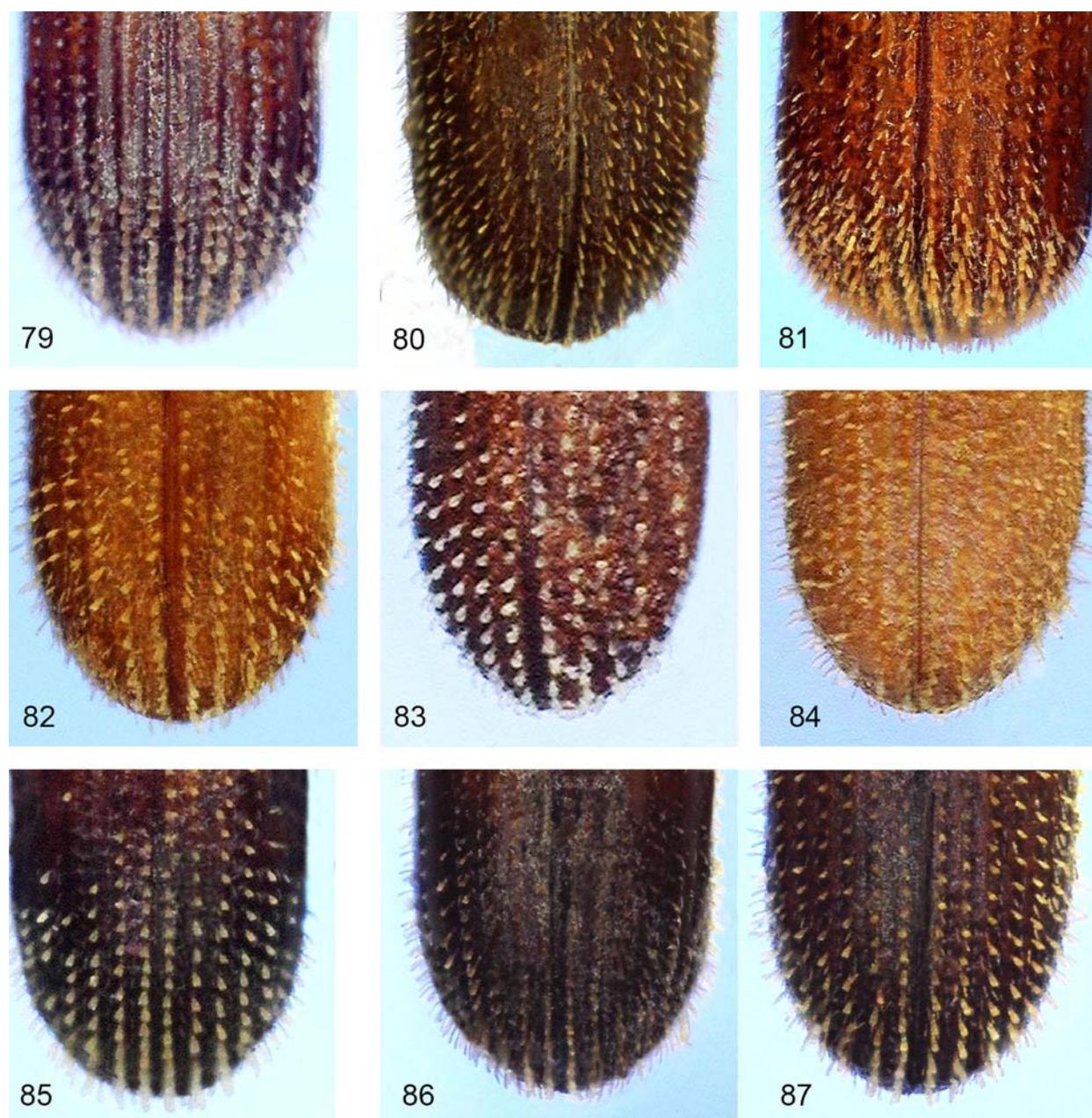
*Hypothenemus columbi* Hopkins 1915a: 18; Wood and Bright 1992: 912; Bright and Skidmore 1997: 191; Bright and Skidmore 2002: 141; Bright and Torres 2006: 405; Wood 2007: 523.

*Hypothenemus abdominalis* Hopkins 1915a: 18 (Cuba).

*Hypothenemus brunneipennis* Hopkins 1915a: 18 (Cuba).

*Hypothenemus amplipennis* Hopkins 1915a: 19 (Cuba).

**Description (Female).** Length 1.1–1.3 mm, 2.6 times longer than wide; dark brown. Frons distinctly, transversely impressed from epistoma to upper eye level, convex above impression, upper margin of impression elevated into a strongly elevated, subacute, short, median elevation; surface of impressed area smooth, shining, with small, close punctures, area above impressed area rugose-reticulate, deeply punctured. Pronotum 1.2 times wider than long, widest at base; sides arcuate; anterior margin broadly rounded, with six large, separated serrations; summit at middle; anterior slope with 25 or more coarse, strongly elevated asperities; posterior portion minutely reticulate, moderately shining, with recumbent, fine setae and slender scales. Elytra 1.7 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae weakly impressed, with small, distinct punctures; discal interstriae 1.5–2.0 times wider than striae, moderately shining, each with a median row of erect, flattened scales 2.0–3.0 times longer than wide with truncate tips. Declivity convex, as on disc except interstitial scales slightly longer and interstitial setae varying from sparse to abundant.



**Figures 79–87.** Declivities of *Hypothenemus* spp. **79)** *H. adustus*. **80)** *H. africanus*. **81)** *H. amplissimus*. **82)** *H. areccae*. **83)** *H. atomus*. **84)** *H. californicus*. **85)** *H. carinafrons*. **86)** *H. collinus*. **87)** *H. columbi*.

**Male.** Not present in material examined. Wood (2007) gives a description of the male.

**Distribution.** This species is recorded from the southeastern United States through the West Indies and Mexico to northern South America.

**Specimens examined.** **BARBADOS:** Turner's Hall Woods, 200 m, N13°14.46', W59°34.83', 16–28.VIII.05, forest flight intercept trap, S. and J. Peck (1–SBPC). **CUBA:** Cayamas (3–USNM); Holquin, La Melba: N. Alexander v. Humboldt, 20.44512–74.81242, 314 m, 22.ix.2014, R. Anderson, F. Cala-Riquelme, A. Deler Hernandez, 2014–010, rainforest litter (1–CMNO). **DOMINICA:** La Plaine, IX.24.1964, T. J. Spilman (2–USNM). **DOMINICAN REPUBLIC:** Independencia Province, ESE Jimani, S. Lago Limon, 18°24'N, 71°44'W, 23 Aug 1992, 20 m, beating, D. Sikes, J. Brodzinsky (1–WIBF). **GRENADA:** Saint Andrew Parish, Grand Bacolet, 7.XI.1989, A. Thomas, light trap (1–SBPC); Saint Andrew, Mirabeau Agriculture Laboratory, various dates and collectors in 1990, light trap (4–SBPC); Saint Georges, Min. Agricultural Botanic Gardens, 6.II.1990, A. Thomas, light trap (2–CNCI). **MARTINIQUE:**

4 km N Ste-Luce, Foret Montravail, 300 m, N14°29.9, W60°55.7, / humid forest flight intercept trap, 11–28.VII.2012, S. Peck (1–SBPC). **NAVASSA ISLAND:** near lighthouse, 80 m, 18°23.92'N, 75°00.74'W, 24 July–4 Aug. 1998, W. E. Steiner, J. M. Swearingen et al. / flight intercept/yellow pans in Malaise trap, edge of open weedy shrub and mixed forest (*Ficus*, *Metopium*, *Thrinax*) on limestone (4–USNM). **PUERTO RICO:** Guánica, III.1997, M. Canals (1–CNCI); Guánica, 15.IV.96, J. Torres, collr., ex: light trap (1–CNCI). **SAINT LUCIA:** Mon Repos, Fox Grove Inn, 90 m, 20–28.VII.2007, uv light, S. and J. Peck (1–SBPC); Praslin, 50 m, 25.VII.2007 (1–CNCI). **SAINT VINCENT AND THE GRENADINES: Saint Vincent**, Emerald Valley Hotel, Buccament, 12–19.VI.2007 (1) and 10–20.VI.2007 (1), dry forest, uv and flight intercept trap, S. and J. Peck (2–SBPC). **VIRGIN ISLANDS (U. S.): Saint Croix**, Sprat Hall, 01–15 OCT 1982, J. A. Yntema, vane trap w/ETOH (1–CNCI).

**Record from literature. BAHAMAS:** Island record only (Turnbow and Thomas 2008).

**Comments.** Adults of this species closely resemble those of *H. areccae* but differ by the slightly shorter interstitial scales, by the more abundant declivital setae, by the slightly smaller size and by the less shining posterior portion of the pronotum.

Host plants reported by Wood (2007) include species of *Bauhinia*, *Citrus*, *Cucurbita*, *Ficus*, *Ichthyomethia*, *Morus*, *Quercus*, *Salix* and *Serjania*. Vázquez et al. (2003) record *Carica* as a host in Cuba.

***Hypothenemus crinatus* Bright, sp. nov.**

Figure 88.

**Type Material. HOLOTYPE** (female) labeled: “**VIRGIN IS.: Saint Thomas**, Est. Bordeaux, 10 AUG 1980” / “ex Molasses and dung baited pitfall trap” / “M. A. Ivie” / “HOLOTYPE *Hypothenemus crinatus* D. E. Bright 2016” (WIBF [CNCI]). **PARATYPE** (1) labeled: “**VIRGIN IS.: St. John**, Catherineberg, 24 FEB 1984, litter, W. B. Muchmore” (CNCI).

**Description (Female).** Length 1.1–1.2 mm, 2.4 times longer than wide. Frons convex; surface dull except shining on a narrow, median space just above epistoma, remainder densely minutely reticulate. Pronotum 1.3 times wider than long, widest at base; sides broadly arcuate; anterior margin broadly rounded, with four large serrations, median pair basally contiguous; summit at middle; anterior slope with 20 small, strongly elevated asperities; posterior portion smooth, shining, with abundant, minute granules and fine hairlike setae. Elytra 1.5 times longer than wide; sides parallel on basal three-fourths, apex narrowly rounded; discal striae not impressed, with small, distinct punctures, each puncture with a distinct, long seta; discal interstriae 1.5–2.0 times wider than striae, shining, minutely rugose, each with a median row of erect, flattened scales 6.0 times longer than wide with truncate tips. Declivity convex, as on disc except ground vestiture abundant, consisting of moderately long setae scattered over surface.

**Male.** Unknown.

**Distribution.** This species is known from Saint Thomas and Saint John in the U. S. Virgin Islands.

**Etymology.** From *crinitus*, Latin for hairy or with long hair, referring to the long setae on declivital surface.

**Comments.** Females may be distinguished by their small size (about 1.1–1.2 mm in length), by the presence of hairlike setae on the posterior portion of the pronotum, by the presence of four distinct, erect serrations on the anterior margin of the pronotum and by the abundant setae on the declivital area. The median pair of serrations on the pronotal anterior margin are basally contiguous and the lateral pair are slightly separated from the median pair.

***Hypothenemus crudiae* (Panzer)**

Figure 89.

*Bostrichus crudiae* Panzer 1791: 35.

*Hypothenemus crudiae*: Wood and Bright 1992: 914; Bright and Skidmore 1997: 191; Bright and Skidmore 2002: 141; Bright and Torres 2006: 406; Wood 2007: 512.

*Stephanoderes trinitatis* Hopkins 1915a: 28 (Montserrat, Trinidad); Bright and Torres 2006: 406.

**Description (Female).** Length 1.4–1.6 mm, 2.3–2.4 times longer than wide; brown to black. Frons moderately, transversely impressed above epistoma, a faint median elevation or smooth space frequently extends from epistomal margin to near upper level of eyes, upper margin of impression bearing a weakly to distinctly elevated, median tubercle or an obscure puncture; surface coarsely reticulate, punctures obscure or very faint. Pronotum 1.1–1.2 times wider than long; sides arcuate on basal half; anterior margin broadly rounded, bearing four to eight (usually six) erect, equal-sized serrations, median pair slightly larger and basally contiguous, each serration separated from adjacent ones by a distance equal to the basal width; anterior slope bearing numerous small asperities; posterior area shining, minutely reticulate, coarsely granulate-punctate; vestiture consisting of erect, scalelike setae intermixed with shorter, hairlike setae. Elytra 1.5 times longer than wide; sides parallel on posterior two-thirds, narrowly rounded behind; discal striae weakly to distinctly impressed, punctures large, distinctly impressed; discal interstriae narrower than or as wide as striae, surface shining, reticulate, punctures obsolete, each with a row of erect, interstitial scales, these 2.0–3.0 times longer than wide. Declivity convex, not especially modified.

**Male.** Similar to female except smaller, 1.0–1.1 mm long; eye reduced in size to half as long as in female; antennal funicle often 1-segmented (pedicel excluded); pubescence longer and more slender.

**Distribution.** This species is widespread throughout the tropical, subtropical and temperate regions of the world. It probably occurs throughout the West Indies.

**Specimens examined.** **ANTIGUA:** Christian Valley, various dates and collectors, blacklight trap and FAO Insect Survey (14–CNCI, SBPC); Dickenson Bay, Antigua Village, 7.X.1988, R. M. Baranowski, blacklight trap (1–FSCA). **BARBADOS:** Jack-in-the-Box Gully, forest leaf litter, 1.VI.2006, 230 m., S. and J. Peck (1–SBPC); Turners Hall Woods, 200 m, 24.V-6.VI.2006, forest Malaise, S. and J. Peck (1–SBPC). **BAHAMAS:** **Andros Island,** Behring Pt., Independence Park, 5 June 2004, R. Turnbow (1–RHTC). **CAYMAN ISLANDS:** **Cayman Brac,** The Creek, 4.XI.1995, E. A. Dilbert, blacklight trap (1–FSCA); **Grand Cayman,** East end, 4 June 2008, R. Turnbow (1–RHTC). **CUBA:** Santiago de Cuba, Parque Nacional Gran Piedra, 20.01154–75.67310, 550 m, 23.V.2013, R. Anderson, 2013–031, mixed hardwood litter (1–CMNO). **DOMINICA:** Fond Figes / T. J. Spilman, VII.4.1964 (1–USNM); Roseau, XI-1967, N. L. H. Krauss (2–USNM); Saint John Parish, Cabrits National Park, blacklight trap, 27 June 2004, R. Turnbow (1–RHTC); Springfield Estate, Mt. Joy House, 31.V-16.VI.2004 / wet montane forest flight intercept trap, S. and J. Peck (2–CNCI). **DOMINICAN REPUBLIC:** La Altagracia, Parque del Este, Caseta Guaraguao, 4.4 km SE Bayahibe, 18–19–59N, 68–48–42W, 3 m, 26–27 May 2004 / C. Young, J. Rawlins, J. Fetzner, C. Nunez, semiarid forest near sea, limestone, yellow pan trap, sample 51164 (1–CMNH); San Cristobal Province, Borbon Cuevas Pomier, tropical deciduous forest flight intercept trap, 13–28.VII.1995, S. and J. Peck, 200 m (2–SBPC); Pedernales, 26 km N Cabo Rojo, 565 m, evergreen dry forest, 29.XI-3.XII.91, intercept, Masner and Peck (1–CMNO); Pedernales, 4 km W Oviedo, 10 m, arid thorn forest, 28.XI-4.XII.91, intercept, Masner and Peck (15–CMNO); Barahona, 7 km NW Paraiso, 200 m, rainforest remnant, 27.XI.91, sweeping, Masner and Peck (1–CMNO). **GUADELOUPE:** Basse-Terre, Gourbeyre, FEB 2003, J. Touroult (1–WIBF). **HAITI:** Port-au-Prince, 25–26.V.1984, M. C. Thomas (2–RHTC). **MONTSERRAT:** Cassava Ghaut, Beattie House, 632 ft., 16°45.908'N, 62°18.953'W, 01–29 June 2003, K. A. Marske, Malaise trap (2–WIBF); Waterworks Ruins, 885 ft., 16°44.306'N, 62°12.953'W, 02 Aug 2005, I. A. Foley (2–WIBF). **NAVASSA ISLAND:** bluff of southwest rim, 65 m, 25–30 July 1998, W. E. Steiner, J. M. Swearington et al. / flight-intercept/yellow pans in mixed forest (*Metopium*, *Coccoloba*, *Ficus*) at rim of upper terrace; limestone and red colitic soil (1–USNM); central forest area, 70 m, 26 July-4 August 1998, W. E. Steiner, J. M. Swearington et al. / flight-intercept/yellow pans in Malaise trap in gap of mixed forest (*Ficus*, *Metopium*, *Coccolobus*, *Sideroxylon*, *Thrinax*) on limestone (2–USNM); forest west of lighthouse, 75 m, 30 July-4 August 1998, W. E. Steiner, J. M. Swearington et al. / flight-intercept/yellow pans in Malaise trap, open mixed forest (*Metopium*, *Coccolobus*, *Ficus*) at rim of upper terrace; limestone and red colitic soil (1–USNM); near lighthouse, 74 m, 24 July-4 August 1998, W. E. Steiner, J. M. Swearington et al. / taken in flight or in tent, open weedy scrub near mixed forest (*Ficus*, *Metopium*, *Thrinax*) on limestone and red colitic soil (1–USNM). **NETHERLANDS ANTILLES:** **Saba,** Ecolodge on Crispeen Track, 1500', 25.IV.2013 / ex: small limb, D. E. Bright and B. A. Barr (2–CNCI). **PUERTO RICO:** Bayamón, II.9.1995, in *Ricinus communis* dry fruits (1–CNCI); Carite State Forest, VII.28.1999, C. W. O'Brien and P. Kovarik (1–CNCI); Fajardo, XII.23.1960, in seedpods of *Delonix regia* (13–CNCI); Guaynabo, various dates from 1991 to 2000, J. Torres, ex: *Almendrus* branches (6–CNCI), same locality, ex. *Melicoccus bijugatus* seeds (4–CNCI), same locality, ex. dry flowers *Musa sepientum* (23–CNCI), same locality, in *Terminalia catappa* seeds (5–

CNCI, THAC); Guaynabo, 21.V.1991, B. Sonadora / ex: semillas almendras (1-CNCI); Isabela, 14 julio 2011, J. Rodríguez, ex. "Flamboyán" (4-UPRC); Mayagüez, V.2.1912 / C. W. Hooker (1-AMNH); Mona Island, near Playa Carabino, 5 m, N. Franz, V.20.2008 (2-UPRC); Patillas, Leeward Antilles, April 3, 21 (1-AMNH); Pueblo Viejo, A. S. Mills, VIII.14.1930 (2-CNCI). **SAINT KITTS-NEVIS: Nevis**, Cotton Ground Village, 24.III-2.IV.1993, B. Brandy, blacklight trap (1-FSCA). **SAINT LUCIA:** Bouton, 10.VII.2009, ex: small dead stem, D. E. Bright (1-CNCI); Mon Repos, Fox Grove Inn, 60 m, 20-28.VII.2007 / uv light, S. and J. Peck (2-SBPC). **SAINT VINCENT AND THE GRENADINES: Saint Vincent**, 9-15 Aug 1981, R. S. Miller (1-WIBF); Charlotte P, Biabou, coastal cliff, 8.28.1981, C. W. and L. B. O'Brien (1-CNCI). **VIRGIN ISLANDS (BRITISH): Guana Island**, North Beach, at night, 10 July 1994, M. A. Ivie, on beach (1-WIBF). **VIRGIN ISLANDS (U. S.): Saint Croix**, Sprat Hall, 01-15 OCT 1982, J. A. Yntema, vane trap w/ETOH (3-WIBF); Est. Fountain, 350 ft., 20 Apr-19 May 1998, J. Keularts, flight intercept trap (1-WIBF); Est. Stony Ground, Sandy Pt., 06 JAN 1993, R. S. Miller and D. Sikes (1-WIBF). **Saint John**, Est. Lameshur Bay, Lt. Europa to Europa Bay, 20 July 1994, M. S. Becker, beating (1-WIBF); Hawknest Trail, 28 FEB 1984, W. R. Muchmore, grass and shrubs (1-WIBF).

**Comments.** Females of this species may be distinguished from other species by the weakly, transversely impressed frons with a small, rounded elevation on the upper margin of the impression and by the short, interstitial scales.

Under the synonymous name, *Stephanoderes brasiliensis* Hopkins, Wolcott (1948) records this species from stems of *Derris elliptica* at Río Piedras, Puerto Rico and from dead branches of *Delonix regia* in the patio of the School of Tropical Medicine and from numerous hosts intercepted at several ports. Wood and Bright (1992) list a large number of hosts of this species. The biology is briefly noted in Wood (1982, 2007).

Adults of this species can breed in twigs and small branches of trees, shrubs, vines, weeds and in seeds, pods and other fruiting bodies of a wide variety of plant species.

It is interesting to note that Wood (2007) stated that this species was the first endemic, scolytid species named from the Western Hemisphere ("India occidentalis"), probably the Antilles Islands.

***Hypothenemus discordis* Bright, sp. nov.**

Figure 90.

**Type Material. HOLOTYPE** (female) labeled: "DOM. REP.: Province Pedernales, 20 km N. Cabo Rojo, 365 m, Las Mercedes turn-off, 21 Aug 1988, beating second Cassia and Acacia" / "M. A. Ivie, T. K. Philips and K. A. Johnson, colrs." / "HOLOTYPE *Hypothenemus discordis* D. E. Bright 2016" (WIBF [CNCI]). **PARATYPE** (1) labeled: "VIRGIN IS.: Saint Croix, Estate Fountain, 340 ft., 18 June-19 July 1993, J. Keularts, flight intercept trap #15" (CNCI).

**Description (Female).** Length 0.9 mm, 2.5 times longer than wide. Frons weakly convex above a very slightly flattened area above epistoma; surface shining, very finely, minutely reticulate and weakly punctured. Pronotum as long as wide, widest at base; sides broadly rounded; anterior margin narrowly rounded, bearing two basally contiguous serrations; summit distinctly elevated; anterior slope with a few, small, scattered asperities; posterior half moderately shining, with scattered, very small, obscure granules and inconspicuous vestiture. Elytra 1.5 times longer than wide; sides parallel on basal half, converging to broadly rounded apex; striae not impressed, punctured in regular rows, punctures large, deeply impressed, separated by a distance equal to diameter of puncture, each with a minute seta; interstriae narrower than striae, each with a median row of erect, narrowly spatulate scales, each scale 1.5-2.0 times longer than wide, as long or shorter than interstitial width, apex rounded. Declivity evenly convex; striae and interstriae as on disc except each interstriae bears a row of minute granules at base of each scale.

**Male.** Unknown.

**Distribution.** This species is known from the Dominican Republic and from Saint Croix in the U. S. Virgin Islands.

**Etymology.** From *discordia*, Latin for disagreement or different.

**Comments.** Females of this species may be recognized by their very small size and by the presence of two basally contiguous serrations on the anterior margin of the pronotum.

***Hypothenemus dubitalis* Bright, sp. nov.**

Figure 91.

**Type Material.** HOLOTYPE (female) labeled: "GUADELOUPE, 25.VII.1999, Sainte Anne, Plage de Bois Jolan, Leg. Rouget, D." / "HOLOTYPE *Hypothenemus dubitalis* D. E. Bright 2016" (CNCI).

**Description (Female).** Length 1.7 mm, 2.7 times longer than wide; black except dark reddish on anterior portion of pronotum. Frons moderately concave in center, with a narrow, shining, longitudinal glabrous area extending to epistomal margin; surface glabrous, area between median concavity and eye and along epistomal margin moderately densely pubescent, setae short, hairlike. Pronotum 1.2 times wider than long, widest just before base; sides broadly arcuate, anterior margin broadly rounded, bearing six serrations, median pair minute; anterior slope with 15 large, widely separated asperities; summit weakly elevated, with numerous, small, basally contiguous asperities; posterior portion shining, with minute granules and punctures; vestiture consisting of long, narrowly flattened scales, these as long or longer than asperities on anterior slope. Elytra 1.5 times longer than wide; sides parallel on anterior three-fourths, apex broadly rounded; discal striae obscure, not impressed, punctures weakly impressed; discal interstriae weakly shining, obscurely punctured; vestiture consisting of moderately long, apically broadened, erect interstitial scales and distinct strial setae, these one-half as long as interstitial scales. Declivity convex; vestiture as on disc except slightly longer.

Male. Unknown.

**Distribution.** This species is known from the unique female from Guadeloupe.

**Etymology.** From *dubito*, Latin for uncertain or doubt, referring to uncertainty of the generic placement of this species.

**Comments.** This species is described with some hesitation. The female, at 1.7 mm, is larger than those of any other species I have seen from the West Indies. In addition, the female may be recognized by the moderately concave frons with a narrow, shining smooth space extending to the epistomal area, by the presence of six serrations on the anterior margin of the pronotum with the median pair minute, by the 5-segmented funicle (pedicel excluded) and by the interstitial rows of erect, spatulate scales on the elytral disc. These features are unique among all other West Indian species.

With one specimen, it is difficult to place this species in any, currently recognized genus. It is here tentatively placed in *Hypothenemus* despite the 5-segmented funicle (pedicel excluded). Two to four funicle segments minus the pedicel is typical of *Hypothenemus*.

***Hypothenemus erectus* LeConte**

Figure 92.

*Hypothenemus erectus* LeConte 1876: 356; Wood and Bright 1992: 918; Bright and Skidmore 1997: 192; Bright and Skidmore 2002: 142; Wood 2007: 507.

*Stephanoderes cubensis* Hopkins 1915a: 32 (Cuba).

*Stephanoderes discedens* Schedl 1950b: 23 (Saint Thomas).

**Description (Female).** Length 1.5–2.2 mm, 2.3–2.4 times longer than wide; reddish-brown to black. Frons convex, weakly flattened above epistoma; surface minutely reticulate, punctures on lower half moderate in size, shallow and inconspicuous; vestiture consisting of sparse, fine, moderately long, hairlike setae, longer and more conspicuous along epistomal margin. Pronotum 1.2 times wider than long; sides strongly arcuate; anterior margin broadly rounded, usually bearing four erect, contiguous asperities, median pair of these large, lateral pair much smaller, sometimes inconspicuous or missing; anterior slope bearing 20 erect, distinct asperities; posterior area minutely reticulate, very faintly punctured;

vestiture consisting of moderately long, sparse, hairlike setae intermixed with shorter (usually), scale-like setae. Elytra 1.5 times longer than wide; sides parallel on posterior three-fourths, broadly rounded behind; discal striae weakly impressed, punctures small; discal interstriae at least 2.0 times wider than striae, surface reticulate, somewhat dull. Declivity convex; occasionally interstriae bear a median row of small granules, otherwise not especially modified; vestiture consisting of erect, broad, truncate, interstitial scales, these 2.0–3.0 times longer than wide and numerous, short, interstitial setae abundant on declivity.

**Male.** Similar to female except smaller, 1.3–1.5 mm long; eye reduced; pronotal asperities sometimes reduced and vestiture longer.

**Distribution.** This species is known from southern Texas to Venezuela and probably occurs throughout the West Indies.

**Specimens examined.** **BAHAMAS: Andros Island,** Behring Point, 8 June 2001, R. Turnbow (1–RHTC); Forfar Field Station nr Stafford Creek, 22–28.VII.2006, M. C. Thomas, T. R. Smith, uv trap in coastal coppice (1–FSCA); Morgan’s Bluff, 25.VII.2006, M. C. Thomas, hand collected (1–FSCA); Stafford Creek, 4 June 2001, R. Turnbow (1–RHTC). **Great Inagua,** entrance Union Creek Reserve, 13.VII.2007, M. C. Thomas (1–FSCA); South Bay road, 10.VII.2007, M. C. Thomas (1–FSCA). **New Providence,** 1 km S. Love Beach near Old Fort Bay, 25°03’N, 77°31’W, 12 February 2005 / under bark of old rotting log of *Bursera simaruba*, W. E. Steiner and J. M. Swearingen (1–USNM). **BARBADOS:** Islands record only (9–CNCI); Bellaire Research Station, Holetown, 28.V.2006, uv light, S. and J. Peck (1–SBPC); Turner’s Hall Woods, 200 m, 5–23.VI.2007, forest flight intercept trap, S. and J. Peck (2–SBPC). **CAYMAN ISLANDS: Cayman Brac,** The Creek, uv trap, 26.XI.1995 and 4.1.1996, C. R. Dilbert (16–CNCI); Brac Parrot Reserve, May 2009, R. Turnbow (2–RHTC); Stake Bay, 3 July 2013, R. Turnbow / from seedpod of *Tamarindus indica* L (1–RHTC). **Grand Cayman,** 9.VII.1987 (2) and 26.VII.1992 (2): Fitzgerald, blacklight trap (4–FSCA); Georgetown, at light, 3 June 2008, R. Turnbow (2–RHTC); Rum Point, 3 June 2008, R. Turnbow (2–RHTC). **CUBA:** Asperio-Rangel, Pinar del Rio Province, June 16, 1959, M. W. Sanderson (1–INHS); Cayamas (1–USNM); Holguin Playa, Corinthia just E. Bahia Levisa, 07 Jul 90, M. A. Ivie, beating mangroves (1–WIBF). **DOMINICA:** Roseau, XI.1967, N. L. H. Krauss (1–USNM); Saint John Parish, Cabrits National Park, 28 June 2004, R. Turnbow (1–RHTC). **DOMINICAN REPUBLIC:** Monte Cristi, 8.6 km N Villa Elias, 26 May 1992, R. Turnbow (1–RHTC); Province Pedernales, 25.5 km N of Cabo Rojo, 25.VI.1992: Skelley, beating misc. brush (1–RHTC); Santo Domingo, 29–30 Mar 1991, M. A. Ivie (1–WIBF). **GRENADA:** Par. Saint George, Saint Georges’s, 8.VI.1990, M. C. Thomas / beating in thorn shrub on golf course (1–FSCA); Saint George’s Par., Grand Anse, 21–25.V.1992, H. V. and R. M. Baranowski, blacklight trap (2–FSCA); Saint Georges, Min. Agricultural Botanic Gardens, 6.II.1990, A. Thomas, light trap (2–CNCI); Saint James Parish, Black Bay, 26.II.1990, R. E. Woodruff, light trap (1–SBPC); Saint Patrick’s Plains, 10.VI.1990, F. Noel, light trap (1–CNCI). **GUADELOUPE:** Basse-Terre: Rivière Sens, Sentier Houëlemont, N15°58.93, W6°42.62 / humid forest flight intercept trap, 19–31.V.2012, S. Peck (1–SBPC); Basse-Terre: Monty, ravine Renoir, 1 m / xeric mangrove transition forest uv trap, 19.V.2012, S. Peck (1–SBPC); Basse-Terre: Mahout Rivière Colas, 80 m / xeric forest, streamside uv trap, 15.V.2012, S. Peck (1–SBPC); Basse-Terre: Gourbeyre, Palmiste, 05–20 Jan 2003, J. Touroult (WIBF). **JAMAICA:** Saint Andrew Parish, Jack’s Hill, Maya Campground, 22–31.VII.1985, C. B. and H. V. Weeks Jr., G. B. Edwards, uv light (3–FSCA); Hanover Par., Lucia, Samarian Lodge, 20.VI.1970, G. Farnsworth, blacklight trap (1–FSCA); Kingston, 28 February 1995, W. Lu (1–WIBF); Round Hill, XI.21.1959 / collector A. M. Nadler (1–AMNH); Saint Andrew Parish, Irish Town, 27 August 1966, Howden and Becker (2–CNCI); Saint Catherine Parish, Port Henderson, 25 June 1958, M. W. Sanderson (1–INHS); Trelawny Parish, Duncans, 13 August 1966, Howden and Becker (2–CNCI). **MARTINIQUE:** 1 km E Diamant, N14°28.7’, W81°0.6’, 7–23.VII.2010 / 10 m, thorn shrub flight intercept trap, S. and J. Peck (6–SBPC); 5 km SE Le Marin, Forest Creve, Coeur, N14°27.05’, W6°50.91’, 35 m, / dry forest uv trap, 10–28.VII.2012, S. Peck (1–SBPC). **MONTSERRAT:** Cassava Ghaut, Beattie House, 16°45.91’N, 62°12.95’W, 23 Mar–03 Apr 2002, 632 ft., A. Krakower, uv light (15–WIBF); Woodlands Riverside House, 33 m, 16°45.99’N, 62°13.34’W, various dates JAN 2002, M. A. Ivie (3–WIBF). **PUERTO RICO:** Arecibo, Arecibo, Site 12, EDRR, 18.45271, -66.59809, 20.VI–3.VIII.2013, C. Torres and H. Rivera (1–MSUC); 8 km SE of Arecibo, II.8.1969, C. W. and L. B. O’Brien (1–CNCI); Guánica State Forest, Forte-Granados Trail, VIII.9.1999, C. W. O’Brien and P. Kovarik (2–CNCI); Guaynabo, various dates 1995 to 1998, J. Torres, ex: light trap (14–CNCI), same data except ex: *Terminalia catappa* log (1–CNCI); Isabela, 15 enter 2011, E. Abreu, trampa alcohol en caoba (2–UPRC). **SAINT LUCIA:** Bouton, 10.VII.2009, ex. small dead stem, D. E. Bright (2–CNCI); Castries, Union Agr. Sta., 24–25.V.1987, blacklight trap, R. E. Woodruff (5–REWC); Edmunds Forest Reserve, 521 m, 13.84007°N, 60.99821°W, 6 May 2009, berlese litter, I. A. Foley (1–WIBF); Grande Anse trap site, 38 m, 14.0052°N, 60.8973°W, flight intercept trap, various dates in 2009, R. C. Winton and C. A. Maier (1–WIBF); Marigot Bay, 22.VIII.1989, M. Paul, blacklight trap (2–FSCA); Micoud Dist., Escap Community, 46 m, 13.83432°N, 60.89864°, various dates in 2009, C. A. Maier (4–WIBF), same locality, 6.VII.2009 / in *Cecropia* sp leaf petioles, D. E. Bright (2–CNCI); Savannes Bay Mangrove Reserve, 2 m, 09 July 2009, ex. mangroves rhizophora, C. A. Maier and M. L. Gimmel (1–WIBF), same locality, 9.VII.2009 / in small dead branch, D. E. Bright (1–CNCI); Mon

Repos, Fox Grove Inn, 90 m, various dates in 2007, uv light, S. and J. Peck (5–SBPC); Union Agricultural Station, 11.IX.1986, Crop Protection Unit (4–FSCA). **SAINT VINCENT AND THE GRENADINES: Mayreau Island**, Saltwhistle Bay, 12–27.VIII.2009 / thorn shrub at pond flight intercept trap, S. Peck (2–SBPC); **Saint Vincent**, Emerald Valley Hotel, Buccament, 10–20.VI.2007, S. and J. Peck (1–SBPC). **VIRGIN ISLANDS (U. S.): Saint Thomas**, Island record only (1–NHMW).

**Comments.** Females of this species may be most easily recognized by their larger size, by the presence of 15–20 coarse asperities on the anterior slope of the pronotum, by the presence of four erect serrations on the anterior pronotal margin and by the very weakly impressed elytral striae.

Wood (1957) stated that the species he described as *Stephanoderes castaneus* from Florida in 1954 was a synonym of *Triarmocerus birmanus* Eichhoff, now in *Hypothenemus*. On the basis of that observation, Wood (1982) recorded *H. birmanus* (Eichhoff) from a number of North American localities (Florida, Colima in Mexico, Jamaica, Costa Rica and Panama) plus other records from the Old World tropics. My examination of the type material of *S. castaneus* Wood and other New World specimens of *H. birmanus* showed that all New World identifications of *H. birmanus* are, in fact, misidentifications of *H. erectus* LeConte and that *H. birmanus* is an Old World tropical species.

The characters noted by Wood (1982, 2007) that distinguish adults of *H. birmanus* from *H. erectus* are all extremely variable and cannot be used to distinguish species. Further research may show the two names are synonymous and LeConte's name may eventually have to be placed in synonymy. Until confirmation of the names is available, I am using LeConte's name for the West Indies specimens.

Vázquez et al. (2003) list *Litchi* and *Pinus* as host plants in Cuba (as *H. birmanus*) and *Eucalyptus* and *Pinus* as hosts (as *H. erectus*).

### ***Hypothenemus eruditus* Westwood**

Figure 93.

*Hypothenemus eruditus* Westwood 1834: 34; Wood and Bright 1992: 919; Bright and Skidmore 1997: 192; Bright and Skidmore 2002: 142; Bright and Torres 2006: 407; Wood 2007: 518.

*Bostrichus plumeriae* Nördlinger 1856: 74. (Venezuela). **New Synonymy.**

*Hypothenemus plumeriae*: Wood and Bright 1992: 938; Bright and Skidmore 1997: 195; Bright and Skidmore 2002: 145; Wood 2007: 521.

*Stephanoderes transatlanticus* Eggers 1941: 99 (Guadeloupe).

*Hypothenemus guadeloupensis* Schedl 1951: 98 (Guadeloupe).

*Cryphalus obscurus* Ferrari 1867: 17 (Cuba).

*Hypothenemus lineatifrons* Hopkins 1915a: 17 (Cuba).

*Hypothenemus parvus* Hopkins 1915a: 17 (Cuba).

*Hypothenemus sacchari* Hopkins 1915a: 17 (Nevis).

*Hypothenemus flavipes* Hopkins 1915a: 18 (Cuba).

*Stephanoderes flavicollis* Hopkins 1915a: 24 (Cuba).

*Stephanoderes elongatus* Hopkins 1915a: 25 (Cuba).

*Stephanoderes subconcentralis* Hopkins 1915a: 25 (Cuba).

*Stephanoderes unicolor* Hopkins 1915a: 25 (Cuba).

*Stephanoderes gracilis* Eggers 1929: 51 (Cuba).

**Description (Female).** Length 1.0–1.4 mm, 2.3–2.6 times longer than wide; brown to almost black, or with reddish pronotum, head and legs. Frons evenly convex, often very faintly impressed above epistoma, usually a faint median groove extends from epistomal margin to near upper level of eyes or sometimes with a faint, median swelling; surface coarsely reticulate, punctures obscure or very faint; vestiture consisting of sparse, fine, hairlike setae, conspicuous along epistomal margin. Pronotum 1.1 times wider than long; sides parallel to weakly arcuate on basal half; anterior margin broadly rounded, bearing four to eight (usually six) erect, serrations, each serration separated from adjacent ones by a distance less than the basal width, median pair often basally contiguous; anterior slope bearing numerous small asperities; posterior area shining, minutely rugose-reticulate, punctures shallowly impressed; vestiture consisting of erect, scalelike setae intermixed with shorter, hairlike setae. Elytra 1.5–1.6 times longer

than wide; sides parallel on posterior two-thirds, narrowly rounded behind; discal striae weakly to not impressed, punctures small and shallow; discal interstriae as wide as striae, surface shining, reticulate, punctures obsolete, each with a median row of erect scales, these as long as distance between rows and 3.0–5.0 times longer than wide. Declivity convex, not especially modified except hairlike pubescence more abundant especially on postero-lateral areas.

**Male.** Similar to female except smaller, 0.7–0.8 mm long; antennal funicle often 1-segmented (pedicel excluded); pubescence longer and more slender.

**Distribution.** This species is widespread throughout the tropical, subtropical and temperate regions of the world. It almost certainly occurs on every island in the West Indies.

**Specimens examined.** **ANTIGUA:** Christian Valley Agricultural Station, 24–25.VII.1991, blacklight trap, R. E. Woodruff (2–FSCA); same locality, various dates, FAO Insect Survey (7–FSCA, SBPC). **BAHAMAS:** **Andros Island,** San Andros Club colony (1–WIBF); Uncle Charlie's Blue Hole, 7 June 2001, R. Turnbow (2–RHTC). **Great Abaco,** Marsh Harbour, Pinewoods Nursery, 22.XII.1990, R. Keys, blacklight (2–FSCA). **Great Inagua,** Matthew Town, 9.VII.2007, M. C. Thomas, in pith of pods of *Moltinga oleifera* (17–FSCA). **BARBADOS:** Gregg Farm Gully, 240 m, 29.V.06, forest uv light, S. and J. Peck (1–SBPC); gully forest, 2 km NE Hometown, N13°11.9', W59°36.8', 150 m, 6.VI.06, forest uv lights, S. and J. Peck (1–SBPC); Jack-in-the-Box Gully, N13°11', W59°34.3', 1.VI.06, leaf litter, 230 m, S. and J. Peck (8–SBPC); Welchmann Hall Gully, N13°11.74', W59°34.60', 30.V.06, uv light trap, 280 m, S. and J. Peck (3–SBPC). **CAYMAN ISLANDS:** **Grand Cayman,** 12.VII.1990: Fitzgerald, blacklight trap (1–FSCA); Mastic Trails, flight intercept trap, 20–29 May 2009, R. Turnbow (1–RHTC). **CUBA:** Island record only (5–CNCI); Cayamas, E. A. Schwarz (1–USNM); Cienfuegos, Rio Cabagan, 21.93123–80.08461, 651 m, 20.V.2013, R. Anderson, 2013–026, gallery forest litter (1–CMNO); Santiago Province, 6 km NE Siboney, Rio Juragua, 150 m, 7.XII.95, tree base litter, S. Peck (2–SBPC); Santiago Province, Gran Piedra, Segundo Chorrito, 7.XII.95, 600 m, km. 8, tree base litter, S. Peck (1–SBPC); Soledad nr. Cienfuegos (WIBF); Matanzas Province, Cienaga Zapata at Playa Larga, 11–12 Feb. 1981: Spangler and A. Vega (1–USNM); Santiago de Cuba, Parque Nacional Gran Piedra, km 7 on road, 550 m, 20.011–75.673, 1.X.2014, R. Anderson, F. Cala-Riquelme, A. Deler Hernandez, 2014–025, mixed hardwood litter (1–CMNO); Santiago de Cuba, 2 km W. Chivirico, 88 m, 19.96324–76.44084, 2.X. 2014, R. Anderson, F. Cala-Riquelme, A. Deler Hernandez, 2014–026, coastal shrub litter, arroyo (1–CMNO). **DOMINICA:** Fond Figues / T. J. Spilman leg, 4.VII.1964 / Breedin-Archbold Smithsonian Survey (4–USNM); 1.7 mi. E Pont Casse, 4–11.III.1964, O. S. Flint Jr. (1–USNM); Grand Savane, Sept. 8, 1965, D. L. Jackson (1–USNM); La Plaine, 24.IX.1964, T. J. Spilman / Breedin-Archbold Smithsonian Survey (1–USNM); Springfield Estate, 330–360 m, 30.V.16.VI.2004, S. and J. Peck, N15°20.796, W61°22.142, mature second forest flight intercept trap (2–SBPC). **DOMINICAN REPUBLIC:** Barahona, 7 mi. NW Paraiso, 200 m, rainforest remnant, 27.XI.91, sweeping, Masner and Peck (3–CNCI); Hato Mayor Province, W of Sabana de la Mar, Par. Nac. Los Haitises, bosque humido, 01 Apr 92, litter in buttresses, M. A. Ivie (4–WIBF); Independencia, ESE Jumani, La Florida, S of Lago Limon, 14 Apr-03 July 1992, deep litter, M. A. Ivie (1–WIBF); Perereales Province, ca. 35 km N Cabo Rojo, 1250 m, Las Abejas, 26 Aug-09 Sept 1988, flight intercept trap, M. Ivie, Philips and Johnson (1–WIBF); San Cristobal Province, Borbon Cuevas Pomier, tropical deciduous forest flight intercept trap, 13–28.VII.1993, S. and J. Peck (2–SBPC); La Vega Province, PN. A. Bermudez, Cienaga, 19.VII-2.VIII.1995, 1010 m, tropical evergreen forest flight intercept trap, S. and J. Peck (1–SBPC); La Vega Province, 10 km NE Jarabacoa, Hotel Montana, forest, 18.VII-4.VIII.1995, 550 m, flight intercept trap, S. and J. Peck (1–SBPC). **GRENADA:** Grand Etang Forest Res., N12°04.62', W61°42.16', 10–28.VIII.2010, 400 m, rainforest flight intercept trap, S. Peck (2–SBPC); Saint Andrew, Mirabeau Agricultural Laboratory, various dates 1980–1990 (100–CNCI, SBPC). **GUADELOUPE:** Basse-Terre: Rivière Sens, Sentier Houëlemont, N15°58.93, W61°42.62 / humid forest flight intercept trap, 19–31.V.2012, S. Peck (3–SBPC); Basse-Terre: Petit Binro, 02 JAN 2003, J. Touroult (1–WIBF); Basse-Terre, Gourbeyre, FEB 2003, J. Touroult (1–WIBF); Basse-Terre: Matoumba Trace, Victor Hugues, 16.05772–61.67113 / wet cloud forest litter, 1189 m, 28.V.2012, R. Anderson (1–CMNO); Basse-Terre: Sentier Houëlemont, 15.98135–61.70947 / lowland deciduous forest litter, 105 m, 18.V.2012, R. Anderson (1–CMNO). **JAMAICA:** Hardwar Gap, 4000', VII.25.1966, Howden and Becker (1–CNCI); Kingston Parish, Kingston, 12 February 1937, Chapin and Blackwelder (1–USNM); Kingston, May 1958, ex pigeon peas, J. A. McFarlane (4–NHML); Saint Andrew Parish, Hardwar Gap, 25 July 1966, Howden and Becker (1–CNCI); Saint Catherine Parish, Bog Walk, 2 February 1937, Chapin and Blackwelder (1–USNM); Caymanas Estate, 1962, ex birds nest, A. Ventura (7–NHML); Llundas Vale, 14 May 1950 (2–INHS); Saint Elizabeth Parish, Maggoty Falls, 15 May 1950 (3–INHS); Saint Thomas Parish, Trinity Vale, 28 February 1937, Chapin and Blackwelder (3–USNM); Trelawny Parish, Barbecue Bottom, 10 August 1966, H. F. Howden (2–CNCI); Westmoreland Parish, Cornwall Mountain, 18 August 1966, ex *Terminalia latifolia*, H. F. Howden (3–CNCI). **MARTINIQUE:** 2 km NW Diamant, N14°29.4', W61°02.5', 8–23.VII.2010 / thorn forest flight intercept trap, 80 m, S. and J. Peck (1–SBPC); 4 km SW Le Marin, Morne Aca, 260 m, / humid forest hilltop clearing flight intercept trap, 13–28.VI.2012, S. Peck (3–SBPC). **MONTserrat:** Big River, 1230 ft., 16°45.719'N, 62°11.34'W, 07 Aug. 2005, uv light, WIBF group collrs. (1–WIBF); Centre Hills, NE of

Fleming Spring Ghaut, 750', 23 June 2000, K. A. Guerrero, leaf litter (1-WIBF). **NAVASSA ISLAND:** bluff of southwest rim, 18°23.75'N, 75°00.94'W, 65 m, 25–30 July 1998, W. E. Steiner, J. M. Swearingen et al. / flight intercept/yellow pans in Malaise trap, open forest (*Metopium*, *Coccoloba*, *Ficus*) at rim of upper terrace; limestone and red oolitic soil (1-USNM). **NETHERLANDS ANTILLES:** **Saba**, Bud's Mountain Trail, North Coast Trail Trailhead; Spring Bay Trail; Mt. Scenery Trail; Upper Hells Gate; D. Sikes, M. Ivie, various dates 2008 (9-WIBF); **Saba**, Bud's Mountain Trail, 1514', 29.IV.2013 / Ex. *Cecropia* petioles, D. E. Bright and B. A. Barr (2-CNCD); Crispeen Track, 1514', 28.IV.2013 / ex. *Cecropia* petioles, D. E. Bright and B. A. Barr (1-CNCD) Spring Bay Trail, el. 343m, broadleaf forest leaf litter Berlese, 15 Mar. 2008 (1-WIBF). **PUERTO RICO:** Aguas Buenas, 7–17.V.1973, S. Peck, Berlese 265 (1-CNCD); Bayamón, 9.II.1995, in dry fruits of *Ricinus communis* (1-CNCD); Carite State Forest, VII.26.1999, C. W. O'Brien and P. Kovarik (1-CNCD); Cayey, 13.VIII.2000, J. Torres, collr., in dry flowers of *Musa paradisiaca* (2-CNCD); El Yunque National Forest, near Palo Colorado picnic area, III.21.2011, S. J. Seybold / in peduncles (leaf stalks) *Cecropia schreberibane* (5-CNCD); Guánica, 15.IV.96, ex: light trap, M. Canals (2-CNCD); Guaynabo, various dates in 1994 to 1997, J. Torres, ex: light trap (40-CNCD), ex: *Melicoccus bijugatus* seeds (2-CNCD), in dry flowers of *Musa sapientum* (11-CNCD), in *Psidium guajava* seeds (1-CNCD), in *Terminalia catappa* seeds (1-CNCD); Isabela, 14 julio 2011, J. Rodríguez, ex. "Flamboyán" (1-UPRC); Luquilla, 5.I.1990, J. Torres (1-CNCD); Pico El Yunque, Caribbean National Forest, 23.IX.1987, M. A. Ivie, dwarf forest litter (1-WIBF); Rio Grande, 20.VIII.1990, in *Artocarpus altilis* log (1-CNCD); San Lorenzo, 7.VIII.2000, J. Torres, in dry fruit of *Lagenaria siceraria* (5-CNCD); numerous additional specimens from Adjuntas, Ciales and Yauco, various dates in 2015 (DBPR, CNCD). **SAINT LUCIA:** Barre de L'Isle, 13.0247°E, 60.9589°W, 289 m, 18 May 2009, R. C. Winton and A. R. Cline (3-WIBF); Bordelais trap site, 13.9689°E, 60.8859°W, 185 m, 19–25 June 2009, uv light, C. A. Maier and E. A. Ivie (1-WIBF); Chassin trap site, 13.9965°N, 60.9195°W, 94 m, 26–31 May 2009, flight intercept trap, R. C. Winton and C. A. Maier (2-WIBF); Grande Anse trap site, 14.0052°N, 60.8973°W, 38 m, flight intercept trap, various dates in 2009, R. C. Winton and C. A. Maier (9-WIBF); Louvet trap site, 13.8859°N, 60.8859°W, 30 June–05 July 2009, flight intercept trap, C. A. Maier, K. J. Hopp and M. L. Gimmel (1-WIBF); Mont LaCombe, 13.9209°N, 60.9209°W, 271 m, various dates in 2009, M. L. Gimmel and C. A. Maier (3-WIBF); Piton Tromasse trap site, 13.8515°N, 61.0098°W, 793 m, 22 June 2009, litter berlese, C. A. Maier (1-WIBF); Quilles Forest Reserve, LaPorte cabin, 13.8404°N, 60.97408°W, 272 m, 07 May 2009, L. A. Foley and J. B. Runyon (1-WIBF); Ravine Chabot, 14.0010°N, 60.9734°W, 62 m, 06 July 2009, soil washing, K. J. Hopp and M. L. Gimmel (1-WIBF). **SAINT VINCENT AND THE GRENADINES:** **Saint Vincent**, Emerald Valley Hotel, Buccament, 10–21.VI.2007 / flight intercept trap, 30 m, S. and J. Peck (2-SBPC). **VIRGIN ISLANDS (BRITISH):** **Guana Island**, 25–28.X.00, Lindgren trap, B. and B. Valentine (1-WIBF), same locality, 8.VIII.00, W. P. Liai, Malaise trap (1-WIBF). **VIRGIN ISLANDS (U. S.):** **Buck Island:** Buck Island Reef Nat. Mon., 01–31 March and July, August 1993, flight intercept trap, Z. Hillis (2-WIBF). **Saint Croix**, Estate North Star, 18 Dec–06 Jan 1993, 60 ft., flight intercept trap, J. Keularts (1-WIBF); Rust-up-Twist, North Shore Road (WIBF). **Saint John**, Adrian ruins (WIBF); Concordia (WIBF); Lameshur Bay, Little Lameshur Bay (WIBF); Catherineberg / 14 MAR 1984 / litter under mango tree / W. B. Muchmore (3-USNM). **Records from literature. BAHAMAS: Andros Island:** Pigeon Cay (Turnbow and Thomas 2008). **CUBA:** San Vicente. P de Rio, March 23, 1939 and July 14, 1940, J. C. Bradley (Schedl 1957); El Retiro, Sierra Rangel: de Rio, March 26, 1939, J. C. Bradley (Schedl 1957). **JAMAICA:** Saint Andrew Parish, beside road east of Lindo's Gap, 31 March 1956, ex dead leaves: F. Bellinger; Cane River Falls, Saint Andrew Parish, 500 ft., March 31, 1956, damp leaf litter in shady hollow: F. Bellinger (Schedl 1957); 3 miles north of Negril, Westmoreland Parish, 500 ft., April 10, 1956, leaf litter and red soil: F. Bellinger (Schedl 1957); near Mammee River, below "Maryland", Saint Andrew Parish, 750 ft., May 10, 1956, in damp litter and underlying humus in thicket: F. Bellinger (Schedl 1957); beside road east of Lindo's Gap, Saint Andrew Parish, March 31, 1956, from dead leaves on ground: F. Bellinger (Schedl 1957 [as *Hypothenemus intersetosus* Eggers]). **PUERTO RICO:** Camp Dona Juana, Villalba, in a dead pole of "maricao" (*Byrsonima spicata*) (Wolcott 1948); Ciales, dead twigs of "masa" (*Tetragastris balsamifera*) (Wolcott 1948).

**Comments.** This species occurs at low elevations throughout the tropical regions of the world. All the West Indian localities recorded herein are below 650 meters, except the one record from Hardwar Gap, Jamaica.

Adults of this species are primarily bark-borers but are often twig-borers in diseased or dying trees and occur in a variety of diverse habitats. They are unselective in their host material having been recorded from over 100 species of plants in 46 families throughout the world.

*Hypothenemus eruditus* is a very variable species, with different populations sometimes differing greatly. The most obvious difference noted was the character of the declivital pubescence of the adults. In specimens from the United States, the short, hairlike strial and interstrial setae are generally in distinct rows at the elytral apex. In specimens originating from Central America, West Indies and Brazil, these

setae are longer and often much more abundant on the interstriae of the declivity. A complete range of the amount and placement of these setae can be seen in almost any population examined.

Adults of this species may be recognized by their very small size, by the six (usually) serrations on the anterior margin of the pronotum, by the scattered, hairlike setae on the postero-lateral portions of the declivity and by the narrow elytral scales.

*Hypothenemus plumeriae* (Nördlinger) was maintained, with reservations, as a distinct species by Wood (2007), with the comment that females were distinguishable from those of *H. eruditus* by the presence of a small tubercle on the frons, with a very slight impression below the tubercle. The presence or absence of this minute tubercle is a variable character and can not be used to distinguish species. In the absence of any other distinguishing characters, *Bostrichus plumeriae* Nördlinger, along with its West Indian synonyms, *Stephanoderes transatlanticus* Eggers and *H. guadeloupensis* Schedl, is placed as another synonym of *H. eruditus*.

One series of five specimens, collected by S. J. Seybold from *Cecropia* leaf stalks in Puerto Rico and placed in the CNCI, differ from the typical form by the reddish head and pronotum with a dark brown elytra and ventral surfaces. In other characters, these specimens fit my concept of *H. eruditus* and are herein considered that species although the possibility exists that they might represent a sibling species.

### *Hypothenemus exceptus* Bright, sp. nov.

Figure 94.

**Type Material.** HOLOTYPE (female) labeled: “BAHAMAS: Man-O-War Cay, 20.VII.1971, H. F. Howden” / “HOLOTYPE *Hypothenemus exceptus* D. E. Bright 2016” (CNCI). PARATYPES (31): 3 labeled: “HAITI, Port-au-Prince, 25–26.V.1984, M. C. Thomas” / “on *Jatropha* sp.” (FSCA); 6 labeled: “WEST INDIES: GRENADA: Lance aux Epines, Coral Cove 10 m, N11°59.57', W61°45.22', 10–28.VIII.2010, thorn shrub FIT, S. Peck” (SBPC, CNCI); 1 labeled: “WEST INDIES: GRAND CAYMAN, 10.V.1992, blacklight trap: Fitzgerald 16237” (FSCA); 1 labeled: “CAYMAN: Cayman Brac, Brac Parrot Reserve, 3 July 2013, R. Turnbow” (FSCA); 1 labeled: “CAYMAN: Cayman Brac, Stake Bay, 3 July 2013, R. Turnbow” / “from seedpod of *Tamarindus indica* L.” (RHTC); 2 labeled: “VIRGIN IS.: St. John, Virgin Is. Nat. Park, 15 July 1994, M. S. Becker, beating at night” (WIBF); 1 labeled: “VIRGIN IS.: St. Croix, Estate Stony Ground, Sandy Pt., 06 JAN 1993, R. S. Miller and D. Sikes” (WIBF); 1 labeled: “VIRGIN IS.: St. Croix, Estate Cotton Garden, S.E.T.E. Station, 11 JAN 1993, D. S. Sikes, leaf/cactus litter” (WIBF); 1 labeled: “VIRGIN IS.: St. Thomas, Est. Nazareth, 40 ft., 01 JAN 1993–06 JUL 1994, VIBFP colrs., flight intercept #9” (WIBF); 1 labeled: “VIRGIN IS.: Buck Is., Buck Is. Reef N. M., 08 JAN 1993, general coll., VIBFP colrs.” (WIBF); 1 labeled: “REDONDA: WEST INDIES: 16°56.36'N, 62°20.75'W, 06 AUGUST 2005, 500–900 ft., I. A. Foley, beating vegetation” (WIBF); 1 labeled: “MONTSERRAT: Cas-sava Ghaut, Beattie House, 16°45.91'N, 62°12.05'W, 21–30 June 2002, 632 ft., M. A. Ivie, uv light” (WIBF); 2 labeled: “MONTSERRAT: Fairy Walk, 15 AUG 2005, 780 ft., I. A. Foley” (WIBF, CNCI); 1 labeled: “WEST INDIES: St. Vincent and Grenadines, Mayreau Island, N12°38', W61°23', 21.VIII.2009, S. Peck, uv trap” (SBPC); 1 labeled: “CURAÇAO: Piscadera Baai, 12°07'20"N, 68°58'06"W, 10 Nov. 2014, R. Turnbow” (RHTC); 2 labeled: “CURAÇAO: Weg Naar, Playa Kanoa, 12°9'37.82"N, 68°52'49.13"W, 10.XI.2014, M. C. Thomas, blacklight trap” (FSCA); 1 labeled: “D. Hilburn, 2.X.87, Paget P, BERMUDA” / “intercepted in nutmeg from W. Indies” (USNM); 1 labeled with same data except “in pods of *Tamarindus*” (USNM); 3 labeled: “BERMUDA: Paget P, 25.X.1987” / “in pods of *Tamarindus*, D. Halburn” (sic) (CNCI).

**Description (Female).** Length 1.3–1.6 mm, 2.5 times longer than wide; reddish-brown to black. Frons evenly convex but very faintly transversely impressed above epistoma; surface subopaque, weakly shining, minutely rugose-reticulate, punctures obscure, setae along epistomal margin almost reaching tip of mandibles. Pronotum 1.1 times wider than long; sides weakly, evenly arcuate; anterior margin broadly rounded, bearing six large, equal sized serrations, these slightly separated; anterior slope bearing 20 moderately large, erect asperities; posterior and lateral portion smooth, subopaque, weakly shining, with small, obscure punctures, these separated by their own diameters; vestiture of intermixed, very small scales and setae. Elytra 1.7 times longer than wide; sides parallel on anterior two-thirds, narrowly rounded behind; discal striae not impressed, punctures moderately large, distinct, weakly impressed;

discal interstriae narrower than striae, shining, bearing a median row of erect scales, these truncate at tip, 2.0 times longer than wide and spaced in row by a distance less than their length. Declivity convex; striae and interstriae as on disc except interstitial scales slightly larger.

**Male.** Unknown.

**Etymology.** From *exceptus*, Latin for exclude or take out, referring to distinctiveness of this species.

**Distribution.** This species occurs throughout the West Indies and in Bermuda.

**Comments.** Females of this species may be distinguished by their large size, by the evenly convex frons which bears no special modification, by the presence of six equal-sized serrations on the anterior margin of the pronotum and by the even rows of short, broad scales on the elytra. These declivital scales are 2.0 times longer than wide and placed closely together in the interstitial row.

### ***Hypothenemus exiguus* (Wood), New Combination**

Figure 95.

*Trischidias exigua* Wood 1986: 273; Wood and Bright 1992: 947; Bright and Skidmore 1997: 197; Bright and Skidmore 2002: 146.

**Description (Female).** Length 0.8–1.0 mm, 2.1 times longer than wide; dark brown to black. Frons transversely impressed above epistoma, impression divided by a short, smooth area, evenly convex above impression, often with a very faint, small, median fovea; surface dull, densely minutely reticulate, with sparse punctures and setae. Pronotum as long as wide, widest at base; sides broadly arcuate; anterior margin narrowly rounded, with four serrations, median pair twice as long as lateral pair; anterior slope with 25 erect asperities; posterior half weakly shining, densely minutely reticulate, granulate, with obscure, short, hairlike setae. Elytra 1.3–1.4 times longer than wide; discal striae not impressed, punctured in rows, punctures small, weakly impressed, each puncture with a short, recumbent seta; discal interstriae 2.0 times wider than striae, each with a median row of erect, slender scales, these 4.0 times longer than wide. Declivity convex; vestiture as on disc except interstitial scales 5.0 times longer than wide.

**Male.** Length 0.60 mm, 2.0 times longer than wide, otherwise similar to female.

**Distribution.** This species occurs from Texas to southern Florida and the Florida Keys and is here recorded from the Barbados, Dominica and Guadeloupe. One record from Escárcega, Campeche, Mexico needs verification.

**Specimens examined.** **BARBADOS:** Turner's Hall Woods, 200 m, 5–23.VI.2007, forest flight intercept trap, S. and J. Peck (1–SBPC). **DOMINICA:** Fortune, 8.8.1984, T. J. Spilman (3–USNM). **GADELOUPE:** Basse-Terre: Rivière Sens, Sentièr Houëlemont, N15°58.93, W61°42.62 / humid forest flight intercept trap, 19–31.V.2012, S. Peck (1–SBPC); Basse-Terre: La Trace du Petit-Malendure, 21 MAY 2012, R. Turnbow (1–RHTC).

**Comments.** Females of this species may be distinguished by the presence of four serrations on the anterior margin of the pronotum with the median pair twice as long as the lateral pair, by the long, slender, hairlike scales on the pronotum and elytra and by the stout body.

Deyrup (1987) reports finding specimens in raised carbonaceous ascomycete fruiting bodies on branches of *Carya floridana*. Numerous specimens were collected in flight intercept traps in southern Florida.

The holotype, in the USNM, was examined.

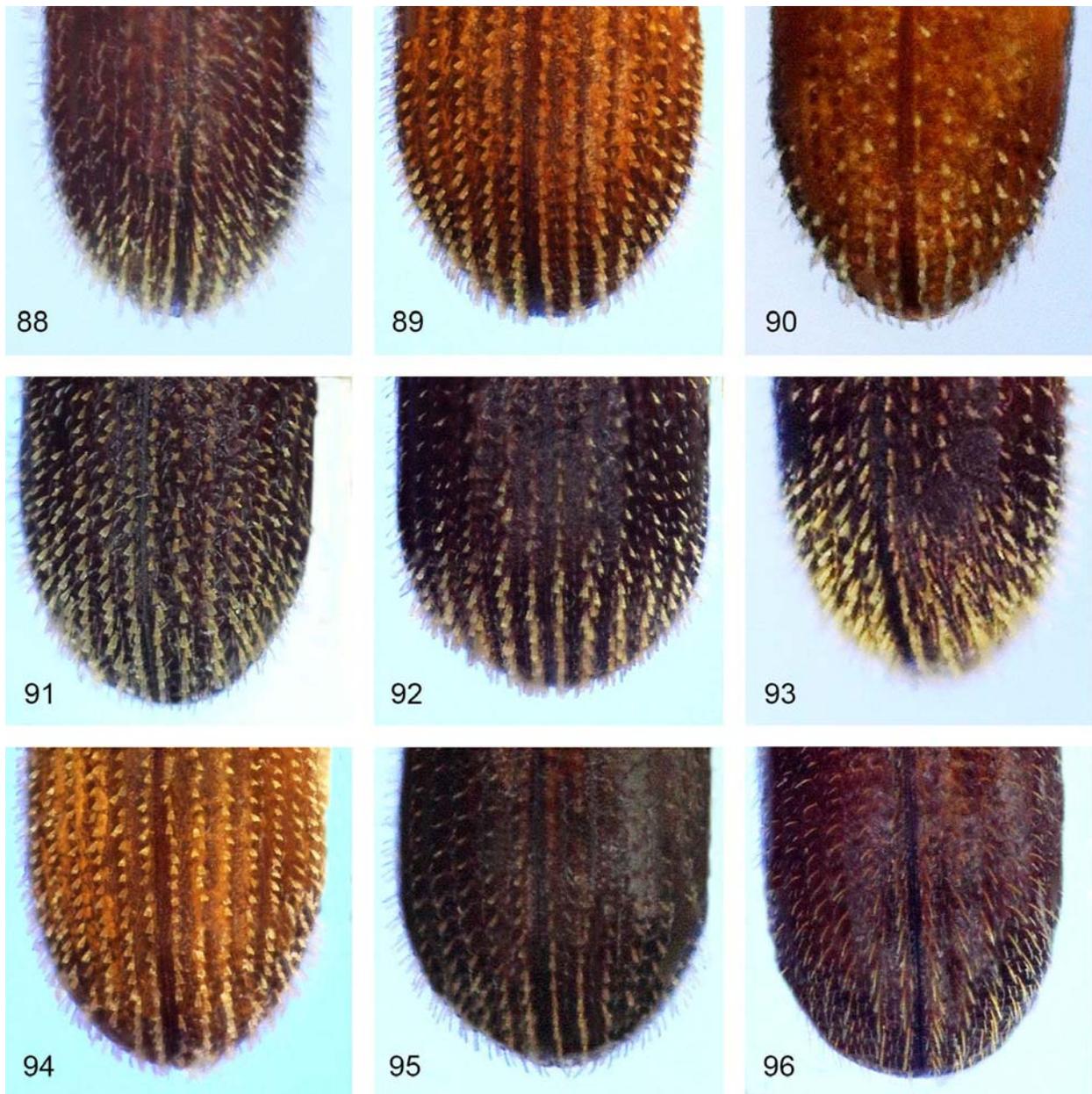
### ***Hypothenemus fuscicollis* (Eichhoff)**

Figure 96.

*Stephanoderes fuscicollis* Eichhoff 1878b: 148.

*Hypothenemus fuscicollis*: Wood and Bright 1992: 926; Bright and Skidmore 1997: 193; Wood 2007: 505.

*Stephanoderes sundaensis* Eggers 1927: 396.



**Figures 88–96.** Declivities of *Hypothenemus* spp. **88)** *H. crinatus*. **89)** *H. crudiae*. **90)** *H. discordis*. **91)** *H. dubitalis*. **92)** *H. erectus*. **93)** *H. eruditus*. **94)** *H. exceptus*. **95)** *H. exiguus*. **96)** *H. fuscicollis*.

*Hypothenemus aequaliclavatus* Schedl 1939c: 33.

*Hypothenemus comosus* Bright 1972: 50. (Jamaica). **New Synonymy.**

**Description (Female).** Length 1.6–1.7 mm, 2.5 times longer than wide; dark reddish-brown. Frons generally convex but faintly transversely impressed above epistoma, with an obscure tubercle at upper level of eyes or with a broad, weakly elevated, smooth carina extending from epistomal margin to near upper level of eyes; surface subopaque, minutely rugose-reticulate, punctures obscure; vestiture consisting of sparse, fine, hairlike setae. Pronotum 1.2 times wider than long; sides evenly arcuate; anterior margin broadly rounded, bearing two to four serrations, if four then median pair contiguous at their bases and much longer than lateral pair; anterior slope bearing 12–15 large, erect asperities; posterior and lateral portion subopaque, distinctly granulate on disc, less so on sides; vestiture entirely hairlike,

consisting of moderately long, abundant, recumbent and erect setae, these somewhat longer on sides. Elytra 1.7 times longer than wide; sides parallel on anterior two-thirds, narrowly rounded behind; discal striae weakly impressed, punctures distinct, weakly impressed; discal interstriae wider than striae, shining, with minute, sparse punctures; vestiture hairlike, consisting of very short strial setae, each seta arising from a puncture, and longer interstitial setae, these 1.0–1.5 times longer than the width of interstriae. Declivity convex; striae and interstriae as on disc except interstriae slightly narrower; vestiture hairlike, 3.0–4.0 times longer than interstitial width and more abundant.

**Male.** Unknown.

**Distribution.** This species occurs from Africa, India and Indonesia to Japan, Belize and northern South America. In the West Indies it is known from Cuba, Jamaica, Montserrat and Saint Vincent.

**Specimens examined.** **CUBA:** Pinar del Rio, Sierra del Rosario, ca. 15 km S. Cinco Pesos Rangel, 29 JUNE 1990, 420 m, M. A. Ivie (1–WIBF, lost 20 July 2010). **JAMAICA:** Saint Andrew Parish, Clydesdale, 18 July 1966, H. and A. Howden (1–CNCI). **SAINT VINCENT AND THE GRENADINES:** Saint Vincent, Emerald Valley Hotel, Buccament, 10–20.VI.2007, uv light, S. and J. Peck (1–SBPC).

**Records from literature.** **JAMAICA:** Bog Walk, 5–VIII-67, L. and C. W. O'Brien (Wood 1982, as *H. sundaensis* (Eggers)). **MONTSEERRAT:** Island record only (Ivie et al. 2008a).

**Comments.** Females of this very distinctive species may be easily recognized by the presence of two or four erect serrations on the anterior margin of the pronotum (if four then lateral pair much smaller than median pair), by the presence of 12–15 large, erect asperities on the anterior slope of the pronotum and by the entirely hairlike vestiture on the body (no flattened scales are present). As far as I am aware, this is the only species of *Hypothenemus* with this type of vestiture in the West Indies.

Wood (1977) reports this species, as *H. aequaliclavatus* Schedl, from Jamaica with no further data and in 1982 reports this species, as *H. sundaensis* (Eggers), from Jamaica. Both names are now considered as synonyms of *H. fuscicollis*.

The specimen representing the Cuba record given above was lost after the identification was confirmed. Until another specimen from Cuba is obtained, the record must be questioned.

The holotype of *H. comosus* was compared to a specimen of *H. fuscicollis* in the USNM that had been compared to the Eichhoff type by Eggers before the Eichhoff type was destroyed.

### *Hypothenemus glabratulus* (Schedl)

Figure 97.

*Stephanoderes glabratulus* Schedl 1957: 192.

*Hypothenemus glabratulus*: Wood and Bright 1992: 926.

*Hypothenemus parvistriatus* Wood 2007: 517. (Florida); Smith, Petrov and Cognato 2017: 81. **New Synonymy**

**Description (Female).** Length 1.2 mm, 2.4 times longer than wide; black, sometimes with reddish pronotum. Frons evenly convex; surface dull, densely minutely reticulate except on a small, median area just above epistomal margin, with a few, faint punctures on edge of smooth area and a few, scattered setae, these setae more abundant and longer along epistomal margin. Pronotum 1.27 times wider than long, widest at base; sides broadly arcuate; anterior margin broadly rounded, with eight to 10, nearly equal sized, basally separated serrations, these separated by a distance nearly equal to their basal width; anterior slope with 20 small, erect asperities, these much smaller than serrations on anterior margin; summit weakly elevated; posterior half weakly shining, densely minutely reticulate, with scattered, minute granules and short, narrowly flattened scales. Elytra 1.5 times longer than wide; sides very weakly arcuate on basal two-thirds, apex broadly rounded; discal striae not impressed, punctured in rows, punctures small, obscure, almost indiscernible, each with a minute seta, these longer near and on declivity; discal interstriae wider than striae, each with a median row of small, erect scales, these shorter than interstriae and 1.5–2.0 times longer than wide, these becoming gradually longer toward declivity. Declivity convex; interstitial scales longer than those of disc, 3.0–4.0 times longer than wide; interstriae with

abundant, moderately long, recumbent to semirecumbent, hairlike setae, these becoming almost as long as adjacent scales.

**Male.** Unrecognized in material examined.

**Distribution.** This species occurs from southern Florida, south throughout the West Indies. It is also reported from Loreto, Peru (Smith et al. 2017).

**Specimens examined.** **BAHAMAS: Andros Island**, London Ridge, 2.7 mi N, 0.8 mi E Forfar Forest Station, 6 May 1994, R. S. Anderson, ex: high interior coppice litter (2–CNCI); Maidenhair Coppice, 2.1 mi S, 0.7 mi E Staniard Creek, 6 May 1994, R. S. Anderson, ex: low interior coppice litter (1–CNCI). **BARBADOS:** Turners Hall Woods, 200 m, 24.V-6.VI.2006, forest Malaise, S. and J. Peck (1–SBPC); Welchmann Hall Gully, N13°11.74', W59°34.60', 26.V.06, forest litter, 270 m, S. and J. Peck (1–SBPC). **CUBA:** Santiago de Cuba, 2 km W. Chivirico, 88 m, 19.96324–76.44084, 2.X.2014, R. Anderson, F. Cala-Riquelme, A. Deler Hernandez, 2014–026, coastal shrub litter, arroyo (1–CMNO); Holquin, Sierra de Nipe, 23 km S Mayart, Pinares de Mayart, 650 m, 08 Jul 1990, pine forest litter, M. A. Ivie (1–WIBF); Holquin, La Melba, road out of La Melba, 20.59086–74–83627, 130 m, 24.IX.2014, R. Anderson, F. Cala-Riquelme, A. Deler Hernandez, 2014–016, shrub forest litter (1–CMNO). **DOMINICA:** Portsmouth, Cabrits National Park, 30 m, 2–13.VI.2004, tropical deciduous forest flight intercept trap, S. and J. Peck (7–SBPC, CNCI). **GRENADA:** Grand Etang Forest Res., 10–28.VIII.2010, 400 m, rainforest flight intercept trap, S. Peck (2–SBPC). **GADELOUPE:** Basse-Terre: Rivière Sens, Sentier Houëmont, N15°58.93', W61°42.62', 80 m, 19–31.V.2012, humid forest flight intercept trap, S. Peck (8–SBPC, CNCI); Basse-Terre: Pigeon, Trace Poirier, N16°08.83', W61°45.22' / humid forest flight intercept trap, 350 m, 14–31.V.2012, S. Peck (3–SBPC); Basse-Terre: Sentier, Houëmont, 19.V.2012 / deciduous forest litter, 867 m, R. Anderson (1–CMNO); Basse-Terre: Point à Lezard, 17.V.2012, 16.13948, 61.77409, 70 m, scrub forest litter, R. Anderson (1–CMNO). **JAMAICA:** Saint Anne Parish, Rum Cove, 1 January 1955, leaf litter: F. Bellinger (3–MNHW, IJCK). **MARTINIQUE:** 1 or 2 km E and NW Diamont, 7–23.VII.2010 (3–SBPC, CNCI); 4 km N Ste-Luce, Forêt Montravail, N14°29.9', W60°55.7', 300 m, 17.VII.2012, humid forest, under bark, S. Peck (1–SBPC). **MONTserrat:** Woodlands, Cassava Ghaut, Beattie House, 01–29 June 2003, K. A. Marske, flight intercept trap (7–WIBF). **NETHERLANDS ANTILLES: Saba**, Crispeen Track, 1281' 28.IV.2013 / *Cecropia* petiole, D. E. Bright and B. A. Barr (1–CNCI); **Saba**, Bottom Mountain Trail, 1366 ft, 27.IV.2013 / *Cecropia* petiole, D. E. Bright and B. A. Barr (1–CNCI). **PUERTO RICO:** Mayagüez, 20 Sept. 2010, E. Abreu (1–CNCI). **SAINT LUCIA:** Chassin trap site, 13.99656°N, 60.91955°W, 94 m, 17 May 2009, A. R. Cline, S. D. Gaimari, R. Winton, ex: berlese of forest litter (1–WIBF); Grande Anse trap site, 14.00529°, 60.89737°, 38 m, various dates in May 2009, A. R. Cline, S. D. Gaimari, R. Winton, C. A. Maier, ex: flight intercept trap and berlese of forest litter (7–WIBF); Mon Repos, 6.5 km W Fox Grove Inn, 10–28.VI.2007, submontane forest flight intercept trap, 300 ft., S. and J. Peck (10–SBPC); Praslin, 50 m, 25.VII.2007 / lowland, woodland ravine flight intercept trap, S. and J. Peck (1–SBPC). **SAINT VINCENT AND THE GRENADINES: Saint Vincent**, Emerald Valley Hotel, Buccament, 10–20.VI.2007 / flight intercept trap, 30 m, S. and J. Peck (2–SBPC). **VIRGIN ISLANDS (BRITISH): Tortota**, Mt. Sage, 1600–1700', 6.X.01, B. and B. Valentine (1–CNCI). **VIRGIN ISLANDS (U. S.): Saint Croix**, Est. North Hall, Creque Gut, 100 ft., various dates in 1993, J. Keularts, flight intercept trap (5–WIBF); Est. Fountain, 35 ft., 20 Apr-19 May 1993 (5) and 06 Jan-23 Feb 1993 (1), J. Keularts, flight intercept trap (1–WIBF); Est. North Star, 20 Apr-19 May 1993 (1) and 15 Nov-18 Dec 1992 (1), same locality, 60 ft., flight intercept trap, J. Keularts (2–WIBF). **Saint John**, Estate L'Esperence, 2 Feb. 1984, old log, W. B. Muchmore (2–WIBF). **Saint Thomas**, Est. Lilliendahl, 10 Aug 1990 (1) and 02 Aug 1980 (1) / ex. flight intercept trap / Etelman Observatory, elev. 1200 ft / M. A. Ivie (6–WIBF).

**Comments.** Females of this species may be readily recognized by the densely pubescent apical portion of the elytral declivity, by the black color and by the size. One specimen from Saint Lucia has a reddish pronotum and may be slightly immature.

The holotype of *Stephanoderes glabratulus*, in the NHMW, was examined (July 2014) and compared to specimens that had been previously compared to the type series of *Hypothenemus parvistriatus*, now in the USNM. Only one species could be recognized. The distinctive group of setae on the elytral apex of the type of *S. glabratulus* are slightly less obvious than those on the elytral apex of *H. parvistriatus* but other characters are identical.

### *Hypothenemus gossypii* (Hopkins)

Figure 98.

*Stephanoderes gossypii* Hopkins 1915a: 25.

*Hypothenemus gossypii*: Wood and Bright 1992: 926; Bright and Skidmore 1997: 193; Bright and Skidmore 2002: 143.

**Description (Female).** Length 1.2–1.4 mm, 2.6 times longer than wide; dark brown to black. Frons convex, very faintly impressed above epistoma, with a very weak, median, longitudinal line; surface weakly reticulate, with distinct, close punctures. Pronotum as long as wide, widest at base; sides weakly arcuate; anterior margin broadly rounded, bearing six separated serrations, median pair more widely separated; anterior slope bearing numerous, small, erect asperities; posterior area weakly shining, densely rugose-reticulate; vestiture consisting of erect, scalelike setae intermixed with shorter, hairlike setae. Elytra 1.5–1.6 times longer than wide, sides straight, parallel on anterior two-thirds, narrowly rounded behind; discal striae not impressed, punctures distinct, large, weakly impressed; discal interstriae shining, as wide as striae, very finely punctured, punctures scattered, each with a median row of erect scales, these as long as distance between rows and 3.0–5.0 times longer than wide. Declivity convex, not especially modified except hairlike pubescence more abundant especially on postero-lateral areas.

**Male.** Similar to female except smaller, 0.7–0.8 mm; antennal funicle often 1-segmented (pedicel excluded); pubescence longer and more slender.

**Distribution.** This species is known from southern Florida, Hidalgo, Mexico and Cuba.

**Specimen examined. CUBA:** Cayamas, E. A. Schwarz (1–USNM).

**Comments.** The above description was taken from several metatype specimens of *H. beameri* Wood, a synonym of *H. gossypii*. Other than the type specimen from Cuba, no other West Indian specimens were seen during preparation of this monograph although hundreds of specimens of *Hypothenemus* were examined.

Females of this species closely resemble those of *H. eruditus* but can be distinguished, with difficulty, by the presence of six widely separated serrations on the anterior margin of the pronotum, the median pair of which are more widely separated than the others. In addition, the elytral scales are usually more slender.

Vázquez et al. (2003) record *Gossypium* as a host plant in Cuba.

Ivie et al. (2008a) record this species from Montserrat. This is, most likely a misidentification, probably by me, and should be ignored until authentic specimens are seen.

***Hypothenemus granulatus* Bright, sp. nov.**

Figure 133.

**Type Material. HOLOTYPE** (female) labeled: “CURAÇAO: Christoffel Park, Savonet, 12°21'01”N, 69°06'23”W, 5 Nov. 2014, R. Turnbow” / “HOLOTYPE *Hypothenemus granulatus* D. E. Bright 2016” (RHTC [FSCA]). **PARATYPES** (2): 1 labeled with same data as holotype (CNCI); 1 labeled “CURAÇAO: Christoffel Park, Northern Route, 12°21'02”N, 69°06'11”W, 12 Nov. 2014, R. Turnbow” (FSCA).

**Description (Female).** Length 1.8–1.9 mm, 2.1 times longer than wide; very dark reddish-brown. Frons evenly convex; surface dull, densely minutely reticulate, with a few, scattered, obscure granules and with a smooth, shining, narrow, longitudinal space extending from epistomal margin to a small, median fovea at level of upper margin of eye. Pronotum 1.3 times wider than long, widest at base; sides broadly arcuate; anterior margin broadly rounded, with two, basally contiguous serrations; anterior slope bearing 12–15 large, erect asperities (excluding cluster on summit); summit distinct, with several, smaller, close asperities; posterior surface dull, densely granulate. Elytra 1.3 times longer than wide, widest near middle; sides weakly arcuate, apex broadly rounded; discal striae weakly, distinctly impressed, punctures obsolete, surface dull, reticulate; discal interstriae wider than striae, dull, densely reticulate, each with a median row of small, erect scales, these shorter than interstitial width, 2.0 times longer than wide. Declivity convex; striae more deeply impressed, narrower than discal width; interstriae dull, densely reticulate, each bearing a median row of distinct, large granules and narrow scales, these longer than those on disc.

**Male.** Unknown.

**Distribution.** Known from Curaçao in the Netherlands Antilles.

**Etymology.** From *granum*, Latin for small kernel, referring to the row of granules on the declivital interstriae.

**Comments.** Females of this very distinctive species may easily distinguished by the very dull, reticulate appearance of both pronotum and elytra, by the row of large granules in each declivital interstriae, by the presence of two, basally contiguous serrations on the anterior margin of the pronotum and by the presence of 12 large, erect asperities on the anterior slope of the pronotum. Specimens were collected with individuals of *H. ponticus* and may be distinguished by the characters outlined in the key to species and in the comments concerning *H. ponticus*.

***Hypothenemus hampei* (Ferrari)**

Figure 99.

*Cryphalus hampei* Ferrari 1867: 11–12.

*Hypothenemus hampei*: Wood and Bright 1992: 927; Bright and Skidmore 1997: 193; Bright and Skidmore 2002: 143; Bright and Torres 2006: 407; Wood 2007: 511.

**Description (Female).** Length 1.4–1.7 mm, 2.3 times longer than wide; black to dark brown. Frons convex, with a faint, weakly impressed, longitudinal groove extending from epistomal margin to upper level of eyes; surface weakly reticulate with very faint punctures. Pronotum 1.1–1.2 times wider than long, widest at base; sides arcuate on basal half; anterior margin narrowly rounded, bearing six erect, basally contiguous serrations; anterior slope bearing numerous small asperities; posterior area moderately shining, minutely reticulate, with scattered, minute granules; vestiture consisting of erect, hairlike scales and setae. Elytra 1.5 times longer than wide; sides parallel on posterior two-thirds, apex narrowly rounded; discal striae not impressed, punctures large, deeply impressed; discal interstriae narrower than striae, surface shining, reticulate, punctures obsolete, each interstriae with a row of erect, hairlike scales, these 6.0 times longer than wide, spaced between rows by a distance equal to length of a scale. Declivity convex, not especially modified; declivital scales similar to those on disc.

**Male.** Similar to female except smaller, 1.0–1.1 mm long.

**Distribution.** This species is known from throughout the coffee producing regions of Africa, Asia, Indonesia, Central America and South America and recently from Hawaii (Burbano et al. 2011). In the West Indies it is known from Cuba, Jamaica, and Puerto Rico.

**Specimens examined. JAMAICA:** Island record only, VII.1978, coffee beans (5–CNCI); Mayagüez, 12.IX.2011, D. Jenkins / coffee beans (12–CNCI). **PUERTO RICO:** Adjuntas, Agriculture Experimental Station, various dates in 2009, E. Abreu, coffee berries (100–CNCI); Mayagüez, 12.IX.2011, D. Jenkins, ex: coffee berries (12–CNCI).

**Records from literature. CUBA:** Island record only (Vázquez et al. 2003). **PUERTO RICO:** San Sebastián, Utuado (USDA Report DA-2007–37, unpublished).

**Comments.** Females of this species may be recognized by the very slender, almost hairlike interstitial scales, by the somewhat larger body size and by the host.

This species is commonly known as the Coffee Berry Borer and is a serious pest of coffee wherever it occurs. This species was reported from Puerto Rico, but no specimens were seen during preparation of this monograph or during the research reported in the paper on the Puerto Rico fauna (Bright and Torres 2006). A survey for the Coffee Berry Borer in the major coffee growing regions on Puerto Rico in 2002 indicated that the beetle was not present on the island (Vega et al. 2002). However, a recent USDA unpublished report confirms the occurrence of this species on Puerto Rico (USDA, APHIS, Report DA-2007–37) and many specimens were recently seen that verifies its occurrence on the island.

The biology of this species has been extensively studied (see references in Damon 2000 and Le Pelly 1968).

***Hypothenemus hirsutus* (Wood)**

Figure 100.

*Stephanoderes hirsutus* Wood 1954: 1020.

*Hypothenemus hirsutus*: Wood and Bright 1992: 930; Bright and Skidmore 1997: 194; Bright and Skidmore 2002: 144.

**Description (Female).** Length 1.7–1.9 mm, 2.2 times longer than wide; dark to light reddish-brown to black. Frons convex; surface shining, with close, obscure punctures. Pronotum 1.2–1.3 times wider than long, widest at base; sides broadly arcuate; anterior margin broadly rounded, bearing four to six basally contiguous serrations, if four then median pair contiguous at their bases and much longer than lateral pair; anterior slope bearing 8–12 or 15 large, erect asperities; posterior portion smooth, shining, with scattered, deep punctures; vestiture entirely hairlike. Elytra 1.5–1.6 times longer than wide; sides parallel on anterior two-thirds, apex broadly rounded; discal striae weakly impressed, with large, distinctly impressed punctures; discal interstriae as wide as striae, shining, with minute, sparse punctures, each interstriae with a median row of erect scales, these shorter than distance between rows. Declivity convex; striae and interstriae as on disc except interstitial scales much longer and hairlike.

**Male.** Similar to female but smaller.

**Distribution.** This species is known from the Florida Keys, Cuba and the Dominican Republic.

**Specimens examined. DOMINICAN REPUBLIC:** Pedernales, 4 km W Oviedo, 10 m, arid thorn forest, 28.XI-4.XII.1991, intercept traps, Masner and Peck, 91–344 (2–CMNO); San Juan, 16 km SE San Juan, August 8 1979, C. W. O'Brien (1–CNCI).

**Record from literature. CUBA:** Island record only (Vázquez et al. 2003).

**Comments.** Females of this species are similar to those of *H. fuscicollis* but may be distinguished by the presence of very narrowly flattened, erect scales on the discal interstriae and by the slightly larger size.

The Dominican Republic specimens mentioned above were compared to two paratypes from the Florida Keys.

***Hypothenemus ignotus* Bright, sp. nov.**

Figure 101.

**Type Material. HOLOTYPE** (female) labeled: “WEST INDIES: BARBADOS, Turner’s Hall Woods, 200 m., 5–23.VI.2007, forest FIT, S. and J. Peck” / “HOLOTYPE *Hypothenemus ignotus* D. E. Bright 2016” (SBPC [CNCI]).

**Description (Female).** Length 1.0 mm, 2.0 times longer than wide; black. Frons very weakly, transversely impressed above epistomal margin, evenly convex above, with a distinct, short, median groove at upper eye level; surface shining, densely minutely reticulate, without punctures or setae. Pronotum 1.2 times wider than long, widest at base; sides broadly arcuate; anterior margin narrowly rounded, with two, basally contiguous serrations; anterior slope with 15, widely separated, erect asperities; posterior half moderately shining, smooth, with scattered, minute granules, with scattered, erect, narrowly flattened scales. Elytra 1.2–1.3 times longer than wide; discal striae not impressed, punctured in rows, punctures small, weakly impressed, each puncture with a distinct, short seta slightly longer than diameter of puncture; discal interstriae as wide as striae, each with a median row of erect, flattened scales, these as long as interstitial width and 3.0–4.0 times longer than wide and slightly longer and wider than those on pronotal disc. Declivity convex; surface as on disc except interstitial scales very slightly longer and striae very slightly more deeply impressed.

**Male.** Unknown.

**Distribution.** This species is known from the Barbados.

**Etymology.** From *ignotus*, Latin for unknown or strange.

**Comments.** Females of this species can be distinguished by the distinct, median groove of the frons, by the unimpressed elytral striae with shallow, obscure punctures and by the short, interstitial scales.

***Hypothenemus improvidus* Bright, sp. nov.**

Figure 102.

**Type Material.** **HOLOTYPE** (female) labeled: “WEST INDIES: **GRENADA**, Saint Andrew Par., Mirabeau Agr. Sch., 8.V.1990, A. Thomas, blacklight trap” / “HOLOTYPE *Hypothenemus improvidus* D. E. Bright 2016” (FSCA). **PARATYPES** (2): 1 labeled with same data as holotype (CNCI); 1 labeled: “WEST INDIES: **SAINT LUCIA**, Nr. Micoud, trail toward Fond Bay, 13°49’48”N, 60°53’42”W, 15 m, S. D. Gaimari, A. R. Cline, 16–22 MAY 2009 (08–01B)” (WIBF).

**Description (Female).** Length 1.4–1.5 mm, 2.5 times longer than wide; reddish-brown. Frons distinctly transversely impressed above epistoma, impression extending from epistoma to upper level of eyes, with a very obscure, shining, longitudinal smooth line on lower half, upper margin of impression rounded, not distinctly elevated, bearing a low, rounded tubercle; surface shining, densely, minutely reticulate. Pronotum 1.3 times wider than long, widest behind middle; sides broadly arcuate; anterior margin broadly rounded, bearing eight small, equal-sized serrations, median pair slightly longer than others; summit strongly elevated; posterior portion shining, minutely reticulate-granulate, with intermixed short scales and setae. Elytra 1.4–1.5 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae weakly impressed, punctures large, shallowly impressed; discal interstriae narrower than striae, shining, each interstriae bearing a median row of short, erect scales, these shorter than distance between rows, each scale 2.0–3.0 times longer than wide with truncate tip; ground vestiture absent. Declivity convex; striae slightly more deeply impressed, otherwise resembles disc.

**Male.** Unknown.

**Distribution.** This species is known from Grenada and Saint Lucia.

**Etymology.** From *improvidus*, Latin for unexpected.

**Comments.** Females of this species may be recognized by the distinctly impressed frons with the upper margin of the impression indistinct and rounded and bearing a small, rounded tubercle or granule, by the very even rows of small, erect, interstitial scales and very small strial setae, by the absence of any ground vestiture and by the presence of eight, nearly all equal-sized serrations on the anterior margin of the pronotum.

***Hypothenemus indistinctus* Bright, sp. nov.**

Figure 103.

**Type Material.** **HOLOTYPE** (female) labeled: “**JAMAICA**: Pimento Warehouse, X.12.2006, D. A. Geoghagen, ex: nutmeg” / “HOLOTYPE *Hypothenemus indistinctus* D. E. Bright 2016” (CNCI).

**Description (Female).** Length 0.9 mm, 2.2 times longer than wide; light brown. Frons evenly convex, evidently not transversely impressed above epistoma, with a very faint, median groove extending from epistomal margin to upper level of eye; surface moderately shining, very finely, minutely reticulate. Pronotum 1.3 times wider than long, widest at base; sides broadly rounded; anterior margin narrowly rounded, bearing six serrations, median pair longer and basally contiguous; anterior slope with numerous, small, scattered asperities smaller than median pair on anterior margin; posterior half dull, minutely reticulate, with scattered, very small granules and very short, semirecumbent, hairlike setae and longer, erect scales, scales truncate at tip, 3.0–4.0 longer than width at tip. Elytra 1.3 times longer than wide; sides parallel on basal half, converging to narrowly rounded apex; discal striae very weakly impressed, punctured in regular rows, punctures large, weakly impressed, separated by much less than half of diameter of puncture, each with a minute seta; discal interstriae much narrower than striae, each with a median row of erect, broad scales, each scale 5.0 times longer than wide, as long as width between

interstriae, apex truncate; entire elytral surface dull, densely minutely reticulate. Declivity evenly convex, striae and interstriae as on disc except for a row of minute granules at base of each interstitial scale.

**Male.** Unknown.

**Distribution.** This species is known from Jamaica.

**Etymology.** From *indistinctus*, Latin for obscure, referring to the vague characteristics of this species.

**Comments.** Females of this species resemble those of *H. puertoricensis* but differ by the dull, densely reticulate elytral surface of both striae punctures and interstriae and by the smaller size. The holotype was found in a series of *H. obscurus* taken from nutmeg seeds in a warehouse in Jamaica.

***Hypothenemus inordinatus* Bright, sp. nov.**

Figure 104.

**Type Material.** HOLOTYPE (female) labeled: "CAYMAN: Little Cayman, west end lighthouse, 7 June 2013, R. Turnbow" / "HOLOTYPE *Hypothenemus inordinatus* D. E. Bright 2016" (RHTC [FSCA]).

**Description (Female).** Length 1.4 mm, 2.8 times longer than wide; light brown. Frons deeply, transversely impressed from epistoma to level of upper margin of eyes, upper margin of impression rounded, not carinate or elevated; surface of impressed area smooth, shining, very faintly punctured and bearing scattered, short setae, surface above impression shining, minutely reticulate with a few punctures larger than those in impressed area. Pronotum as long as wide, widest at middle; sides broadly arcuate; anterior margin broadly rounded, bearing six, distinct separated serrations except median pair basally contiguous; anterior slope with 30 small, scattered asperities, these slightly smaller than median pair on anterior margin; posterior half smooth, shining, with numerous, scattered, weakly impressed punctures and short, erect scales truncate at tip, 3.0–4.0 longer than width at tip and scattered, recumbent hairlike setae. Elytra 1.7 times longer than wide; sides parallel on basal half, converging to narrowly rounded apex; discal striae not impressed, punctured in regular rows, punctures moderately large, weakly but distinctly impressed, separated by a distance half of diameter of puncture, each puncture bearing a distinct seta slightly longer than diameter of puncture; discal interstriae narrower than striae, each with a median row of erect, broad scales, each scale 2.0 times longer than wide, as long as width between interstriae, apex truncate; entire elytral surface moderately shining. Declivity evenly convex; interstitial scales longer than interstitial width and 4.0 longer than wide; surface with abundant, moderately long, hairlike setae.

**Male.** Unknown.

**Distribution.** This species is known from Little Cayman in the Cayman Islands.

**Etymology.** From *inordinatus*, Latin for disorderly, or confused, referring to the appearance of the adults of this species.

**Comments.** Females of this species may be recognized by the distinct, longitudinal impression on the frons, by the rounded upper margin of this impression, by the arrangement of the serrations on the anterior margin of the pronotum and by the dense vestiture on the elytral declivity which consists of abundant, recumbent, hairlike setae and rows of slender erect scales.

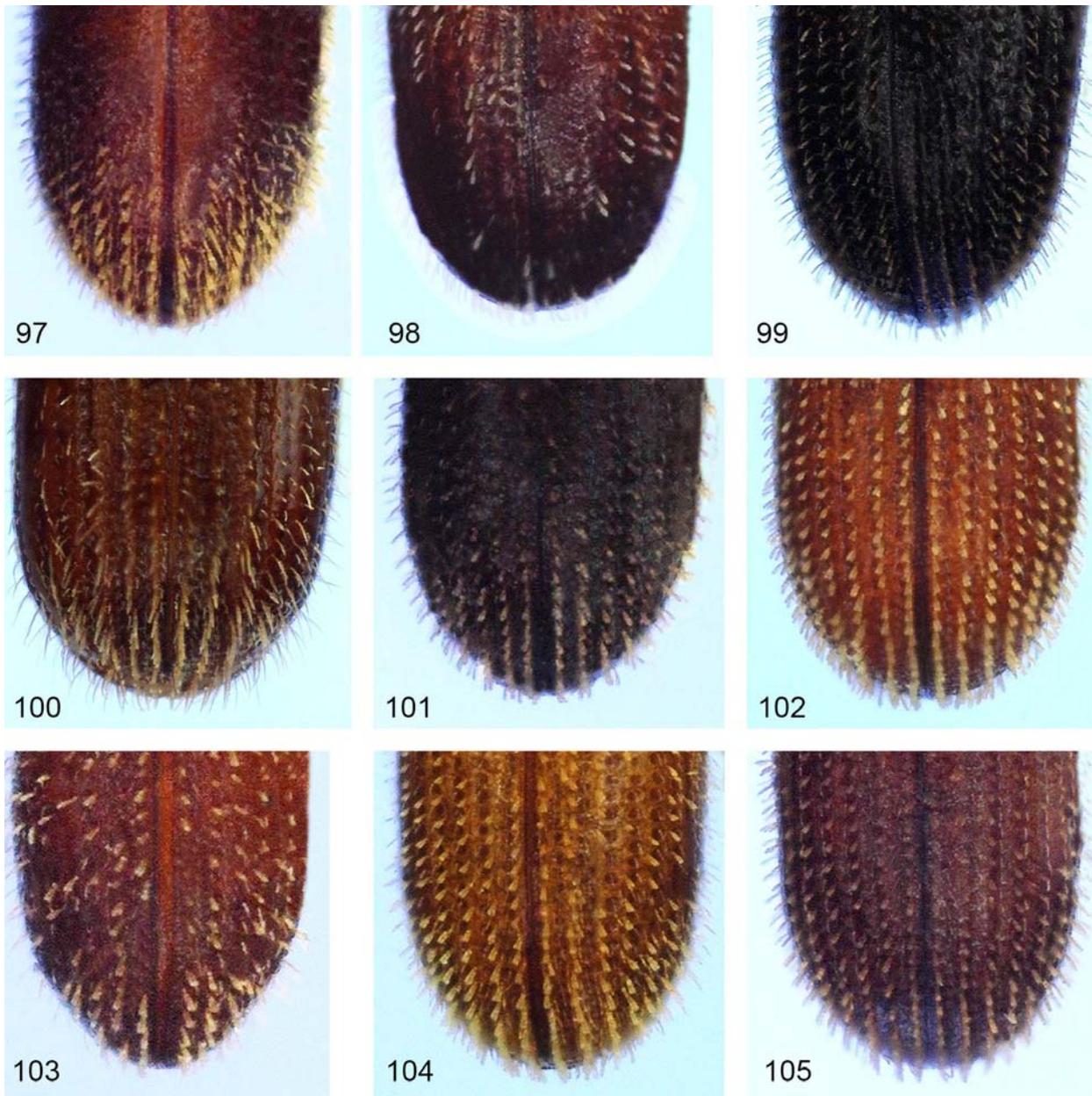
***Hypothenemus interstitialis* (Hopkins)**

Figure 105.

*Stephanoderes interstitialis* Hopkins 1915a: 28.

*Hypothenemus interstitialis*: Wood and Bright 1992: 931; Bright and Skidmore 1997: 194; Bright and Skidmore 2002: 144; Wood 2007: 510.

*Hypothenemus ceibae* Hopkins 1915a: 20. (Cuba). **New Synonymy.**



**Figures 97–105.** Declivities of *Hypothenemus* spp. **97)** *H. glabratus*. **98)** *H. gossypii*. **99)** *H. hampei*. **100)** *H. hirsutus*. **101)** *H. ignotus*. **102)** *H. improvidus*. **103)** *H. indistinctus*. **104)** *H. inordinatus*. **105)** *H. interstitialis*.

*Stephanoderes obliquus* Hopkins 1915a: 30 (Cuba).

**Description (Female).** Length 1.3–1.7 mm, 2.2 times longer than wide; dark reddish-brown to black. Frons convex, with a faint, narrow, longitudinal, median groove and often with a faint, weakly impressed, median impression at upper level of eyes; surface weakly shining, densely, minutely reticulate with scattered, very faint punctures. Pronotum 1.1–1.2 times wider than long, widest at base; sides arcuate on basal half; anterior margin broadly rounded, bearing four to six erect, basally contiguous serrations, lateral pairs very small; anterior slope bearing more than 25 large, erect asperities; posterior area moderately shining, minutely granulate behind summit; vestiture consisting of erect, flattened scales and setae. Elytra 1.3–1.4 times longer than wide; sides parallel on posterior two-thirds, apex broadly rounded; discal striae weakly impressed, punctures small, weakly impressed; discal interstriae smooth,

1.5–2.0 times wider than striae, surface shining, reticulate, punctures obsolete, each interstriae with a row of erect, flattened scales, these 3.0–4.0 times longer than wide, spaced between rows by a distance much less than length of a scale. Declivity convex, not especially modified; declivital scales more slender than those on disc, almost hairlike and 5.0–6.0 times longer than wide.

**Male.** Similar to female except smaller, 1.0–1.1 mm long.

**Distribution.** This species occurs throughout the eastern United States from Connecticut and Kansas to Texas and Florida, south to Costa Rica. It probably occurs throughout the West Indies.

**Specimens examined.** **CUBA:** Cayamas, E. A. Schwarz (2-USNM); Santiago de Cuba, Parque Nacional Gran Piedra near La Isabellica, 1075 m, 20.003–75.613, 27.I.2012, R. Anderson, wet pluviselva litter, 2012–008 (1-CMNO). **DOMINICAN REPUBLIC:** Province Pedernales, 20 km N Cabo Rojo, 365 m, Las Mercedes turn-off, 21 Aug 1988, beating second, Cassia and Acacia / M. A. Ivie, T. L. Philips and K. A. Johnson (1-WIBF); Monte Cristo, 5.3 km. N Villa Elisa, 26 May 1992, R. Turnbow (1-RHTC). **JAMAICA:** Great Goat Island: Saint Catherine Parish, 01 March 1995, W. Lu (1-WIBF). **NETHERLANDS ANTILLES:** Saba, Spring Bay Trail at 227 m, 17.63348N, 63.22441W, dry open shrub, beating, 10 May 2008, D. S. Sikes (1-WIBF).

**Record from literature.** **GRENADA** and **PUERTO RICO:** Island records only (Wood and Bright 1992).

**Comments.** Females of this species may be most readily distinguished by the convex frons, by the stout body and by the longer, more slender scales on the declivital interstriae. The scales on the lateral portions of the elytra are slightly more slender than those on the disc or declivity.

The holotype of *H. ceibae* was examined. The specimen is slightly smaller than typical specimens of this species but in other respects it fits within my concept of *H. interstitialis*. *Hypothenemus ceibae* has priority over *H. interstitialis* and all of the recognized synonyms, but I am employing the principle of First Reviser (International Code of Zoological Nomenclature 1999, Article 24.2.2) and am using *H. interstitialis* as the name of this species because of its more frequent usage.

Vázquez et al. (2003) record *Bursera* and *Ceiba* as hosts in Cuba (as *H. ceibae*).

### *Hypothenemus javanus* (Eggers)

Figures 106, 392.

*Stephanoderes javanus* Eggers 1908: 215.

*Hypothenemus javanus*: Wood and Bright 1992: 932; Bright and Skidmore 1997: 194; Bright and Skidmore 2002: 144; Wood 2007: 524.

*Stephanoderes obesus* Hopkins 1915a: 30 (Cuba).

*Stephanoderes brunneus* Hopkins 1915a: 31. (Texas). **New Synonymy**

*Hypothenemus brunneus*: Wood and Bright 1992: 911; Bright and Skidmore 1997: 191; Bright and Skidmore 2002: 141; Bright and Torres 2006: 405; Wood 2007: 525.

*Stephanoderes bituberculatus* Eggers 1940: 126 (Guadeloupe).

*Stephanoderes pistor* Schedl 1951: 102 (Cuba).

*Stephanoderes prosper* Schedl 1951: 103 (Guadeloupe).

**Description (Female).** Length 1.3–1.7 mm, 2.3 times longer than wide; dark brown. Frons strongly, transversely impressed from epistoma to above upper level of eyes, with a strong, transversely elevated, costate elevation on upper margin of impression; surface brightly shining, weakly punctured. Pronotum 1.1 times wider than long, widest at middle; sides broadly arcuate on basal half; anterior margin broadly rounded, bearing two to four erect, basally contiguous serrations, median pair slightly larger; anterior slope bearing 12–18 large, erect asperities; posterior area moderately shining, subreticulate, minutely granulate behind summit; vestiture consisting of erect, flattened scales and setae. Elytra 1.3–1.5 times longer than wide; sides parallel on posterior two-thirds, apex broadly rounded; discal striae very weakly to not impressed, punctures small, weakly impressed; discal interstriae 1.5–2.0 times wider than striae, surface shining, reticulate, punctures obsolete, each interstriae with a row of erect, flattened scales, these 6.0 times longer than wide, spaced between rows by a distance equal to length of a scale. Declivity convex, not especially modified; declivital scales more slender than those on disc, 6.0–8.0 times longer than wide.

**Male.** Similar to female except smaller, length 1.0–1.1 mm; eye reduced in size and pubescence slightly longer and more slender.

**Distribution.** This species is widespread from the southern United States to Panama and in the Galapagos Islands. It occurs in Indonesia, Africa and the Philippine Islands and probably throughout the West Indies.

**Specimens examined.** **ANTIGUA:** Christian Valley, blacklight trap, various dates 1991, FAO Insect Survey (8–CNCI). **BAHAMAS:** **Andros Island,** Morgan’s Bluff, 25.VII.2006, M. C. Thomas, hand collected (1–FSCA); Bahring Point, 24 July 2008, R. Turnbow (1–RHTC). **Great Inagua,** South Bay road, 11 July 2007, R. Turnbow (2–RHTC). **CAYMAN ISLANDS:** **Cayman Brac,** N19°43.158', W79°47.579', 5 June 2008, R. Turnbow (3–RHTC); Bight Road at Major Donald Dr., Brac Parrot Preserve, 23.V.2009, M. C. Thomas (1–FSCA). **Grand Cayman,** Georgetown, 2 June 2008 (1) and 20 May 2009 (2), R. Turnbow (3–RHTC). **CUBA:** Cayamas (1–USNM); Havana (1–USNM); N of Vinales, Sept. 16–22.2013 (1–AMNH); Santiago Province, Santiago, Jardín Botánico, 5–17.XII.95, 5 m, disturbed forest flight intercept trap, S. Peck (1–SBPC). **DOMINICA:** Cabrits National Park, Fort Shirley, 6.26.2004, C. W. and L. B. O’Brien (1–CNCI); Roseau, X.1967, N. L. H. Krauss (1–USNM); Roseau, 1967, N. L. H. Kraus (1–USNM). **DOMINICAN REPUBLIC:** Barahona, 4.5 km S Barahona, 9 July 1996, R. Turnbow (1–RHTC); Independencia, ESE Jimani, La Florida, S. of Lago Limon, 14Apr1992, beating, M. A. Ivie, D. S. Sikes (1–WIBF); Province Pedernales, 14 km N Cabo Rojo, 150 m (1–WIBF); 20 km N Cabo Rojo, 365 m (1–WIBF); San Pedro, 13 km E Boca Chica, 14 May 1992, R. Turnbow (1–RHTC); Pedernales, 4 km W Oviedo, 10 m, arid thorn forest, 28.XI–4.XII.1991, intercept traps, Masner and Peck (1–CMNO). **GUADELOUPE:** BT: Pointe-à-Lezard, 80 m., scrub forest litter, R. Anderson (1–CMNO); Island record only (2–MNHP, NHMW). **JAMAICA:** Port Henderson, June 25, 1958, M. W. Sanderson (2–CNCI); Saint Andrew Parish, Bull Run, 19 April 1959, Farr and Sanderson (1–INHS); Saint Catherine Parish, Port Henderson, 25 June 1958, M. W. Sanderson (36–CNCI); Trelawny Parish, Duncans, 15 August 1966 and 23 August 1966, Howden and Becker (4–CNCI). **MONTserrat:** Old Town, Palm Court, 15–30 June 2002, M. A. Ivie and K. A. Marske, in pool and at light (1–WIBF); Woodlands Riverside House, 16°45.99', 69°13.34', 33 m, 05–07 Jan 2002, M. A. Ivie and K. Marske, Malaise trap (1–WIBF); Woodlands, Woodlands Ghaut, 43 m, 03 JAN 2002, M. A. Ivie, beating and under bark (1–WIBF). **NAVASSA ISLAND:** bluff of southwest rim, 18°23.75'N, 75°00.94'W, 65 m, 25–30 July 1998, W. E. Steiner, J. M. Swearingen et al. / flight intercept/yellow pans in Malaise trap, open forest (*Metopium*, *Coccoloba*, *Ficus*) at rim of upper terrace; limestone and red oolitic soil (1–USNM); forest west of lighthouse, 18°23.91'N, 75°00.81', 75 m, 30 July–4 Aug. 1998, W. E. Steiner, J. M. Swearingen et al. / flight-intercept/yellow pans in Malaise trap in moist depression of mixed interior forest (*Ficus*, *Sideroxylon*, *Metopium*, *Coccoloba*) (2–USNM); near lighthouse, 18°23.82'N, 75°00.74'W, 80 m, 24 July–4 Aug. 1998, W. E. Steiner, J. M. Swearingen et al. / taken in flight or in tent, open weedy shrub near mixed forest (*Ficus*, *Metopium*, *Thrinax*) on limestone and red oolitic soil (1–USNM). **NETHERLANDS ANTILLES:** **Curaçao,** Christoffel N. P., North Car Route, 12°21'2.23"N, 69°6'10.14"W, blacklight trap, 14.XI.2014, M. C. Thomas (1–FSCA); Piscadera Baai, 12°07'29.08"N, 68°58'03.97"W, 4 Dec. 2015, R. Turnbow (1–FSCA). **PUERTO RICO:** Guánica Forest, VII.25–26.1969, H. and A. Howden (4–CNCI); Guánica, 15.V.91, J. Torres, ex: light trap (1–CNCI); Guánica State Forest, VIII.9.1969, C. W. O’Brien and P. Kovarik (1–CNCI); nr. Punta Santiago, S of Fajardo, 25 SEPT 1987, M. A. Ivie, beating and on beach (1–WIBF). **SAINT LUCIA:** Escap Community, Micoud, 7.VII.2009, Fond Bay Beach / in small dead branch, D. E. Bright (3–CNCI); Praslin, 50 m, 25.VII.2007 / lowland, woodland ravine flight intercept trap, S. and J. Peck (1–SBPC). **SAINT VINCENT AND THE GRENADINES:** **Union Island,** Chatham Bay, Water Rock Reserve, S. Peck / N12°36', W61°26', 14–20.VIII.2009, uv light, tall forest (2–SBPC). **VIRGIN ISLANDS (BRITISH):** **Anguilla:** Sandy Ground to N. Shannon Hill on road to Salt Pond, 08 Nov 1999, 0–200', M. A. Ivie and J. B. Runyon (1–WIBF). **Guana Island,** 1–10.X.1999, B. and B. Valentine (3–WIBF); La Ping Trail, 28 Oct 1992, beating, L. L. and M. A. Ivie (1–WIBF). **Tortola,** Windy Hill, 300–500', 24–29 Dec 1993, thorn-scrub, T. K. Philips, Lindgren funnel trap (1–WIBF); SE CandW Station, 18°25.47'N, 64°38.86', 1375', Petrovic’s, beating, 21 Oct 2002, M. A. Ivie (1–WIBF); Balast Bay, 530', 06 Oct 1994, M. A. and L. L. Ivie, beating vegetation (1–WIBF). **VIRGIN ISLANDS (U.S.):** **Saint Croix,** Sprat Hall, 01 Feb 1982: A. Godwin / ex vane trap w/ETOH bait (1–WIBF); same locality, 30 Jun–14 Jul 1982, J. A. Yntema col. / ex vane trap w/ETOH bait (1–WIBF). **Saint John,** Est. Mary Point, Francis Bay Trail, 26 July 1994, M. S. Becker and S. A. Bucklin (6–WIBF); Est Lameshur Bay, on road, beating, 15 July 1994, M. S. Becker (1–WIBF). **Saint Thomas,** Brewers Bay, 06 Aug 1980 / M. A. Ivie (1–WIBF); Smith Bay, 04 Aug 1980 (1–CNCI); Est. Nazareth, 40 ft., 27 July–19 Oct 1994, M. A. and L. L. Ivie, flight intercept trap (7–WIBF).

**Comments.** Females of this species can be distinguished with difficulty by the prominent transverse carina on the frons, by the presence of two to four widely separated serrations on the anterior margin of the pronotum (variable) and by the elytral vestiture.

*Hypothenemus brunneus* was described by Hopkins (1915b) from Texas and was subsequently treated by Wood (1982) as a widespread species related to *H. javanus*. Females of the two species are very similar

but those considered *H. brunneus* were distinguished by their slightly smaller size and by the reticulate lateral areas of the pronotum. Wood (1982) comments that the two “species” were both introduced into North America from widely separated areas in Africa and appear as two species in North America because of extensive interbreeding resulting from parthenogenesis. This argument is improbable. The lectotype of *H. javanus* and the holotype of *H. brunneus* were directly compared and although very slight differences can be detected, the two taxa are here treated as the same species.

***Hypothenemus leptosquamus* Bright, sp. nov.**

Figure 134.

**Type Material.** **HOLOTYPE** (female) labeled: “CURAÇAO: Christoffel Park, Savonet, 12°21’01”N, 69°06’23”W, 14 Nov. 2014, R. Turnbow” / “HOLOTYPE *Hypothenemus leptosquamus* D. E. Bright 2016” (RHTC [FSCA]). **PARATYPES** (8): 2 labeled: “CURAÇAO: Santa Rose, 12°15’24”N, 69°02’38”W, 14 Nov. 2014, R. Turnbow” (RHTC, CNCI); 1 labeled: “CURAÇAO: 1.2 km. SE Lagun, 12°18’45”N, 69°08’32”W, 5 Nov. 2014, R. Turnbow” (RHTC); 1 labeled: “CURAÇAO: Playa Santa Cruz Rd., 12°18’19”N, 69°08’26”W, blacklight, 16 Nov. 2014, R. Turnbow” (RHTC); 1 labeled: “CURAÇAO: Christoffel Pk., The Woods, 12°21’02.13”N, 69°06’10.07”W, 9 Dec. 2015, R. T. Turnbow” (RHTC); 1 labeled: “CURAÇAO: Malpais Trail, 12°10’07.68”N, 69°00’23.11”W, 3 Dec. 2015, R. Turnbow (RHTC); 1 labeled: CURAÇAO: Playa Parasasa, 12°06’58.51”N, 68°57’50.11”W, 12 Dec. 2015, R. Tyenbow (RHTC); 1 labeled: CURAÇAO: Piscadera Baai, 12°07’20.21”N, 68°58’06.60”W, 6 Dec. 2015, R. Turnbow (CNCI).

**Description (Female).** Length 1.3–1.5 mm, 2.2 times longer than wide; dark to light brown. Frons evenly convex; surface shining, minutely reticulate, with several, very obscure, shining, scattered, obscure granules, with a short, smooth, longitudinal smooth space extending from epistoma to just below level of upper margin of eye. Pronotum 1.3 times wider than long, widest just behind middle; sides broadly arcuate; anterior margin broadly rounded, with two, basally contiguous serrations; anterior slope bearing nine to 12 large, erect asperities (excluding cluster on summit); summit distinct, with several, smaller, close asperities; posterior surface shining, with fine, scattered granules. Elytra 1.4 times longer than wide, widest near middle; sides weakly arcuate, apex broadly rounded; discal striae weakly impressed, punctures small, obsolete, weakly impressed, each with a minute seta; discal interstriae wider than striae, smooth, shining, each with a median row of small, erect scales, these as long as or shorter than discal width, 2.0 times longer than wide. Declivity convex; striae slightly more deeply impressed than on disc, punctures as on disc; interstriae smooth, shining, each bearing a median row of very small granules and dense, very broad scales, these shorter than interstitial width, separated in row by a distance less than scale length.

**Male.** Unknown.

**Distribution.** Known from Curaçao in the Netherlands Antilles.

**Etymology.** From *leptos*, Greek for small and *squama*, Latin for scale, referring to the very small, broad scales on the declivity.

**Comments.** Females of this species resemble those of *H. ponticus* but are smaller and bear much smaller and broader scales on the declivital interstriae.

***Hypothenemus liliputianus* Bright, sp. nov.**

Figure 107.

**Type Material.** **HOLOTYPE** (female) labeled: “GUADELOUPE, 1.VIII.1999, Bouillante, Cocagn, Leg. and col. D. ROGUET” / “HOLOTYPE *Hypothenemus liliputianus* D. E. Bright 2016” (CNCI).

**Description (Female).** Length 0.9 mm, 2.0 times longer than wide; black. Frons not visible. Pronotum 1.2 times wider than long, widest at base; sides broadly rounded; anterior margin narrowly rounded, bearing two moderately long, basally contiguous serrations slightly longer than asperities on anterior

slope, with a minute, virtually invisible serration on each side; summit distinctly elevated; anterior slope with numerous, small, scattered asperities; posterior half moderately shining, with scattered, very small granules and very short, semirecumbent, hairlike setae and slightly longer, narrowly flattened, erect scales, these scales rounded at tip, 2.0 times longer than width at tip. Elytra 1.3 times longer than wide; sides weakly arcuate on basal half, converging to broadly rounded apex; basal half of disc minutely rugulose, striae punctures not visible, vestiture scattered, not in rows and not readily visible; posterior half with very small, weakly impressed striae punctures in regular rows; interstriae narrow, each with a median row of erect, long, narrow scales, each scale 3.0–4.0 times longer than wide, 1.5 times longer than distance between interstriae. Declivity evenly convex, striae and interstriae as on posterior portion of disc except interstitial scales slightly longer, more regular in placement.

**Male.** Unknown.

**Distribution.** This species is known from Guadeloupe.

**Etymology.** Latinized form of liliputian, referring to the very small size of the female.

**Comments.** Only one specimen of this species has been seen. However, it is a distinctive species and should be readily recognized. Females of this minute species may be distinguished by the presence of two distinct, erect serrations on the anterior margin of the pronotum. by the distinctly micro-rugulose, impunctate basal half of the elytral disc and by the striate posterior portion of the disc and declivity, with faint, weakly impressed striae punctures in even rows and narrow interstriae, each of which bears a median row of longer, erect scales. The head of the holotype is withdrawn into the pronotum and the frons is not visible.

### ***Hypothenemus miles* (LeConte)**

*Cryphalus miles* LeConte 1878b: 433.

*Hypothenemus miles*: Wood and Bright 1992: 935; Bright and Skidmore 1997: 194; Bright and Skidmore 2002: 144.

This species is recorded from several of the Florida Keys (Wood 1982; Atkinson and Peck 1994), but was not recognized among the hundreds of *Hypothenemus* specimens seen during the preparation of this monograph. However, it is reasonable to assume that the species occurs in the West Indies. Females may be readily distinguished by the peculiar, single, horn-like serration on the anterior margin of the pronotum and by the very slender body. It is not included in Appendix 2 nor in any count of West Indian fauna.

### ***Hypothenemus woodi* Bright, Replacement Name**

*Trischidias minutissima* Wood 1954: 1069; Wood and Bright 1992: 947; Bright and Skidmore 1997: 197; Bright and Skidmore 2002: 146.

*Hypothenemus minutissimus* (Wood); New Combination proposed here (preoccupied by *Hypothenemus minutissimus* Schedl 1952).

This species is recorded from several of the Florida Keys (Wood 1982; Atkinson and Peck 1994), but was not recognized among the hundreds of *Hypothenemus* specimens seen during the preparation of this monograph. However, it is reasonable to assume that the species occurs in the West Indies. Females may be readily distinguished by the weakly to not impressed elytral striae, by the short interstitial scales and by the presence of two serrations on the anterior margin of the pronotum. It is not included in Appendix 2 nor in any count of West Indian fauna.

When moved into *Hypothenemus*, Wood's name became a homonym of *Hypothenemus minutissimus* Schedl 1952 (Argentina), which is a synonym of *Hypothenemus pubescens* Hopkins. *Hypothenemus woodi* Bright is proposed as the replacement name.

***Hypothenemus nanoparvus* Bright, sp. nov.**

Figure 108.

**Type Material.** **HOLOTYPE** (female) labeled: “**VIRGIN IS.: Saint Croix**, Est. Fountain, 350 ft., 06 JAN-23 FEB 1993, J. Keularts, flight intercept trap #15” / “**HOLOTYPE** *Hypothenemus nanoparvus* D. E. Bright 2016” (WIBF [CNCI]). **PARATYPES** (6): 1 labeled with same data as holotype (CNCI); 1 labeled with same data as holotype except date is “23 FEB-17 MAR 1993” (WIBF); 2 labeled “**WEST INDIES: SAINT LUCIA**, Praslin, 50 m, 25.VII.2007” / “lowland, woodland ravine FIT, S. and J. Peck” (SBPC, CNCI); 1 labeled “**WEST INDIES: GRENADA**, Saint Andrew, Mirabeau Agric. Lab., 8.I.1991, J. Telesford, Light trap” (SBPC) and 1 labeled “**VIRGIN Is.: St. John**, Est. Lameshur Bay, Reef Bay Trail, 6 ft., 27 JUL-14 OCT 1994, M. A. & L. L. Ivie colrs.” (WIBF).

**Description (Female).** Length 0.9–1.0 mm, 2.1 times longer than wide; dark brown. Frons weakly, transversely impressed above epistomal margin, evenly convex above, with a very faint, median fovea at upper eye level; surface moderately shining, densely minutely reticulate, with minute punctures and scattered, long setae along epistomal margin. Pronotum 1.1–1.2 times wider than long, widest at base; sides broadly arcuate; anterior margin narrowly rounded, with four serrations, median pair twice as long as lateral pair; anterior slope with 20 erect asperities; posterior half shining, smooth, with scattered, minute granules, with scattered, erect, narrowly flattened scales. Elytra 1.3 times longer than wide; discal striae weakly impressed, punctured in rows, punctures small, weakly impressed, each puncture with a distinct, short seta slightly longer than diameter of puncture; discal interstriae as wide as striae, each with a median row of erect, flattened scales, these slightly longer than interstitial width and 2.0–3.0 times longer than wide and slightly longer and wider than those on pronotal disc. Declivity convex; interstriae as on disc except scales very slightly longer and striae very slightly more deeply impressed.

**Male.** Unknown.

**Distribution.** This species is known from Grenada, Saint Lucia and Saint Croix in the U. S. Virgin Islands.

**Etymology.** A combination name of *nanus* and *parvus*, both Latin for little, referring to the small size of the adult.

**Comments.** Females of this species can be distinguished by the stout body, by the short interstitial scales, by the four serrations on the anterior margin of the pronotum and by the faint fovea on the frons.

***Hypothenemus nesiotus* Bright, sp. nov.**

Figure 109.

**Type Material.** **HOLOTYPE** (female) labeled: “**DOM. REP.: Pedernales**, Cabo Rojo, 10 m, 28.XI-2.XII.91, coast thorn scrub, swim pool surface, Masner and Peck, 91–362” / “**HOLOTYPE** *Hypothenemus nesiotus* D. E. Bright 2016” (CNCI). **PARATYPES** (8): 1 labeled same as holotype (SBPC); 2 labeled: “**BR. VIRGIN IS., Guana Is.**, Quail Dove Ghut, 20–25 Apr 1993, 400 ft., Lie Wei Peng colr, flight inter. #5” (WIBF, CNCI); 1 labeled: “**GADELOUPE: Gran-Terre**, Pointe-des-Chateau, Grande Saline, coast shrub, 16°15.270’N, 61°11.392’W, 0–3 m, 20 Aug 2005, M. A. Ivie” (WIBF); 1 labeled: “**VIRGIN IS.: Saint Thomas**, Est. Botany Bay, site #12, 400 ft., 08 July 1994, beating, M. A. Ivie colr” (WIBF); 1 labeled: “**BRITISH VIRGIN IS.: Guana Is.**, 17–X-1993” / “collected by C. Bartlett and J. Cryan” (WIBF); 1 labeled: “**VIRGIN IS.: St. Thomas**, Est. Nazerath, 40 ft., 27 JULY-19 OCT 1994, M. A. & L. L. Ivie, flight intr. trap #9” (WIBF); 1 labeled: “**PUERTO RICO**, Caroline, 1.X.2009” / “ex: trap on *Citrus aurantifolia*” (CNCI).

One damaged specimen, not designated as a paratype, is labeled: “**W. I.: MARTINIQUE**, 4 km SW Le Marin, Morne Aca, 260 m, N14°27.8, W60°53.9” / “humid forest hilltop clearing FIT, 13–28.VI.2012, S. Peck” (SBPC).

**Description (Female).** Length 1.0–1.1 mm, 2.4 times longer than wide; light reddish-brown. Frons evenly convex from epistoma to vertex; surface brightly shining, minutely rugose-reticulate. Pronotum 1.2 times wider than long, widest at middle; sides moderately arcuate; anterior margin broadly rounded, bearing four erect, widely separated serrations, these separated by a distance equal to 2.0–3.0 times greater than basal width of a serration; anterior slope with 18 asperities; summit not discernibly elevated; posterior surface moderately shining, weakly rugulose, punctures obscure and very weakly impressed, vestiture consisting of intermixed very small scales and minute setae. Elytra 1.6 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae not impressed, punctured in even rows, punctures obscurely impressed, each with a minute seta; discal interstriae one-half as wide as striae, each with a median row of small scales, these as long as interstitial width and 2.0 times longer than wide, tips truncate; entire elytral surface minutely reticulate, moderately shining. Declivity evenly convex; striae and interstriae as on disc except interstitial scales slightly longer.

**Male.** Unknown.

**Distribution.** This species is known from the Dominican Republic, Guadeloupe, Jamaica, Martinique and the Virgin Islands.

**Etymology.** From *nesiotes*, Greek for insular, referring to the distribution of the species.

**Comments.** Females of this species may be distinguished by the presence of four, widely separated serrations on the anterior margin of the pronotum, by the evenly convex frons and by the small size. They resemble adults of *H. gossypii* but may be distinguished by their smaller size and the stouter interstitial scales. The vestiture of the elytra consists of even rows of stout, erect scales and minute striae setae; intermixed ground vestiture is not present.

***Hypothenemus obscurifrons* Bright, sp. nov.**

Figure 110.

**Type Material.** HOLOTYPE (female) labeled: “PUERTO RICO: Isabela Agric. Expt. Station, 7.IX.2011” / “ex: *Persea* sp., E. Abreu” / “HOLOTYPE *Hypothenemus obscurifrons* D. E. Bright 2016” (CNCI). PARATYPES (6): 2 labeled: “WEST INDIES: Puerto Rico, Isabela, 4.VI.2011, E. Abreu, collr., *Albizia* sp.” (CNCI); 1 labeled: “PUERTO RICO, Mayaguez, 20 Sept 2010, E. Abreu, collr.” (CNCI); 1 labeled: “LESSOR ANTILLES: Antigua, Christian Valley Agr. Station, 18–21.X.1991, uv light trap, FAO Insect Survey, R. E. Woodruff” (REWC); 1 labeled: “DOMINICAN REPUBLIC: Barahona Province, 4.5 km S Barahona, 5 km W. Hwy. 2, 17.V.1992, M. C. Thomas” (FSCA); 1 labeled: “WEST INDIES: Antigua, Christian Valley, 14–15.IX.1991, FAO Insect Survey, blacklight trap” (CNCI).

**Description (Female).** Length 1.6–1.7 mm, 2.5 times longer than wide; dark to light brown. Frons evenly convex, very weakly transversely impressed above epistoma; surface dull, very densely, minutely reticulate, with a very small, median, tubercle-like swelling, this swelling located at level of upper margin of eyes. Pronotum as long as wide, widest at middle; sides moderately arcuate; anterior margin broadly rounded, bearing six erect, widely separated serrations, these separated by a distance equal to or less than basal width of a serration; anterior slope with 20 moderately large asperities, surface between asperities minutely reticulate, dull; summit weakly elevated; posterior surface dull, minutely reticulate, weakly rugulose, punctures obscure and very weakly impressed, vestiture consisting of intermixed very small scales and minute setae. Elytra 1.9 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae weakly impressed, punctured in even rows, punctures distinctly, weakly impressed, each with a minute seta; discal interstriae 2.0–3.0 times wider than striae, surface shining, each interstriae with a median row of small scales, these one-half as long as interstitial width and 2.0 times longer than wide, tips truncate; entire elytral surface minutely reticulate, moderately shining. Declivity evenly convex; striae and interstriae as on disc except interstitial scales slightly longer.

**Male.** Unknown.

**Distribution.** This species is known from Antigua, Dominican Republic and Puerto Rico.

**Etymology.** From *obscurus*, Latin for indistinct, referring to the very dull, reticulate frons of the female.

**Comments.** Females of this species resemble those of *H. obscurus* but differ by the very dull, densely reticulate frons and by the other characters mentioned in the above key.

The holotype is slightly larger at 1.7 mm but may be slightly distorted. The paratypes are 1.6 mm in length with a very slight, longitudinal, smooth line on the frons extending from the epistoma to the median swelling.

***Hypothenemus obscurus* (Fabricius)**

Figures 111, 122, 444, 514.

*Hylesinus obscurus* Fabricius 1801: 395.

*Hypothenemus obscurus*: Wood and Bright 1992: 936; Bright and Skidmore 1997: 195; Bright and Skidmore 2002: 145; Bright and Torres 2006: 407; Wood 2007: 514.

*Stephanoderes seriatus* Eichhoff, 1872: 133.

*Hypothenemus seriatus*: Wood and Bright 1992: 940; Bright and Skidmore 1997: 196; Bright and Skidmore 2002: 145; Wood 2007: 515.

*Stephanoderes minutus* Hopkins 1915a: 26 (Cuba).

*Stephanoderes moschatae* Schaufuss 1905: 8 (Guadeloupe).

*Stephanoderes multidentatus* Hopkins 1915a: 28. (Tamaulipas, Mexico). **Probable synonym.**

*Hypothenemus multidentatus*: Wood and Bright 1992: 936.

*Stephanoderes buscki* Hopkins 1915a: 30 (Trinidad).

*Stephanoderes nitidipennis* Hopkins 1915a: 29 (Cuba).

*Stephanoderes nitidulus* Hopkins 1915a: 29 (Cuba).

*Stephanoderes subopacicollis* Hopkins 1915a: 30 (Cuba).

**Description (Female).** Length 1.3–1.8 mm, 2.3 times longer than wide; dark brown to black. Frons evenly convex, usually with a distinct, very narrow groove that extends from epistoma to upper level of eyes, or groove half as long, occasionally groove absent; surface moderately shining, rugose-reticulate, weakly punctured, very slightly flattened on lower half; vestiture consisting of scattered, fine, hairlike setae becoming more conspicuous along epistomal margin. Pronotum 1.1 times wider than long; sides arcuate; anterior margin broadly rounded, usually bearing four to six erect serrations, these approximately equal in size or median pair longer, separated from one another by a distance less than the basal width of one serration; anterior slope bearing numerous, suberect asperities; posterior area dull, minutely reticulate, granulate; vestiture consisting of flattened, scalelike setae intermixed with fine, hairlike setae on lateral and posterior portions, hairlike setae present on anterior slope. Elytra 1.5–1.6 times longer than wide; sides parallel on posterior three-fourths, broadly rounded behind; discal striae weakly impressed, with punctures of moderate size, deeply impressed, closely placed; discal interstriae convex, as wide or slightly narrower than the striae, surface dull to weakly shining, densely minutely reticulate; each interstriae with a row of erect, flattened scales, these 2.0 times longer than wide, spaced between rows by a distance 3.0 times longer than length of a scale. Declivity convex; striae slightly more impressed than on disc; interstriae weakly convex, with a median row of small granules; entire surface dull, densely minutely rugose; vestiture consisting of erect, flattened, scalelike interstitial bristles, each 2.0–3.0 times longer than wide, these intermixed with inconspicuous, hairlike, strial setae.

**Male.** Length 0.8–1.1 mm, 1.1 times longer than wide; dark brown; similar to female but with more obscure features. Frons convex, not impressed above epistoma, with a very fine, longitudinal carina (?) or smooth space.

**Distribution.** This species is widespread throughout the tropical and subtropical regions of the New World. It occurs throughout the West Indies.

**Specimens examined.** **ANTIGUA:** Christian Valley, blacklight trap, 3.XI.1991, FAO Insect Survey (1–CNC). **BAHAMAS:** **Andros Island**, Cargill Creek, 24 July 2008, R. Turnbow (1–FSCA); Uncle Charles Blue Hole, 7 June 2001, R. Turnbow (3–RHTC); **Berry Island**, Little Harbor Cay, May 1, 1953 (1–AMNH). **Great Inagua**, Matthew

Town, 9.VII.2007, M. C. Thomas, in pith of pods of *Moltinga oleifera* L. (19-FSCA); same locality, beating horseradish tree seedpods, 10.VII.2007, T. Smith (1-FSCA), same locality, 9.VII.2007, M. C. Thomas, in pith of pods of *Moltinga oleifera* (4-FSCA). **BARBADOS:** Jack-in-the-Box Gully, forest leaf litter, 1.VI.2006, 230 m., S. and J. Peck (1-SBPC). **South Bimini Island**, Dec. 4, 1952, A. M. Nadler (1-AMNH); Turners Hall Woods, 200 m, 24.V-6.VI.2006 (1) and 16-28.VIII.05 (1), forest Malaise, S. and J. Peck (2-SBPC). **CAYMAN ISLANDS:** **Cayman Brac**, The Creek, uv trap, 28.IX.1995, C. R. Dilberet (4-CNCI); .9 km E. Brac Parrot Reserve, blacklight trap, 3 July 2013, R. Turnbow (1-RHTC); **Little Cayman**, 3 km SE Spot Bay, 26 May 2009, R. Turnbow (1-RHTC). **CUBA:** Arroyo Naranjo, Province Habana, I. C. Scaramuzza, XI.26.35 / boring stems of *Vinco rosea* (1-CNCI); Santiago Province, Santiago, Jardin Botanico, 5-17.XII.5 m, disturbed forest flight intercept trap, S. Peck (2-SBPC, CNCI). **DOMINICA:** St Andrew Parish, Paqua Bay, 30 June 2004, R. Turnbow (1-RHTC); Springfield Estate, N15°20.796, W61°22.142, 375 m, forest edge Malaise trap, S. and J. Peck (5-SBPC); 5 km NE Roseau, Springfield Plantation, 6.22.2004, C. W. O'Brien / ex dying Bird of Paradise Heliconia (1-CNCI); La Plaine, IX.24.1964, T. J. Spilman / Bredin-Archbold-Smithsonian Survey (6-USNM); St John Parish, Cabrits National Park, 28 June 2004, R. Turnbow (1-RHTC); Fortune, 8.8.1964, T. J. Spilman (21-USNM); Anse Bouleau, X.6.1964: J. Spangler (8-USNM); Castle Comfort, Sept. 13, 1965, *Tamarindus* pods, D. M. Anderson (1-USNM); La Plaine, IX.24.1964, T. J. Spilman (6-USNM). **DOMINICAN REPUBLIC:** Independencia, ESE Jimani, La Florida, S. of Lago Limon, 01-16 Apr 1992, Lindgren funnel trap w/turpentine, M. A. Ivie (2-WIBF); Province La Vega, nr. Buena Vista, Hotel La Montana, 09-12 Apr 1992, flight inter. trap, M. A. Ivie (1-WIBF); Pr. Pedernales, 25 km N Cabo Rojo, 700 m, 12.VII.1996, M. C. Thomas (1-FSCA); San Cristobal Province, Borbon, Cuevas Pomier, 200 m, tropical deciduous forest flight intercept trap, 13-28.VII.95, S. and J. Peck (2-SBPC); Monte Cristi, 13.2 km N Villa Elisa, 31 May 1994, R. Turnbow (1-RHTC); Barahona, 4.5 km S Barahona, 9 July 1996, R. Turnbow (1-RHTC); Province Hato Mayor, Par. Nac. Los Haitites, W. of Sabana de la Mar, 01-16 Apr 1992, 10 m, M. A. Ivie, flight inter. trap (1-WIBF); Santo Domingo, 7.11.2011, ex tamarind, D. Perez (3-USNM); Springfield Estate, N15°20.796', W61°22.142', 375 m, 29.V-16.VI.2004, S. and J. Peck, forest edge Malaise trap (5-SBPC). **GRANADA:** Island record only (homotype) (1-USNM); St. Andrew, Mirabeau Agricultural Laboratory, 19.III.1990 (1) 8.V.1990 (1), A. Thomas, light trap (2-FSCA); St. Georgas, Min. Agricultural Botanic Garden, 6.II.1980, A. Thomas, light trap (1-CNCI); St. Andrew, Mirabeau Agricultural Laboratory, 11.IV.1990, J. Telesford, light trap (1-CNCI). **GUADELOUPE:** Basse-Terre: Rivière Sens, Sentier Houëlemont, N15°58.93, W6°42.62 / humid forest flight intercept trap, 19-31.V.2012, S. Peck (1-SBPC); Basse-Terre: Petit Binro, 02 JAN 2003, J. Touroult (1-WIBF). **HAITI:** Port-au-Prince, 25-26.V.1984, M. C. Thomas / on *Jatropha* sp. (1-RHTC). **JAMAICA:** Island record only (1-CMNH); Pt. Antonio, 2-7 Jul 1982, pool/pan traps, N. F. and J. S. Johnson (1-WIBF); Saint Andrew Parish, Irish Town, VIII.17.1966, Howden and Becker (1-CNCI); 1 mi. w Discovery Bay, VIII.6.1967 / L. and C. W. O'Brien (1-CNCI); Saint Catherine, Cayamas Estate, 17.XI.1968, S. A. Apeji, blacklight trap (1-RHTC); Kingston Parish, Palisadoes, 25 August 1966, Howden and Becker (1-CNCI); Manchester Parish, Mizpah, 16 August 1966 (2-CNCI); Oxford Cave, 15 May 1950 (1-INHS); Saint Andrew Parish, Constant Spring, April 1908, M. Cameron (2-NHML); Saint Catherine Parish, Bog Walk, 2 February 1937, Chapin and Blackwelder (1-USNM); Spanish Town, 2 February 1937, Chapin and Blackwelder (1-USNM); Saint Thomas Parish, Trinity Ville, 28 February 1937, Chapin and Blackwelder (1-USNM); Trelawny Parish, Barbecue Bottom, 10 August 1966, H. F. Howden (1-CNCI); Duncans, 10 August 1966, Howden and Becker (1-CNCI); Pimento Warehouse, X.12.2006, D. A. Geoghagen, ex nutmeg (12-CNCI). **MARTINIQUE:** 4 km SW Le Marin, Morne Aca, 260 m, / humid forest hilltop clearing flight intercept trap, 13-28.VI.2012, S. Peck (5-SBPC, CNCI); 5 km SE Le Marin, Forest Creve, Coeur, 35 m, / dry forest uv trap, 10-28.VII.2012, S. Peck (1-SBPC). **MONTSERRAT:** Cassava Ghaut, Beattie House, 21-30 June 2002, 632 ft., M. A. Ivie, uv light (2-WIBF); Centre Hills, Spring Ghaut, 750', NE of Fleming, 19 JUNE 2000, M. A. Ivie and K. A. Guerrero (1-WIBF). **NAVASSA ISLAND:** near lighthouse, 18°23.82'N, 75°00.74'W, 80 m, 24 July-4 Aug 1998, W. E. Steiner, J. M. Swearington et al. / flight intercept/yellow pans in Malaise trap, edge of open weedy scrub and mixed forest, (*Ficus*, *Metopium*, *Thrinax*) on limestone (1-USNM). **NETHERLANDS ANTILLES:** **Curaçao**, Santa Rosa, 12°15'24"N, 69°02'38"W, 14 Nov. 2014, R. Turnbow (2-RHTC, CNCI); Piscadera Baai, 12°07'29"N, 68°58'03"W, 14 Nov. 2014, R. Turnbow (1-RHTC). **Saba**, S. coast, Giles Quarter Trail at 34 m, 17.61501°N, 17.6150°W, xeric beating, 12 Mar 2008, D. Sikes (1-WIBF); Bud's Mountain Trail, 1514', 29.IV.2013 / Ex. *Cecropia* sp. petiole, D. E. Bright and B. A. Barr (1-CNCI). **PUERTO RICO:** Adjuntas, various dates in 2015, L. C. Burbano, ex: *Guarea* sp. (27-DBPR, 8-CNCI); Ciales, various dates in 2015, L. C. Burbano, ex: *Guarea* sp. (23-DBPR, 6-CNCI); Cayey, 13.VIII.2000, J. Torres / in dry flowers of *Musa paradisiaca* (3-CNC); Guánica, 8.VII.95, J. Torres / eating seeds of *Tamarindus indica* (13-CNC); Guaynabo, various dates, 1995 and 1996, ex: light trap (13-CNC); Guaynabo, various dates, 1995 and 1996 / ex: *Melicoccus bijugatus* seeds (3-CNC); San Lorenzo, 7.VIII.2000, J. Torres / in dry fruit of *Lagenaria siceraria* (6-CNC); Cambalache Forest Reserve, VIII.27.1961, Flint and Spangler / in *Hymenaea courbarii* pods (6-USNM, CNCI); Guánica, IV.1997, J. Torres, ex: light trap (6-CNCI); Guaynabo, various dates in 1995 to 2000, J. Torres, ex: light trap (28-CNCI), in seeds of *Melicoccus bijugatus* (19-CNCI); Isabela, 10 Aug 2009 and 2015, E. Abreu, collr., ex: *Clarellina* sp. (18-CNCI) and ex: "Flamboyain" (8-CNCI); Isabela Urb. Medina, 18°27'48.52"N, 87°03'05.45"W, III.19.2010, E. Abreu / ex seeds of "Pride of Barbados", *Caesalpinia pulcherrima* (125-CNCI); Isla Maguey, Parguera, XII.19.62, Paul and Phyllis Spangler (1-USNM); Rio Piedras, 11.III.95, J. Torres, in male flower of *Artocarpus heterophyllus* (1-CNCI); Camuy, IX.21.2013, ex.

*Cecropia* sp. petiole, J. Mercado (2–CNCI); Caribbean National Forest, El Verde Field Station, 27.V.1994, R. Turnbow (1–RHTC); Cayey, 13.VIII.2000, J. Torres / ex: dry flowers of *Musa paradisiace* (4–CNCI); Fajardo, XII.23.1998, J. Torres / ex: seedpods of *Delonix regia* (2–CNCI); Guaynabo, various dates in 2000, J. Torres / ex: dry flowers of *Musa sapientum* (5–CNCI), ex: branch of *Almendrus* sp. (1–CNCI); Isabela, Estación Experimental Agrícola, 22 julio 2010, E. Abreu, ex: *Cajanus cajan* (12–CNCI, UPRC); La Paraguera, July 30, 1969, H. and A. Howden (1–CNCI); Quebrado Espiritu de Santo, mercury vapor and uv, 26 May 1994, R. Turnbow (1–RHTC); San Lorenzo, 7.VIII.2000, J. Torres / ex: dry fruit *Lagenaria siceraria* (6–CNCI); Isla Maguey, Paraguera, XII.19.62, Paul and Phyllis Spangler (1–USNM). **SAINT LUCIA:** Barre de L’Isle Trail, 13°93’N, 60°96’W, 6.VII.2009 / in *Cecropia* sp. leaf petioles, D. E. Bright (1–CNCI), same locality and collector, 7.VII.2009 / in pith of very small twigs (1–CNCI); Escap Community, Micoud, trail to beach, 6.VII.2009 / in *Cecropia* sp. leaf petioles, D. E. Bright (20–CNCI), same locality, date and collector / in small dead branch (1–CNCI); Piton Flores, 13°96’N, 60°94’W, 532 m, 6.VII.2009 / in fresh broken branch, D. E. Bright (1–CNCI). **SAINT VINCENT AND THE GRENADINES: Union Island,** Chatham Bay, Water Rock Reserve, S. Peck / N12°36’, W6°26’, 14–28.VIII.2009, uv trap-tall forest (1–SBPC); **Saint Vincent,** Saint Patrick Parish, Belle Isle Hill n. slope, 9.3.1991, C. W. and L. B. O’Brien (1–CNCI); Emerald Valley Hotel, east of Layau, 27–29.VIII.2006, uv trap, S. and J. Peck (1–SBPC). **Mayreau Island,** Island record only, uv trap, S. Peck (1–SBPC). **Union Island,** Chatham Bay, Water Rock Reserve, S. Peck / traps in tall forest (1–SBPC). **TURKS AND CAICOS: Grand Turk,** Turks and Caicos Nat. Mus., 1.X-1.XII.1993, B. Riggs, blacklight trap (1–FSCA). **VIRGIN ISLANDS (BRITISH): Guana Island,** 22 Oct 1992, M. A. and L. L. Ivie, beating vegetation (6–WIBF); near hotel, 19 Oct. 1992, L. L. and M. A. Ivie (2–WIBF); Pinquin Gut, 0–50 ft., M. and L. Ivie (1–WIBF); The Flat, 10 July 1994, M. A. Ivie (1–WIBF). **Tortola:** 1375’, Petrovic’s, beating, 21 Oct 2002, M. A. Ivie (1–WIBF). **VIRGIN ISLANDS (U. S.): Buck Island,** Buck Island Reef National Monument, 08 Jan 1993, general coll., VIBFP colrs. (1–WIBF). **Saint Croix,** Estate Fountain, 340 ft., 18 June–19 July 1993, J. Keularts, flight intercept trap #15 (1–WIBF). **Saint John,** Estate Caneel Bay, Caneel Bay to Lind Pt., 0–75 m, 02 Jan 1993, Ivie, Miller and Sikes (2–WIBF); Est. Lameshur Bay, V. I. Ecol. Res. Sta., 14–21 July 1994, M. S. Becker, uv light (1–WIBF); Virgin Islands National Park, 15 July 1994, M. S. Becker, beating at night (1–WIBF); Lameshur Bay, Yawzi Point Trail, 18 July 1994, night, M. S. Becker, beating (1–WIBF); E. Saint Lameshur Bay, Lt. Europa to Europa Bay, 20 July 1994, M. S. Becker, beating (1–WIBF). **Saint Thomas,** Brewers Bay, 06 Aug 1980 / M. A. Ivie (2–WIBF); Lilliendahl, 10 Aug 1980 / M. A. Ivie (2–WIBF); Est. Nazareth, 40 ft., 01 Jan 1993–16 Jul 1994, VIBFP collrs., flight intercept trap #9 (1–WIBF).

**Records from literature. BAHAMAS: Andros Island,** Morgan’s Bluff (Turnbow and Thomas 2008). **BARBADOS:** Island record only, 1902, ex. Tamarind pods (Schedl 1949b) [as *Stephanoderes moshatae* (sic) Schaufuss]). **CUBA:** San Vicente: D Rio, July 14, 1940, J. C. Bradley (Schedl 1957 [as *Stephanoderes moschatae* Schaufuss]). **MONTSERRAT:** Island record only (Ivie et al. 2008a). **PUERTO RICO:** Pequelas, guava fruits and *Tamarindus indica* pods from San Juan and Ponce (Wolcott 1948).

**Comments.** Adults of this species may be distinguished from those of the other West Indian species of the genus by the presence of a fine, narrow, longitudinal groove or smooth line on the frons which may be absent or very vague, by the presence of four or six serrations on the anterior margin of the pronotum, by the weakly shining to dull, subgranulate surface of the posterior portion of the pronotum, by the variously rugose-reticulate elytral surface.

Early in this study I recognized two species (*H. obscurus* and *H. seriatus*) that were very slightly different in appearance. Recently, while examining a large series of these “species”, the supposed differences between them were seen as nothing more than normal variations. The specimens examined were all collected at the same time in Puerto Rico from the same host plant. Further examination of the literature showed that Wood (1954) placed *H. seriatus* in synonymy under *H. obscurus*. However, the synonymy was either overlooked in subsequent papers by Wood (1982, 2007; Wood and Bright 1992) or Wood changed his mind without any further discussion. I have not found any reference to the changed concept. I here recognize *H. seriatus* as a synonym of *H. obscurus*. This understanding unfortunately came recently in this study, after the photo plates had been prepared. Hence, declivital photos of *H. obscurus* occur in two places (Fig. 111, 122).

Most specimens of this species seen from the West Indies were dull and minutely reticulate and were light to dark brown over the entire body and appendages. Occasionally specimens were seen that were more shining and completely black with reddish legs and appeared to be a different species. With a total of 38 synonyms recorded for this species (Wood and Bright 1992), many from the West Indies and northern South America, the possibility exists that these black specimens are a different, previously described species currently placed in synonymy.

The identity of this species is based on three homotypes, one of which in the USNM, is labeled “ex nutmeg from Grenada, 1931, R. Botanic. Grdn. Kew” and was compared to the lectotype by Wood. Two

additional homotypes, compared by Wood are labeled “Cambalache For. Res., PR, VIII.22.61, Flint & Spangler”. All these specimens have been examined.

Vázquez et al. (2003), under the name *H. seriatus*, record *Coffea*, *Lochnera* and *Zea* as hosts in Cuba.

***Hypothenemus opacus* (Eichhoff)**

Figure 112.

*Stephanoderes opacus* Eichhoff 1872: 132.

*Hypothenemus opacus*: Wood and Bright 1992: 937; Bright and Skidmore 1997: 195; Wood 2007: 511.

*Hypothenemus dolosus* Wood 1974: 21; Wood and Bright 1992: 917; Wood 2007: 511. **New Synonymy.**

**Description (Female).** Length 1.9–2.0 mm, 2.2 times longer than wide; brown to black. Frons convex; surface dull, reticulate, punctures widely separated, shallow; vestiture consisting of short, sparse, hair-like setae, longer and more conspicuous along epistomal margin. Pronotum 1.2 times wider than long; sides strongly arcuate; anterior margin broadly rounded, bearing four to six erect asperities, median pair usually longer; anterior slope bearing almost 30 coarse, erect asperities, with numerous granules or asperities clustered on summit area; posterior area dull, minutely reticulate and distinctly granulate; vestiture consisting of fine, hairlike setae intermixed with narrow, flattened, scalelike setae, the hairlike setae absent or nearly so on lateral areas. Elytra 1.6 times longer than wide; sides parallel on anterior three-fourths, broadly rounded behind; discal striae slightly impressed, punctures obscure; discal interstriae convex, twice as wide as striae; surface dull, strongly reticulate along basal margins, along interstriae 1 and over declivity, smoother and more shining on basal and lateral portions of elytra; vestiture consisting of uniseriate rows of flattened, scalelike setae, these 2-ranked on some interstriae, scales on disc 2.0–3.0 times longer than wide, narrower on declivity and intermixed with short, inconspicuous, strial setae. Declivity convex; interstriae somewhat narrower than on disc; surface dull, distinctly, strongly granulate-reticulate blending into smoother area at upper and lateral portions; vestiture as on disc.

**Male.** Not present in material examined.

**Distribution.** This species occurs from southern Mexico to Colombia and Venezuela. In the West Indies, it is recorded from the Greater Antilles.

**Specimens examined.** **CUBA:** Pinar del Rio, Sierra del Rosario, ca 15 km S Cinco Pesos Rangel, 29 June 1990, 420 m, M. A. Ivie (2-WIBF). **DOMINICAN REPUBLIC:** Province Barahona, 3 mi NW El Arroyo, road to Filipinas, 2 July 1999, beating vegetation, M. A. Ivie (1-WIBF); Province Barahona, Larimer Mine, nr. Filipinas, 6–11.VII.1993, blacklight trap, R. E. Woodruff, 3300 ft. (1-REWC); Barahona, 4.5 km. S. Barahona, 9 July 1996, R. Turnbow (1-RHTC). **JAMAICA:** Saint Andrew Parish, Saint Peters, VII.9.1966 (2-CNCI). **PUERTO RICO:** Arecibo, Arecibo, Site 12, EDRR, 18.45271, -66.59809, 20.VI-3.VII.2013, C. Torres and H. Rivera (2-MSUC); Guaynabo, various dates from 1999 to 2000, J. Torres, ex: light trap (17-CNCI); Vega Baja Co., Vega Baja, USDA-APHIS-PPQ, W. Garcia, Lindgren funnel trap, VIII.04.2008 (4-USNM).

**Record from literature.** **MONTSERRAT:** Island record only (Ivie et al. 2008a).

**Comments.** Females of this species may be recognized by the large size, by the dull, densely minutely reticulate basal half of the elytra and by the presence of numerous, small asperities or granules on the pronotal summit. This species is listed as *H. bolivianus* (Eggers) in my Jamaica paper (1972).

In 1997, *H. dolosus* Wood was recorded from Jamaica by Bright and Skidmore and in 2009 it was recorded from Puerto Rico by Bright and Torres. During preparation of this review, an assessment of the identification of this species and *H. opacus* was conducted. Specimens compared to the type of *H. opacus* in the USNM were examined and compared to the type material of *H. dolosus* in the USNM. As a result of this review, I am not able to detect consistent differences between the two species. The differences reported by Wood are considered to be normal variation within the species and I therefore have placed *H. dolosus* in synonymy under *H. opacus*.

Wood (1982) mentions that, in *H. opacus*, each of the asperities on the pronotal summit has a large pit or puncture just behind the asperity and that this pit often contains boring dust and may resemble recumbent, white scales. My examination of Woods' specimens, in the USNM and numerous specimens from the West Indies showed that this character is very variable, is often impossible to see and most often

doesn't exist. In most specimens examined, the surface behind each summit asperity is either smooth or is weakly irregular. Rarely, specimens can be found in which the post-asperity surface may appear to have small, frass-filled punctures.

***Hypothenemus parasquamosus* Bright, sp. nov.**

Figure 113.

**Type Material. HOLOTYPE** (female) labeled: "WEST INDIES: **BARBADOS**: Apes Hill Gully, 200 m, N13°12.7' W59°35.9', 1.VI.06, forest litter sifting, S. & J. Peck" / "HOLOTYPE *Hypothenemus parasquamosus* D. E. Bright 2016" (SBPC [CNCI]).

**Description (Female).** Length 1.2 mm, 2.3–2.4 times longer than wide; light to dark reddish-brown to almost black. Frons convex, sometimes with a very weakly impressed, transverse impression above epistoma and with a very weakly elevated, median swelling on upper margin of impression; surface dull, densely minutely reticulate, with a few minute granules. Pronotum 1.2 times wider than long, widest at base; sides broadly arcuate on basal half: anterior margin broadly rounded, usually bearing six erect, basally contiguous serrations, occasionally four serrations are present; anterior slope bearing 25 small, erect asperities; posterior area moderately shining, densely, minutely reticulate, minutely granulate; vestiture consisting of erect, flattened scales and setae. Elytra 1.4–1.5 times longer than wide; sides parallel on posterior two-thirds, apex broadly rounded; discal striae distinctly impressed, punctures distinct, large, weakly impressed; discal interstriae as wide as striae, surface weakly shining to dull, minutely rugose-reticulate, each interstriae with a row of erect, flattened scales, these short, 2.0 times longer than wide, spaced between rows by a distance equal to, or slightly greater than, length of a scale. Declivity steeply convex, slightly flattened, entire surface dull to weakly shining, minutely rugulose-reticulate; striae deeply impressed, punctures distinct, impressed; each interstriae with a median row of small granules and close, erect scales, these slightly broader and longer than those on disc and more closely placed in the row, separated in row by a distance less than length of scale.

**Male.** Unknown.

**Distribution.** This species is known from the type locality in the Barbados.

**Etymology.** From *para*, Greek for near, referring to the close resemblance of the adult to that of *H. squamosus*.

**Comment:** Females of this species resemble those of *H. squamosus* but differ by the more sloping and convex declivity, by the slender, interstitial scales on disc which are 4.0 times longer than wide with those on the declivity very slightly longer and by the smaller size.

***Hypothenemus parvulusus* Bright, sp. nov.**

Figure 114.

**Type Material. HOLOTYPE** (female) labeled: "WEST INDIES: **SAINT LUCIA**, Escap Community, Micoud, trail to beach, 6.VII.2009" / "in *Cecropia* sp. petiole, D. E. Bright, collr." / "HOLOTYPE *Hypothenemus parvulusus* D. E. Bright 2016" (CNCI). **PARATYPES** (34): 12 labeled with same data as holotype (CNCI, WIBF); 16 labeled: "**NETHERLANDS ANTILLES: SABA**, Sandy Cruz T. H., nr Hell's Gate, 30.IV.2013" / "ex. dead branch, D. E. Bright and B. A. Barr, collrs." (CNCI, WIBF); 1 labeled: "**NETHERLANDS ANTILLES: SABA**, Windwardside, Crispeen Trail Trailhead, 26.IV.2013" / "D. E. Bright and B. A. Barr, collrs." (CNCI); 1 labeled: "**PUERTO RICO**: Salinas, Todo a Peso, PR #1, 17.V.2012" / "ex: branches of *Erythina* sp." (PRDA); 1 labeled: "**REDONDA**, West Indies, 16°56.36'N, 62°20.75'W, 06 AUG 2005, 500–900 ft., I. A. Foley, beating vegetation" (WIBF); 3 labeled "**PUERTO RICO**, Isabella: Est. Expt. Agric., 22 Julio 2010" / "ex. *Cajanus cajan* E. Abreu, collr." (UPRC, CNCI).

**Description (Female).** Length 1.0–1.1 mm, 2.2–2.4 times longer than wide. Frons very weakly, transversely impressed above epistomal margin, evenly convex above, with a very faint, longitudinal carina or



**Figures 106–114.** Declivities of *Hypothenemus* spp. **106)** *H. javanus*. **107)** *H. lilipitanus*. **108)** *H. nanoparvus*. **109)** *H. nesiotus*. **110)** *H. obscurifrons*. **111)** *H. obscurus*. **112)** *H. opacus*. **113)** *H. parasquamosus*. **114)** *H. parvulus*.

smooth line extending from epistomal margin to upper eye level; surface moderately shining, densely, minutely reticulate, with minute punctures and short, obscure setae along epistomal margin. Pronotum 1.15 times wider than long, widest at base; sides broadly arcuate; anterior margin broadly rounded, with six equal-sized serrations, these separated by basal width, median pair very slightly longer and closer than others or serrations more or less evenly spaced; anterior slope with 20 very small asperities, each with a long, erect seta at least 4.0 longer than asperity height; posterior half shining, smooth, with scattered, minute granules, with scattered, erect, narrowly flattened scales. Elytra 1.3 times longer than wide; discal striae not impressed, obscurely punctured in rows, punctures obscure, shallow, weakly impressed, each puncture with a distinct, short seta slightly longer than diameter of puncture; discal interstriae difficult to discern, narrower than striae, each with a median row of erect, flattened scales, these longer than interstitial width and 3.0–4.0 times longer than wide and slightly longer and wider

than those on pronotal disc. Declivity convex; interstriae as on disc except scales very slightly longer and striae very slightly more deeply impressed.

**Male.** A suspected male, not designated as an allotype, is similar to female except length is 0.68 mm, 2.2 times longer than wide.

**Distribution.** This species is known from Puerto Rico, Saba in the Netherlands Antilles, Redonda in Saint Kitts-Nevis and Saint Lucia.

**Etymology.** From *parvus*, Latin for little, referring to the small size of the adult.

**Comments.** Females of this species may be distinguished by the presence of six nearly equal length serrations on the anterior margin of the pronotum, by the presence of a faint, longitudinal carina or smooth line on the frons and by the slender, small size of the body.

Specimens were collected from *Cecropia* leaf petioles on Saint Lucia, from a small dead branch on Saba and from branches of *Erythina* sp. and *Cajanus cajan* on Puerto Rico.

***Hypothenemus paulus* Bright, sp. nov.**

Figure 115.

**Type Material.** HOLOTYPE (female) labeled: “W. I.: MARTINIQUE, 5 km SE Le Marin, Forest Creve, Coeur, 35 m, N14°27.05, W60°50.91” / “Dry forest uv trap, 10–28.VII.2012, S. Peck, collr.” / “HOLOTYPE *Hypothenemus paulus* D. E. Bright 2016” (SBPC [CNCI]).

**Description (Female).** Length 0.9 mm, 2.0 times longer than wide; dark brown. Frons evenly convex; surface moderately shining, densely, minutely reticulate, usually with extremely fine punctures and scattered, short setae. Pronotum 1.2 times wider than long, widest at base; sides broadly arcuate; anterior margin narrowly rounded, with four contiguous serrations, median pair twice as long as lateral pair; anterior slope with 18 large, erect asperities; posterior half weakly shining, minutely reticulate, sparsely granulate and with abundant, short, erect, broadly flattened scales and short, hairlike setae. Elytra 1.3 times longer than wide; discal striae not impressed, punctured in rows, punctures very small, weakly impressed, each with a minute seta; discal interstriae twice as wide as striae, each with a median row of erect, small, broad scales, these shorter than interstitial width and 2.0 times longer than wide, very similar to scales on pronotal disc. Declivity convex; striae very slightly impressed; interstitial scales slightly longer and narrower than those on disc, scales 3.0–4.0 longer than wide.

**Male.** Unknown.

**Distribution.** This species is known from Martinique.

**Etymology.** From *paulus*, Latin for little, referring to the small size of the adult.

**Comments.** Females of this species may be recognized by the very small size, by the presence of four basally contiguous serrations on the narrowly rounded anterior margin of the pronotum and by the small scales in the discal interstriae that are slightly longer on the declivity.

***Hypothenemus perexiguus* Bright, sp. nov.**

Figure 116.

**Type Material.** HOLOTYPE (female) labeled: “BAHAMAS: Great Inagua, Mathew Town, beating horseradish tree seedheads, 10.VII.2007, T. Smith” / “HOLOTYPE *Hypothenemus perexiguus* D. E. Bright 2016” (FSCA). PARATYPES (23): 5 labeled with same data as holotype (FSCA, CNCI); 1 labeled: “BAHAMAS: Great Inagua, Northwest Point, 9 July 2007, R. Turnbow” (RHTC); 1 labeled: “BAHAMAS: Andros Island, Uncle Charlie’s Blue Hole, 7 June 2001, R. Turnbow” (RHTC); 2 labeled: “VIRGIN IS.: Saint Croix, Estate Stony Ground, Sandy Pt., 06 JAN 1993, R. S. Miller and D. Sikes” (WIBF, CNCI); 1 labeled: “VIRGIN IS.: St. Croix, Est. North Hall, Creque Gut, 100 ft., 06JAN-23 FEB 1993,

J. Keularts, flt. inter. trap #8" (WIBF); 1 labeled: "VIRGIN IS.: Saint John, Est. Lameshur Bay, Reef Bay Trail, 6 ft., 27 JUL-14 OCT 1994, M. A. and L. L. Ivie colrs." (WIBF); 1 labeled: "WEST INDIES: MARTINIQUE, 1 km E Diamant, N14°28.7', W61°0.6', 7-23.VII.2010" / "10 m, thorn shrub FIT, S. and J. Peck" (SBPC); 3 labeled: "W. I.: MARTINIQUE, 4 km SW Le Marin, Morne Aca, 200 m, N14°27.8', W61°53.9'" / "Humid forest hilltop clearing FIT, S. Peck, 13-28.VI.2012" (2-SBPC, 1-CNCI); 1 labeled "NAVASSA ISLAND: bluff of southwest rim, 65 m, 25-30 July 1998, collrs. W. E. Steiner, J. M. Swearington et al." / "flight-intercept/yellow pans in Malaise trap, open mixed forest (*Metopium*, *Coccoloba*, *Ficus*) at rim of upper terrace; limestone and red colitic soil" (USNM); 3 labeled "NAVASSA ISLAND, forest west of lighthouse, 75 m, 18°23.91'N, 75°00.81'W, 30 July-4 Aug. 1998, Collrs. W. E. Steiner, J. M. Swearington et al." / "Flight-intercept/yellow pan in Malaise Trap, in moist depression of mixed interior forest (*Ficus*, *Sideroxylon*, *Metopium*, *Coccoloba*)" (2-USNM, 1-CNCI); 1 labeled: "BRITISH VIRGIN IS., Guana I., 20/27.X.1999, W. Lu, Malaise trap" (WIBF); 1 labeled: "PUERTO RICO, Vega Baja, 16.VII.2012" (CNCI); 1 labeled: "W. I.: GUADELOUPE, Bas. Ter.: Pigeon Trace Poirier, N16°08.83', W61°45.22'" / "Humid forest FIT, 350 m, 14-31.V.2012, S. Peck" (SBPC); 1 labeled: "CUBA: Santiago de Cuba, Parque Nacional Gran Piedra, km 7 on road, 550 m, 20.011-7, 1.x.2014, R. Anderson, F. Cala-Riquelme, A. Deler Hernandez, 2014-025, mixed hardwood litter" / "World Weevil Database WWD 0106284" (CMNO).

Two specimens labeled: Isabela, PUERTO RICO, 14 julio 2010, ex "Flamboyán", collected by J. Rodríguez (UPRC) were seen but are excluded from the type series.

**Description (Female).** Length 0.9–1.0 mm, 2.0–2.1 times longer than wide; dark reddish-brown to black. Frons weakly convex, with a very obscure, median, smooth, longitudinal line; surface moderately shining, very finely, minutely reticulate. Pronotum 1.15 times wider than long, widest at base; sides broadly rounded; anterior margin broadly rounded, bearing six, widely separated serrations, median pair sometimes basally contiguous, serrations usually separated by a distance equal to or slightly greater than basal width; summit distinctly elevated; anterior slope with 25 small asperities, these as long as marginal serrations; posterior half moderately shining, minutely reticulate, with scattered, very short, hairlike setae and numerous, erect, broad scales, these widest at tip. Elytra 1.5 times longer than wide; sides weakly arcuate on basal two-thirds, converging to broadly rounded apex; discal striae very obscurely to not impressed, punctured in regular rows, punctures small, obscurely impressed, separated by a distance equal to diameter of puncture, each with a minute seta; discal interstriae narrower than striae, moderately dull, minutely reticulate, each with a median row of erect, broad scales, each scale 1.5–2.0 times longer than wide, shorter than interstitial width and half as long as distance between rows, apex truncate. Declivity evenly convex; striae and interstriae as on disc except interstitial scales very slightly narrower, slightly longer and more closely placed.

**Male.** Unknown.

**Distribution.** This species is known from the Bahamas, Cuba, Guadeloupe, Martinique, Navassa Island, Puerto Rico and the U. S. and British Virgin Islands.

**Etymology.** From *perexiguus*, Latin for very small, referring to the size of the adults.

**Comments.** Adults of this species may be readily recognized by the presence of six widely separated serrations on the anterior margin of the pronotum, by the short, broad elytral scales, by the presence of an obscure longitudinal smooth line on the female frons and by the very small size of the adults.

### *Hypothenemus pilosus* Hopkins

*Hypothenemus pilosus* Hopkins 1915a: 20; Wood and Bright 1992: 938.

**Description (Female).** Length 1.1 mm, 2.5 times longer than wide; light reddish-brown. Frons evenly convex, without a median groove or median callus; surface shining, with scattered, shallow punctures. Pronotum very slightly wider than long, less than 1.1 times wider than long, widest at base; sides nearly parallel on basal half; anterior margin broadly rounded, bearing six erect, slightly separated serrations,

these equal in size; anterior slope bearing 20 small, erect asperities; posterior area brightly shining, subreticulate, minutely punctate; vestiture consisting of erect, hairlike setae. Elytra 1.6 times longer than wide; sides parallel on posterior two-thirds, apex broadly rounded; discal striae very weakly impressed, punctures small, weakly impressed; discal interstriae weakly convex, as wide as striae, surface shining, reticulate, punctures obsolete, each interstriae with a row of erect, hairlike setae, these as long or slightly longer than interstriae width, spaced between rows by a distance as long as length of seta. Declivity convex; surface as on disc.

**Male.** Unknown.

**Distribution.** This species is known from Cuba.

**Specimen examined. CUBA:** Cayamas, 3.3 / E. A. Schwarz (1-USNM).

**Comments.** The female of this species can be readily recognized by the presence of hairlike setae on the posterior half of the pronotum and the elytra and by the evenly convex frons. The female somewhat resembles that of *H. crinatus* but differs by the more slender elytral setae and by the lack of abundant setae in the declivital ground vestiture.

The above description was taken from the holotype in the USNM. No other specimens have been seen.

Vázquez et al. (2003) record *Cupressus* as a host in Cuba.

***Hypothenemus ponticus* Bright, sp. nov.**

Figure 135.

**Type Material. HOLOTYPE** (female) labeled: “CURAÇAO: Carmabi, 12°07'20”N, 68°58'02”W, black-light, 15 Nov. 2014, R. Turnbow” / “HOLOTYPE *Hypothenemus ponticus* D. E. Bright 2016” (RHTC [FSCA]). **PARATYPES** (3): 1 labeled: “CURAÇAO: Christoffel Park, Orchid Trail Rd., 12°20'06”N, 69°06'59”W, 10 Nov. 2014, R. Turnbow” (CNCI); 1 labeled: “CURAÇAO: Christoffel Pk., The Woods, 12°21'02.13”N, 69°06'10.07”W, 9 Dec. 2015, R. T. Turnbow” (RHTC); 1 labeled “CURAÇAO: Malpais, Biná Trail, near entrance, 3–XII-2015, at night, M. C. Thomas (FSCA).

**Description (Female).** Length 1.6–1.7 mm, 2.1 times longer than wide; black with reddish tinges on pronotal summit area. Frons evenly convex; surface moderately shining, densely minutely reticulate, with several, very obscure, shining longitudinal ridges and a few, scattered, obscure granules, without a smooth, longitudinal smooth space or a small, median fovea. Pronotum 1.3 times wider than long, widest near middle; sides broadly arcuate; anterior margin broadly rounded, with two, basally contiguous serrations; anterior slope bearing 12 large, erect asperities (excluding cluster on summit); summit distinct, with several, smaller, close asperities; posterior surface shining, densely granulate. Elytra 1.2–1.3 times longer than wide, widest near middle; sides weakly arcuate, apex broadly rounded; discal striae weakly to moderately impressed, punctures small, obsolete, each with a minute seta; discal interstriae wider than striae, smooth, shining, each with a median row of small, erect scales, these shorter than interstitial width, 3.0–4.0 times longer than wide. Declivity convex; striae slightly more deeply impressed, narrower than discal width; interstriae smooth, shining, each bearing a median row of very small granules and dense, broad scales, these separated in row by a distance less than scale length and longer than those on disc.

**Male.** Unknown.

**Distribution.** Known from Curaçao in the Netherlands Antilles.

**Etymology.** From *pontus*, Latin for of the sea, referring to the island habitat of the species.

**Comments.** Females of this very distinctive species were collected at similar localities as those of *H. granulatus* and resemble the females of that species. They may be easily distinguished from specimens of *H. granulatus* by the smooth and shining appearance of both pronotum and elytra, by the row of much smaller granules in each declivital interstriae and by the convex frons which lacks a small, median fovea

and lacks a longitudinal, smooth line. From other species of *Hypothenemus*, the female is distinguished by the presence of two, basally contiguous serrations on the anterior margin of the pronotum and by the presence of 12 large, erect asperities on the anterior slope of the pronotum.

***Hypothenemus pubescens* Hopkins**

Figure 117.

*Hypothenemus pubescens* Hopkins 1915a: 19; Wood and Bright 1992: 929; Bright and Skidmore 1997: 195; Bright and Skidmore 2002: 145; Bright and Torres 2006: 408; Wood 2007: 512.

*Stephanoderes opacifrons* Hopkins 1915a: 25 (Puerto Rico).

**Description (Female).** Length 1.0–1.1 mm, 2.3 times longer than wide; dark brown. Frons evenly convex; surface moderately shining, rugose-reticulate, weakly punctured. Pronotum 1.1 times wider than long, widest at base; sides broadly arcuate on basal half; anterior margin broadly rounded, bearing six (variable) erect, slightly separated serrations, median pair usually slightly larger or sometimes missing; anterior slope bearing 20 small, erect asperities; posterior area moderately shining, subreticulate, minutely granulate behind summit; vestiture consisting of erect, flattened scales and setae. Elytra 1.3–1.4 times longer than wide; sides parallel on posterior two-thirds, apex broadly rounded; discal striae very weakly to not impressed, punctures small, weakly impressed; discal interstriae 1.5 times wider than striae, surface shining, reticulate, punctures obsolete, each interstriae with a row of erect, flattened scales, these 2.0 times longer than wide, spaced between rows by a distance 3.0 times longer than length of a scale. Declivity convex; surface as on disc except scales slightly more slender, 2.0 times longer than wide.

**Male.** Similar to female except smaller, 1.0–1.1 mm long.

**Distribution.** This species occurs from southern Florida to Texas, south throughout Mexico to Yucatan, also known from Brazil, Argentina and the Hawaiian Islands. It probably occurs throughout the West Indies.

**Specimens examined.** **CAYMAN ISLANDS:** **Grand Cayman,** Mastic Trail S, flight intercept trap, 20–29 May 2009, R. Turnbow (2–RHTC); .7 mi. N Grand Bluff, 20 May 2009, R. Turnbow (1–RHTC). **CUBA:** Camaguey, Sierra de Cubitas, Res. Ecol. Limones-Tuabaquey, 21.57581–77.75454, 63 m, 16.V.2013, R. Anderson, karst forest litter, 2013–015 (1–CMNO); Santiago Province, Santiago, Jardin Botanico, 5–17.XII.95, scrub forest flight intercept trap, S. Peck (1–SBPC). **DESECHEO ISLAND:** Island record only, Feb. 18–20 '14 (1–AMNH). **DOMINICA:** Canefield Est., Sept. 4, 1965, D. L. Jackson (1–USNM). **DOMINICAN REPUBLIC:** Pedernales, 4 km W Oviedo, 10 m, arid thorn forest, 28.XI-4.XII.91, intercept traps, Masner and Peck (1–CMNO). **GUADELOUPE:** Gran Terre, Anse de Tarare, 16°15.242'N, 61°11.901'W, 0–20 m, 20 Aug 2005, M. A. Ivie, coastal scrub (4–WIBF). **MARTINIQUE:** 5 km SE Le Marin, Forest Creve, Coeur, N14°27.05', W60°50.91', 35 m, / dry forest uv trap, 10–28.VII.2012, S. Peck (1–SBPC). **MONTSERRAT:** Cassava Ghaut, Beattie House, 16°45.91'N, 62°212.95'W, 1–30 June 2002, 632 ft., M. A. Ivie, uv light (1–WIBF). **NETHERLANDS ANTILLES:** **Saba,** 0–530 m, Kelby Rdg / Spring Bay Trail, 17.63737°N, 63.22126°W, 20 May 2008, beating shrubs and Croton (1–WIBF). **PUERTO RICO:** Cubuy Pine Forest, Canóvanas, multi-funnel Ips trap, VIII.22.2012 (1–PRDA); Guaynabo, III.2000, J. Torres, ex light trap (1–CNCI). **SAINT LUCIA:** Mon Repos, 6.5 km W Fox Grove Inn, 10–28.VI.2007, submontane forest flight intercept trap, 300 m, S. and J. Peck (1–SBPC); Praslin, 50 m, 25.VII.2007 / lowland, woodland ravine flight intercept trap, S. and J. Peck (1–SBPC). **SAINT VINCENT AND THE GRENADINES:** **Saint Vincent,** Charlotta P, Biabou, coastal cliff, 8.28.1991, C. W. and L. B. O'Brien (1–CNCI); Charlotte P, 1 mi. N Argria Beach, 8.28.1991, C. W. and L. B. O'Brien (1–CNCI). **TURKS AND CAICOS:** Provençiales, Grace Bay, 18–29.X.1993, R. M. and H. V. Baranowski, blacklight trap (10–FSCA). **VIRGIN ISLANDS (BRITISH):** **Anguilla:** Sandy Ground to N Shannon Hill and road to Salt Pond, 08 Nov 1999, 0–200 m, M. A. Ivie and J. B. Runyon (2–WIBF). **Guana Island,** La Ping Trail, 28 Oct 1992, beating, L. L. and M. A. Ivie (9–WIBF); Hotel to Sugarloaf, 400–800 ft., 24 Oct 1992, beating, M. A. and L. L. Ivie (1–WIBF). **Jost Van Dyke,** East End, 21–26 Nov 1994, sweeping vegetation, J. B. Johnson (2–WIBF); **Tortola,** Mt. Sage National Park, S side Mt. Sage, 1520 ft., 14 Dec-08 Jan 1993, M. A. Ivie, flight intercept trap #4 (2–WIBF). **VIRGIN ISLANDS (U. S.):** **Saint Croix,** Estate North Star, 23 Feb-23 Mar 1993, 60 ft., flight intercept trap, J. Keularts (1–WIBF).

**Record from literature.** **PUERTO RICO:** Aquadilla and Villalba, on *Brysonia spicata* (Wood 1982).

**Comments.** Females of this species may be recognized by their smaller size (1.0–1.1 mm) and by the short, broad scales on the elytral declivity which are separated in the row by a distance equal to or shorter than the scale length.

***Hypothenemus puertoricensis* (Bright and Torres), New Combination**

Figure 118.

*Trischidias puertoricensis* Bright and Torres 2006: 409.

**Description (Female).** Length 1.0 mm, 2.2 times longer than wide. Frons weakly, transversely impressed above epistoma, with a very small, shining elevation on upper margin of impression, evenly convex above impression; surface very finely, rugose-reticulate, except smooth and shining in median portion of transverse impression. Pronotum 1.2 times wider than long, widest at base; sides broadly rounded; anterior margin narrowly rounded, bearing four or six scattered serrations; anterior slope with ten scattered asperities; summit distinctly elevated, with numerous, small, scattered asperities; posterior half shining, with scattered, very small granules and very short, semirecumbent, hairlike setae and longer, erect scales, scales truncate at tip, 3.0–4.0 longer than width at tip. Elytra 1.2–1.3 times longer than wide; sides parallel on basal half, converging to broadly rounded apex; striae weakly impressed, punctured in regular rows, punctures large, deeply impressed, separated by much less than half of diameter of puncture, each with a minute seta; interstriae narrower than striae, each with a median row of erect, broad scales, each scale 2.0–3.0 times longer than wide, as long as width between interstriae, apex truncate. Declivity evenly convex; striae and interstriae as on disc except each interstriae bears a row of minute granules at base of each scale.

**Male.** Unknown.

**Distribution.** This species is known from Puerto Rico.

**Specimens examined.** PUERTO RICO: Guaynabo, VIII.23.1994, J. Torres / *Psidium guajava* seeds (1–CNCI); same locality, 21.V.1991, J. A. Torres / *Terminalia catappa* seeds (2–CNCI); Isabela, Estación Experimental Agrícola, 22 Julio 2010, E. Abreu, ex: *Cajanus cajan* (2–UPRC).

**Comments.** Females of this species may be recognized by their very small size, by the presence of four slightly separated serrations on the anterior margin of the pronotum, by the narrow, weakly impressed elytral interstriae, by the large strial punctures and by the erect, narrow elytral scales.

In the original description of this species, I mentioned that the holotype would be deposited in the USNM. However, the three Puerto Rican specimens listed above from Guaynabo and collected by J. A. Torres constitute the type series and are all deposited in the CNCI.

***Hypothenemus pygmaeomorphus* Bright, sp. nov.**

**Type Material.** HOLOTYPE (female) labeled: “MONTSERRAT: Woodlands, Cassava Ghaut, Beattie House, 30 MAY-06 JUNE 2002, uv light, M. A. Ivie” / “HOLOTYPE *Hypothenemus pygmaeomorphus* D. E. Bright 2016” (WIBF [CNCI]). PARATYPE (1) labeled: “MONTSERRAT: Hope Ghaut, 16°45.209’N, 62°12.728’W, 23 July 2005, 750 ft., V. G. Martinson” (CNCI).

**Description (Female).** Length 0.7 mm, 2.0 times longer than wide; dark brown. Frons evenly convex, with a barely discernable, longitudinal, smooth, narrow line extending from epistomal margin to upper eye level; surface moderately shining, densely, minutely reticulate, without punctures or setae. Pronotum 1.2 times wider than long, widest at base; sides broadly arcuate; anterior margin narrowly rounded, with two, basally contiguous serrations (paratype has an additional, very small serration adjacent to median pair); anterior slope with 15 erect asperities and long, narrowly flattened scales; posterior half shining, smooth, with scattered, minute granules, with scattered, erect, narrowly flattened scales. Elytra 1.3 times longer than wide; discal striae very weakly impressed, punctured in rows, punctures very large, deeply impressed, each puncture with an obscure, short seta slightly longer than diameter of puncture; discal interstriae very narrow, less than half as wide as striae, each with a median row of erect, flattened

scales, these shorter than interstitial width and as long as wide, much shorter and wider than those on pronotal disc. Declivity convex; interstriae as on disc except scales very slightly longer; striae very slightly more deeply impressed.

**Male.** Unknown.

**Distribution.** This species is known from Montserrat.

**Etymology.** From *pygmaeus*, Latin for little and *morphe*, Latin for shape or form, referring to the small size of the adult.

**Comments.** Females of this species can be distinguished by very large striae punctures, by the very narrow interstriae and by the very short, interstitial scales. The holotype has two serrations on the anterior margin of the pronotum, the paratype has an additional, very small serration on each side lateral to the main pair.

### ***Hypothenemus rotundicollis* (Eichhoff)**

Figures 119, 120.

*Stephanoderes rotundicollis* Eichhoff 1878b: 45.

*Hypothenemus rotundicollis*: Wood and Bright 1992: 939; Bright and Skidmore 2002: 145; Bright and Torres 2006: 408.

**Description (Female).** Length 1.4–1.8 mm, 2.5 times longer than wide; dark reddish-brown. Frons evenly convex, shining, weakly reticulate, with scattered, obscure punctures and minute granules. Pronotum 1.2 times wider than long; sides broadly arcuate; anterior margin broadly rounded, either unarmed or bearing up to four basally contiguous, large serrations; summit high; anterior slope steeply declivous, with eight–twelve large, coarse, strongly elevated asperities; posterior portion brightly shining, with numerous, fine punctures, with intermixed erect, fine setae and erect, narrow, almost hairlike scales. Elytra 1.6–1.7 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae very weakly impressed, with large, deeply impressed punctures, each striae with numerous very short setae, each slightly longer than diameter of puncture; discal interstriae as wide or very slightly wider than striae, moderately shining, weakly convex, with an even, median row of erect, flattened scales, these 3.0 times longer than wide and truncate at tip. Declivity steeply, evenly convex; surface as on disc except striae slightly more deeply impressed and punctures larger, recumbent ground setae slightly longer more abundant.

**Male.** Similar to female except smaller.

**Distribution.** This species occurs in the eastern United States from Kansas to New York, south to Texas and Florida into southern Mexico. It probably occurs throughout the West Indies.

**Specimens examined.** **BAHAMAS:** Andros Island, Maidenhair Coppice, 10.VI.2004, M. C. Thomas (1–FSCA); Great Inagua, South Bay road, 10.VII.2007, M. C. Thomas (1–FSCA). **CAYMAN ISLANDS:** Little Cayman, .3 km SE Spot Bay, 27 May 2009, R. Turnbow (1–RHTC). **DOMINICA:** Saint John Parish, Cabrits National Park, 28 June 2004, R. Turnbow (1–RHTC). **DOMINICAN REPUBLIC:** Barahona, Polo Rd., 560 m, 14 July 1996, R. Turnbow (1–RHTC); Independencia, ESE Jimani, La Floeida, S. of Lago Limon, 14 Apr 1992, beating, M. A. Ivie and D. S. Sikes (1–WIBF); Monte Cristi, 5 km N Villa Elisa, 3 June 1994 (1) and 26 May 1992 (1), R. Turnbow (2–RHTC); Pedernales, Cabo Rojo, 10 July 1996, R. Turnbow (1–RHTC); Santo Domingo Oeste, Palacios de Engombe, 18°27.038'N, 69°59.800'W, secondary vegetation, 21.VII.2008, D. Perez, S. Medrano (1–USNM). **GRENADA:** Lance aux Epines, Coral Cove, 10–28.VIII.2010, thorn shrub flight intercept trap, S. Peck (13–SBPC); Saint George Parish, Pt. Sallegs Airport, IX.5.1991, C. W. and L. B. O'Brien (1–CNCI). **GUADELOUPE:** Les Mangles, Ravine de Duval, aux battages, 17.VII.1999, D. and J-P. Roguet (1–CNCI); Morne de L'Eau, Gensolin, aux battages, 15.VIII.1999, D. Roguet (1–CNCI); Goyave, Route Forestiere de Sacelle, 5.VIII.1999, D. Roguet (1–CNCI); Saint-François, Pointe-des-Chateaux, aux battages, 24.VII.1999, D. Roguet (1–CNCI). **MARTINIQUE:** Le Robert Bond de Mer, 24.VII.1997, D. Roguet (1–CNCI). **MONTSERRAT:** Dump to Jack Boy Hill, 22 June 2003, M. A. Ivie and K. A. Marske (2–WIBF); Woodlands, Cassava Ghaut, 01–29 June 2003, K. A. Marske, flight intercept trap (2–WIBF). **NETHERLANDS ANTILLES:** Curaçao, Christoffel Park, Zorgvlied Ruins Tr., 12°21'06"N, 69°06'49"W, 10 Nov. 2014, R.

Turnbow (1-RHTC). **Saba**, Trail to Spring Bay-2 km in, el. 191 m, shrubs, beat / sweep/sift, 1130–1300, 10 Mar 2008, J. A. Slowik (1-WIBF), similar data, D. Sikes (2-WIBF); North Coast Trail, at 234m, dry forest ridge, beating, 13 Mar 2008, D. Sikes (1-WIBF); 0–530 m, Kelby Rdg / Spring Bay Trail, 20 May 2008, beating shrubs and Croton (1-WIBF). **PUERTO RICO**: Guánica, VI.1996, M. Canals, light trap (2-CNCI); Guánica Forest, VII.25–26.1969, H. and A. Howden (1-CNCI), VII.29.1969 (1-CNCI) and 15.IV.96, J. Torres (1-CNCI); Guaynabo, various dates in 1996, J. Torres, ex: light trap (4-CNCI); La Parguera, July 30, 1969, H. and A. Howden (1-CNCI); Vieques Island (see comments below). **VIRGIN ISLANDS (BRITISH)**: **Beef Island**, behind Trellis Bay, 21 Oct 2002, M. A. Ivie (1-WIBF). **Great Camanoe Island**, Cam Bay, 0–100 ft., 11 July 1994, M. A. Ivie, M. S. Becker, S. A. Bucklin (1-WIBF). **Guana Island**, 1–10.X.1999, B. and B. Valentine (6-CNCI); Quail Dove Ghut, 600 ft., 12 July-09 Oct 1994, flight intercept trap #13 and #5, M. A. and L. L. Ivie (2-WIBF); The Flat, 10 July 1994, M. A. Ivie (1-WIBF). **Virgin Gorda**, east end, Oli Nut Bay, 25.X.2000, B. Valentine (1-CNCI). **VIRGIN ISLANDS (U. S.)**: **Saint John**, Virgin Islands National Park, 15 July 1994, M. S. Becker, beating at night (2-WIBF); Lameshur Bay, V.I.E.R.S., on road, 15 July 1994, beating, M. S. Becker (1-WIBF). **Saint Thomas**, Est. Nazareth, 40 ft., 27 July-19 Oct 1994, M. A. and L. L. Ivie, flight intercept trap #9 (7-WIBF).

**Comments.** Females of this species may be recognized by the presence of two to four (occasionally none or one) large serrations on the anterior margin of the pronotum, by the presence of 10–12 large asperities on the anterior pronotal slope and by their large body size. Adults are very similar to those of *H. amplissimus* but may be distinguished by their smaller size and by the more evenly convex elytral declivity.

Torres-Santana (personal e-mail communication 2014) reported this species from Vieques Island east of Puerto Rico from *Eugenia ligustrina* and *E. foetida* (Myrtaceae), both plants are native to Puerto Rico and are common. Adults of *H. rotundicollis* were feeding on the shoots of the plants that showed mortality on the larger branches.

***Hypothenemus rubrithorax* Bright, sp. nov.**

Figure 121.

**Type Material.** **HOLOTYPE** (female) labeled: “**SABA: NETH. ANTL.**, 525 m, Ecolodge on Mt. Scenery, 17.62879°N, 63.23785°W, 01 APR-1 MAY 2008, D. Sikes, J. Slowik, FIT w/pitfall” / “**HOLOTYPE** *Hypothenemus rubrithorax* D. E. Bright 2016” (WIBF [CNCI]). **PARATYPE** (1) labeled: “**WEST INDIES: St. Vincent**, Emerald Valley Hotel, Buccament, 10–20.VI.2007” / “Flight interc. trap, 30 m, S. & J. Peck” (SBPC).

**Description (Female).** Length 1.2 mm, 2.7 times longer than wide; pronotum, legs and antennae red, elytra, head and ventral surfaces black. Frons evenly convex; surface dull, densely, minutely reticulate, with scattered, very fine granules, punctures absent, setae confined to epistomal margin. Pronotum as long as wide, widest at base; sides broadly arcuate; anterior margin narrowly rounded, with four, basally separated serrations, median pair very slightly longer than lateral pair; anterior slope with 25 very small, erect asperities; posterior half weakly shining, densely minutely reticulate, with obscure, short setae and scales. Elytra 1.7 times longer than wide; surface weakly shining, densely, minutely reticulate and micro-punctate, striae not readily discernable, punctures, if visible, extremely obscure, marked by very short setae; discal interstriae discernable by presence of rows of erect scales, these shorter than distance between rows and 3.0–4.0 times longer than wide; vestiture consisting of rows of extremely short setae and rows of erect scales, additional ground vestiture absent. Declivity convex; unmodified, surface as on disc.

**Male.** Unknown.

**Distribution.** This species is known from Saba in the Netherlands Antilles and from Saint Vincent.

**Etymology.** This species is named for the reddish pronotum.

**Comments.** The adults of this species may be recognized by the bicolored body, by the densely reticulate elytral surface in which the striae are discernable by rows of very fine setae and the interstriae are distinguished by rows of erect scales. No additional ground vestiture is present. Occasionally, adults of



**Figures 115–123.** Declivities of *Hypothenemus* spp. **115)** *H. paulus*. **116)** *H. perexiguus*. **117)** *H. pubescens*. **118)** *H. puertorichensis*. **119)** *H. rotundicollis*. **120)** *H. rotundicollis* (pronotum). **121)** *H. rubrithorax*. **122)** *H. obscurus*. **123)** *H. setiferous*.

*H. eruditus* may have a similar color pattern but may be distinguished by their smaller size and by the presence on dense ground vestiture on the postero-lateral portion of the elytra.

The holotype has the elytra slightly spread but the characters described above are readily observed.

***Hypothenemus setiferous* Bright, sp. nov.**

Figure 123.

**Type Material. HOLOTYPE** (female) labeled: “MONTSERRAT: Ridge above Hope Ghaut, 1051 ft., 16°45.169’N, 62°12.736’W, K. A. Maske and For. Staff, canopy fogging, dawn” / “HOLOTYPE

*Hypothenemus setiferous* D. E. Bright 2016" (WIBF [CNCI]). **PARATYPE** (1) labeled with same data as holotype (CNCI).

**Description (Female).** Length 0.9 mm, 2.3 times longer than wide; light brown. Frons evenly convex, with a very faint, narrow, median groove extending from epistomal margin to level of upper eye margin; surface dull, densely minutely reticulate, punctures and setae absent. Pronotum as long as wide, widest at base; sides broadly arcuate; anterior margin narrowly rounded, with four serrations, median pair twice as long as lateral pair; anterior slope with 25 erect asperities; posterior half weakly shining, densely, minutely reticulate, with obscure, short setae. Elytra 1.3–1.5 times longer than wide; discal striae weakly impressed, punctured in rows, punctures large, deeply impressed, glabrous; discal interstriae narrower than striae, each with a median row of erect, hairlike setae, these slightly longer than interstitial width, equal in length to setae on pronotal disc. Declivity convex; unmodified, surface as on disc.

**Male.** Unknown.

**Distribution.** This species is known from Montserrat.

**Etymology.** From *setifer*, Latin for bearing bristles, referring to the presence of setae in the elytral interstriae.

**Comments.** Females of this species may be recognized by the presence of very short setae, not scales, in the elytral interstriae and by the very fine, longitudinal groove on the frons.

#### ***Hypothenemus setosus* (Eichhoff)**

Figure 124.

*Hypoborus setosus* Eichhoff 1868a: 391.

*Hypothenemus setosus*: Wood and Bright 1992: 943; Bright and Skidmore 1997: 196; Bright and Skidmore 2002: 145; Bright and Torres 2006: 408; Wood 2007: 524.

**Description (Female).** Length 1.6–1.8 mm, 2.4–2.5 times longer than wide; dark brown. Frons strongly, transversely impressed from epistoma to above upper level of eyes, with a strong, transversely elevated, costate elevation on upper margin of impression; surface brightly shining, weakly punctured. Pronotum 1.1 times wider than long, widest at middle; sides broadly arcuate on basal half; anterior margin broadly rounded, bearing six or eight erect, basally contiguous serrations; anterior slope bearing 25 small, erect asperities; posterior area moderately shining, subreticulate, minutely granulate behind summit; vestiture consisting of erect, flattened scales and setae. Elytra 1.6 times longer than wide; sides parallel on posterior two-thirds, apex broadly rounded; discal striae very weakly to not impressed, punctures small, weakly impressed; discal interstriae 1.5 times wider than striae, surface shining, reticulate, punctures obsolete, each interstriae with a row of erect, flattened scales, these 5.0–6.0 times longer than wide, spaced between rows by a distance equal to length of a scale. Declivity convex, unmodified; surface as on disc except scales 6.0–8.0 times longer than wide.

**Male.** Similar to female except smaller, 1.0–1.1 mm long.

**Distribution.** This species occurs in southern Florida, south into northern South America. It also occurs in Africa and Taiwan. It probably occurs throughout the West Indies.

**Specimens examined.** **CUBA:** El Cano, Habano, Nov. 9–'31 / collected on cornstalk / Scaramuzza, L. C. (1–CNCI). **DOMINICA:** Hillsborough Est., 15.III. 65, W. W. Wirth / Bredin-Archbold Smithsonian Bio. Surv. Dominica (1–USNM). **DOMINICAN REPUBLIC:** Province Barahona, 7 km NE Enriquilla, 08 Sep 1988, beating vegetation, M. A. Ivie, T. K. Philips and K. A. Johnson (1–WIBF); Province Barahona, 1 km SW Los Patos, 24 July 1999, M. A. Ivie, beating coastal vegetation (1–WIBF); Province Hato Mayor, Par. Nac. Los Haitises, W. of Sabana de la Mar. Bosque Humido, 16 Apr-01 Jul 1992, M. A. Ivie, flight intercept trap (1–WIBF). **GRENADA:** Saint Andrew, Mirabeau Agriculture Laboratory, various dates 1990, various collectors (3–CNCI). **JAMAICA:** Saint Andrew Parish, Cordon Town, 4 February 1937, Chapin and Blackwelder (1–USNM); Saint Ann Parish, Ocho Rios, 2 February 1937, Chapin and Blackwelder (1–USNM); Saint Thomas Parish, Trinity Ville, 28 February 1937, Chapin and Blackwelder (1–USNM); Westmoreland Parish, Cornwall Mountain, 18.VII.66, H. F. Howden (1–CNCI). **PUERTO RICO:** Guaynabo,

VIII.23.1994, J. Torres, in *Melicoccus bijugatus* seeds (4–CNCI); Mayagüez, III.11.1959, A. M. Nadler (1–AMNH); Pueblo Viego / A. S. Mills, VIII.14.1930 (1–AMNH); Río Grande, 20.VIII.90, J. Torres, in *Artocarpus altilis* log (6–CNCI); Guaynabo, 23.VIII.95, ex: light trap (2–CNCI); San Lorenzo, 7.VIII.2000, J. Torres, in dry fruit of *Lagenaria siceraria* (1–CNCI). **SAINT VINCENT AND THE GRENADINES: Saint Vincent**, Kingstown, X.1967, N. L. H. Krauss (1–USNM). **VIRGIN ISLANDS (BRITISH): Tortola**, SE. CandW Station, 18°25.47'N, 64°38.86'W, 1375', Petrovic's, beating, 21 Oct 2002, M. A. Ivie (1–WIBF).

**Records from literature.** Guadeloupe, Haiti (Wood and Bright 1992:944).

**Comments.** This species is very similar to *H. javanus* (Eggers) and, in fact, the two may be synonymous. The only difference seems to be that in the adults of *H. setosus* the striae and interstriae punctures on the disc are impressed. No other differences are evident. It is very similar to *H. brunneus* (Hopkins) but adults may be distinguished by the characters mentioned in the key and description.

***Hypothenemus solivagus* Bright, sp. nov.**

Figure 125.

**Type Material. HOLOTYPE** (female) labeled: “WEST INDIES: **BARBADOS**: Jack-in-the-Box Gully, N13°11', W59°34.3', 5–23.VI.2007, FIT, 230 m, S. and J. Peck” / “HOLOTYPE *Hypothenemus solivagus* D. E. Bright 2016” (SBPC [CNCI]).

**Description (Female).** Length 0.9 mm, 2.5 times longer than wide; light brown. Frons convex, very weakly transversely impressed above epistoma, with a very indistinct, longitudinal line extending from epistoma to upper eye level; surface dull, minutely reticulate, with a few, fine setae. Pronotum very slightly wider than long, widest at base; sides broadly rounded; anterior margin narrowly rounded, with four serrations, median pair basally contiguous, distinctly longer; summit distinctly elevated; anterior slope with numerous, small, scattered asperities; posterior half smooth, dull, minutely reticulate, with scattered, very small granules and very short, semirecumbent, hairlike setae and very short, erect scales, scales rounded at tip, as long as wide. Elytra 1.5 times longer than wide; sides weakly arcuate on basal half, converging to broadly rounded apex; discal striae weakly impressed, punctured in regular rows, punctures small, shallowly impressed, separated by a distance equal to diameter of puncture, each with a minute seta; discal interstriae narrower than striae, each with a median row of erect, narrowly flattened scales, each scale 4.0 times longer than wide, 1.5 times longer than interstitial width, apex rounded. Declivity evenly convex, striae and interstriae as on disc except interstitial scales slightly longer.

**Male.** Unknown.

**Distribution.** This species is known from the Barbados.

**Etymology.** From *solivagus*, Latin for wandering alone or vague.

**Comments.** The adult of this species resembles the adult of *H. atomus* but differs by the longer interstitial scales, especially those on the declivity.

***Hypothenemus squamosus* (Hopkins)**

Figure 126.

*Stephanoderes squamosus* Hopkins 1915a: 26.

*Hypothenemus squamosus*: Wood and Bright 1992: 945; Bright and Skidmore 1997: 196; Bright and Skidmore 2002: 146; Bright and Torres 2006: 408.

**Description (Female).** Length 1.3–1.5 mm, 2.3–2.4 times longer than wide; light to dark reddish-brown to almost black. Frons convex, sometimes with a very weakly impressed, transverse impression above epistoma and with a very weakly elevated, median swelling on upper margin of impression; surface dull, densely, minutely reticulate, with a few minute granules. Pronotum 1.2 times wider than long, widest at base; sides broadly arcuate on basal half: anterior margin broadly rounded, usually bearing six erect,

basally contiguous serrations, occasionally four serrations are present; anterior slope bearing 25 small, erect asperities; posterior area moderately shining, densely, minutely reticulate, minutely granulate; vestiture consisting of erect, flattened scales and setae. Elytra 1.4–1.5 times longer than wide; sides parallel on posterior two-thirds, apex broadly rounded; discal striae distinctly impressed, punctures distinct, large, weakly impressed; discal interstriae as wide as striae, surface weakly shining to dull, minutely rugose-reticulate, each interstriae with a row of erect, flattened scales, these short, 2.0 times longer than wide, spaced between rows by a distance equal to, or slightly greater than, length of a scale. Declivity steeply convex, slightly flattened, entire surface dull to weakly shining, minutely rugulose-reticulate; striae deeply impressed, punctures distinct, impressed; each interstriae with a median row of small granules and close, erect scales, these slightly broader and longer than those on disc and more closely placed in the row, separated in row by a distance less than length of scale.

**Male.** Not seen in material examined, evidently similar to female except smaller, 1.0–1.1 mm long (Wood 1982).

**Distribution.** This species occurs in southern Florida and is widespread in Mexico. In the West Indies it is known from the Bahamas, Cuba and Puerto Rico.

**Specimens examined.** **BAHAMAS: South Bimini,** Island record only, Dec.4, 1952, A. M. Nadler (1–CNCI). **CUBA:** Cayamas, 25.1 / E. A. Schwarz (2–USNM, CNCI).

**Record from literature.** Puerto Rico (Bright and Torres 2006:408).

**Comments.** Females of this distinctive species may be recognized by the steep, almost flattened, elytral declivity, by the deeply impressed declivital striae, by the closely placed, broad, declivital scales and by the overall dull to weakly shining, minutely rugulose-reticulate declivital surface.

### ***Hypothenemus striatus* (Atkinson), New Combination**

Figure 127.

*Trischidias striata* Atkinson 1993a: 422; Bright and Skidmore 1997: 197; Bright and Skidmore 2002: 146.

**Description (Female).** Length 0.7–0.8 mm, 2.0 times longer than wide; dark reddish-brown. Frons evenly convex from epistomal margin to vertex, sometimes with a very fine, longitudinal carina extending from epistomal margin to upper eye level, this weakly visible in proper light and at 200× magnification; surface weakly shining, densely minutely reticulate, setae inconspicuous. Pronotum 1.3 times wider than long, widest at middle; sides broadly arcuate on basal half; anterior margin narrowly rounded, bearing four, basally contiguous serrations, median pair longer; anterior slope bearing 20 very small, inconspicuous, erect asperities; summit at middle, slightly elevated; posterior area moderately shining, reticulate, minutely granulate behind summit; vestiture consisting of erect, flattened scales and setae. Elytra 1.3 times longer than wide; sides weakly arcuate on posterior two-thirds, apex broadly rounded; discal striae weakly impressed, punctures large, deeply impressed; discal interstriae slightly elevated, narrower than striae, shining, smooth, punctures obsolete, each interstriae with a row of erect, narrowly flattened scales, these 4.0–5.0 times longer than wide, spaced between rows by a distance equal to length of a scale. Declivity evenly convex; each interstriae bearing a median row of coarse granules and scales, these slightly longer than those on disc.

**Male.** Unknown.

**Distribution.** This species is known from southern Florida, Mississippi and the Dominican Republic.

**Specimens examined.** **DOMINICAN REPUBLIC:** Province Pedernales, ca. 35 km N. Cabo Rojo, 1250 m, Las Abejas, 26 AUG-09 SEPT 1988, flight intercept trap, M. Ivie, Philips and Johnson (11–WIBF, CNCI).

**Comments.** Females may be readily distinguished by the strongly impressed elytral striae, by the long, slender scales on the elytral declivity and by the presence of four serrations on the anterior margin of the pronotum. The holotype and several paratypes were examined.

***Hypothenemus tectus* Bright, sp. nov.**

Figure 128.

**Type Material. HOLOTYPE** (female) labeled: “W. I.: MARTINIQUE: 4 km SW Le Marin, Morne Aca, 260 m, N14°27.8, 60°53.9” / “Humid forest hilltop clearing FIT, 13–28.VI.2012, S. Peck” / “HOLOTYPE *Hypothenemus tectus* D. E. Bright 2016” (SBPC [CNCI]).

**Description (Female).** Length 1.1 mm, 2.3 times longer than wide; pronotum, legs and antennae reddish, elytra and ventral segments black. Frons transversely impressed from epistoma to just below upper level of eyes, upper margin of impression with a short, sharply elevated, transverse, median elevation; surface shining, minutely rugose-reticulate. Pronotum as long as wide, widest at middle; sides moderately arcuate; anterior margin broadly rounded, bearing four small, basally contiguous serrations, these slightly smaller than asperities on anterior slope and median pair slightly larger; anterior slope with 22 small asperities; summit slightly elevated, with numerous small granules; posterior area brightly shining, with weakly impressed small punctures and fine granules. Elytra 1.5–1.6 times longer than wide; sides parallel on basal two-thirds, broadly rounded at apex; discal striae very weakly impressed, obscurely punctured, punctures faintly marked by a minute seta; discal interstriae narrower than striae, each with a median row of small, erect scales, these shorter than interstitial width; entire surface moderately shining and minutely reticulate. Declivity convex; striae slightly more deeply impressed than on disc, interstriae as on disc except scales broader and slightly longer.

**Male.** Unknown.

**Distribution.** This species is known from Martinique.

**Etymology.** From *tectus*, Latin for cover.

**Comments.** Adults of this species could be placed in the key with either the small species in couplet one or with the larger species in later couplets. The specimen available for examination measures very slightly more than 1.1 mm and, depending on the observer’s perception, could be measured at slightly less than 1.1 mm. If placed with the smaller species in couplet one, it would be the only species in which the adults have a transversely impressed frons with a distinct elevation on the upper margin of the impression. If placed with the larger species in couplet one, it would be the smallest species in the group. Because of the transverse impression on the frons, I have placed this species with the group containing the larger species.

Adults of this species may be most easily distinguished by the transverse impression on the frons, by the small size and by the reddish pronotum and black elytra. In addition, the vestiture consists of rows of minute striae setae and rows of short, erect interstitial scales. No other ground vestiture is present.

***Hypothenemus turnbowi* Bright, sp. nov.**

Figure 129.

**Type Material. HOLOTYPE** (female) labeled: “BAHAMAS: Andros, Uncle Charles Blue Hole, 7 June 2001, R. Turnbow” / “HOLOTYPE *Hypothenemus turnbowi* D. E. Bright 2016” (RHTC [FSCA]).

**Description (Female).** Length 1.1 mm, 2.2 times longer than wide; reddish-brown. Frons convex, very weakly transversely impressed, with an obscure, weakly elevated longitudinal carina or a smooth line extending from epistoma to middle of frons; surface minutely reticulate, with very obscure punctures. Pronotum 1.2 times wider than long, widest at base; sides strongly arcuate; anterior margin narrowly rounded, bearing four equal-sized, separated serrations; anterior slope steeply declivous, bearing 12, large, erect asperities; posterior half dull, minutely reticulate, with scattered, large granules and long scales, scales especially long on postero-lateral areas, scales at least 6.0 times longer than wide. Elytra 1.3 times longer than wide; discal striae not impressed, with obscure, weakly impressed punctures; discal interstriae wider than striae, each with a median row of long, narrowly flattened, erect scales, each scale

2.0–3.0 times longer than interstrial width and 6.0–8.0 times longer than wide. Declivity convex, unmodified, with scales slightly longer than those on disc.

**Male.** Unknown.

**Distribution.** This species is known from Andros Island in the Bahamas.

**Etymology.** This species is named for R. Turnbow, the collector of the holotype.

**Comments.** Females of this species may be recognized by the very long, narrow scales on the pronotum and elytral interstriae and by the obscure stria punctures. Specimens are very similar to those of *H. striatus* but are distinguished by the characters mentioned above.

***Hypothenemus ustulatus* Bright, sp. nov.**

Figure 130.

**Type Material.** **HOLOTYPE** (female) labeled: “WEST INDIES: **MARTINIQUE**, 1 km E Diamant, N14°28.7', W61°0.6', 7–23.VII.2010” / “10 m, thorn shrub FIT, S. and J. Peck” / “HOLOTYPE *Hypothenemus ustulatus* D. E. Bright 2016” (SBPC [CNCI]). **PARATYPES** (2): 1 labeled: “WEST INDIES: **GRENADE**, Lance aux Epines, Coral Cove, 10 m, N21°59.57', W61°45.22', 10–28.VIII.2010, thorn shrub, S. Peck” (CNCI); 1 labeled: “**BRITISH VIRGIN IS., Guana I.**, 1/10–x-1999, B. & B. Valentine” (WIBF).

**Description (Female).** Length 0.9–1.0 mm, 2.5 times longer than wide; light yellowish-brown. Frons evenly convex, with an exceedingly faint longitudinal carina extending from epistomal margin to upper level of eyes; surface moderately shining, minutely punctured and reticulate. Pronotum 1.2 times wider than long, widest just before posterior angles; sides weakly arcuate; anterior margin broadly rounded, with six erect serrations, four of these close, basally contiguous, median two serrations shorter than others, an additional pair of serrations widely separated from others; anterior slope bearing 15–20 small, widely separated asperities; posterior surface weakly shining, with shallowly impressed, widely separated punctures, interpuncture space minutely reticulate; vestiture consisting of minute, erect scales and very fine, recumbent setae. Elytra 1.3–1.4 times longer than wide; sides parallel on basal two-thirds; apex broadly rounded; discal striae very weakly impressed, with relatively large, close punctures; discal interstriae narrower than striae, weakly convex, each with a median row of short, broad scales, these shorter than interstrial width and separated in row by a distance greater than their length, scales becoming broader and closer over declivity. Declivity steep, convex; striae as on disc; interstriae narrower than on disc, each with a median row of erect, very broad scales, these much closer in row than their length and each scale 1.0–1.5 times longer than wide.

**Male.** Unknown.

**Distribution.** This species is known from Grenada, Martinique and Guana Island in the British Virgin Islands.

**Etymology.** From *ustulatus*, Latin for brown, referring to the yellowish-brown color of the adult.

**Comments.** Females of this species may be distinguished by their small size, by their somewhat chunky body, by the arrangement of serrations on the anterior pronotal margin as given and by the short, very broad, closely placed scales on the declivital interstriae.

***Hypothenemus vernaculus* Bright, sp. nov.**

Figure 136.

**Type Material.** **HOLOTYPE** (female) labeled: “**CURAÇAO**: Christoffel Park, Savonet, 12°21'01”N, 69°06'23”W, 7 Nov. 2014, R. Turnbow” / “HOLOTYPE *Hypothenemus vernaculus* D. E. Bright 2016” (RHTC [FSCA]).



**Figures 124–131.** Declivities of *Hypothenemus* spp. **124)** *H. setosus*. **125)** *H. solivegus*. **126)** *H. squamosus*. **127)** *H. striatus*. **128)** *H. tectus*. **129)** *H. turnbowi*. **130)** *H. ustulatus*. **131)** *H. versicolor*.

**Description (Female).** Length 1.3 mm, 2.5 times longer than wide; very dark reddish-brown. Frons convex; surface shining, densely minutely reticulate, with a long, median, slightly elevated, narrow, shining carina extending from epistoma to vertex. Pronotum 1.15 times wider than long, widest at base; sides weakly arcuate; anterior margin broadly rounded, with four, erect, acute serrations, these very slightly separated; anterior slope bearing 20 small, acute, widely separated asperities; posterior surface brightly shining, minutely reticulate, with scattered, small granules, punctures absent; vestiture consisting of short, erect, truncate scales and very fine, recumbent setae. Elytra 1.6 times longer than wide; sides parallel on basal two-thirds; apex broadly rounded; discal striae weakly impressed, with large, very weakly impressed, close punctures; discal interstriae brightly shining, much narrower than striae, very weakly convex, each with a median row of short, broad scales, these 2.0 times longer than wide with a truncate apex, shorter than interstitial width and separated in row by a distance less than their length.

Declivity steep, convex; striae as on disc; interstriae narrower than on disc, each with a median row of erect, very broad scales, these much closer in row than their length and each scale 2.0 times longer than wide and a median row of minute granules.

**Male.** Unknown.

**Distribution.** This species is known from Curaçao in the Netherlands Antilles.

**Etymology.** From *vernaculus*, Latin for native.

**Comments.** Females of this species may be most easily distinguished by the long, narrow, shining median carina on the frons. Other distinguishing characters are given in the above key and description.

***Hypothenemus versicolor* Bright, sp. nov.**

Figure 131.

**Type Material.** **HOLOTYPE** (female) labeled: “WEST INDIES: SAINT LUCIA, Mon Repos, 6.5 km W Fox Grove Inn, 10–28.VI.2007, submontane forest FIT, 300 m, S. and J. Peck” / “HOLOTYPE *Hypothenemus versicolor* D. E. Bright 2016” (SBPC [CNCI]).

**Description (Female).** Length 1.1 mm, 2.4 times longer than wide; head, pronotum, legs reddish, ventral surfaces and elytra black. Frons evenly convex; surface brightly shining, minutely punctured and reticulate, without any modifications. Pronotum 1.1 times wider than long, widest at base; sides weakly arcuate; anterior margin broadly rounded, with six, erect, acute serrations, these separated by a distance greater than their basal width except median pair closer and slightly shorter; anterior slope bearing 15–20 small, acute, widely separated asperities; posterior surface brightly shining, with obscure, shallowly impressed, widely separated punctures; vestiture consisting of minute, erect scales and very fine, recumbent setae. Elytra 1.5–1.6 times longer than wide; sides parallel on basal two-thirds; apex broadly rounded; discal striae not impressed (except striae 1), with obscure, very weakly impressed, close punctures; discal interstriae brightly shining, narrower than striae, very weakly convex, each with a median row of short, broad scales, these 1.5–2.0 times longer than wide with a truncate apex, shorter than interstitial width and separated in row by a distance less than their length, scales becoming broader and closer over declivity. Declivity steep, convex; striae as on disc; interstriae narrower than on disc, each with a median row of erect, very broad scales, these much closer in row than their length and each scale 1.0–1.5 times longer than wide.

**Male.** Unknown.

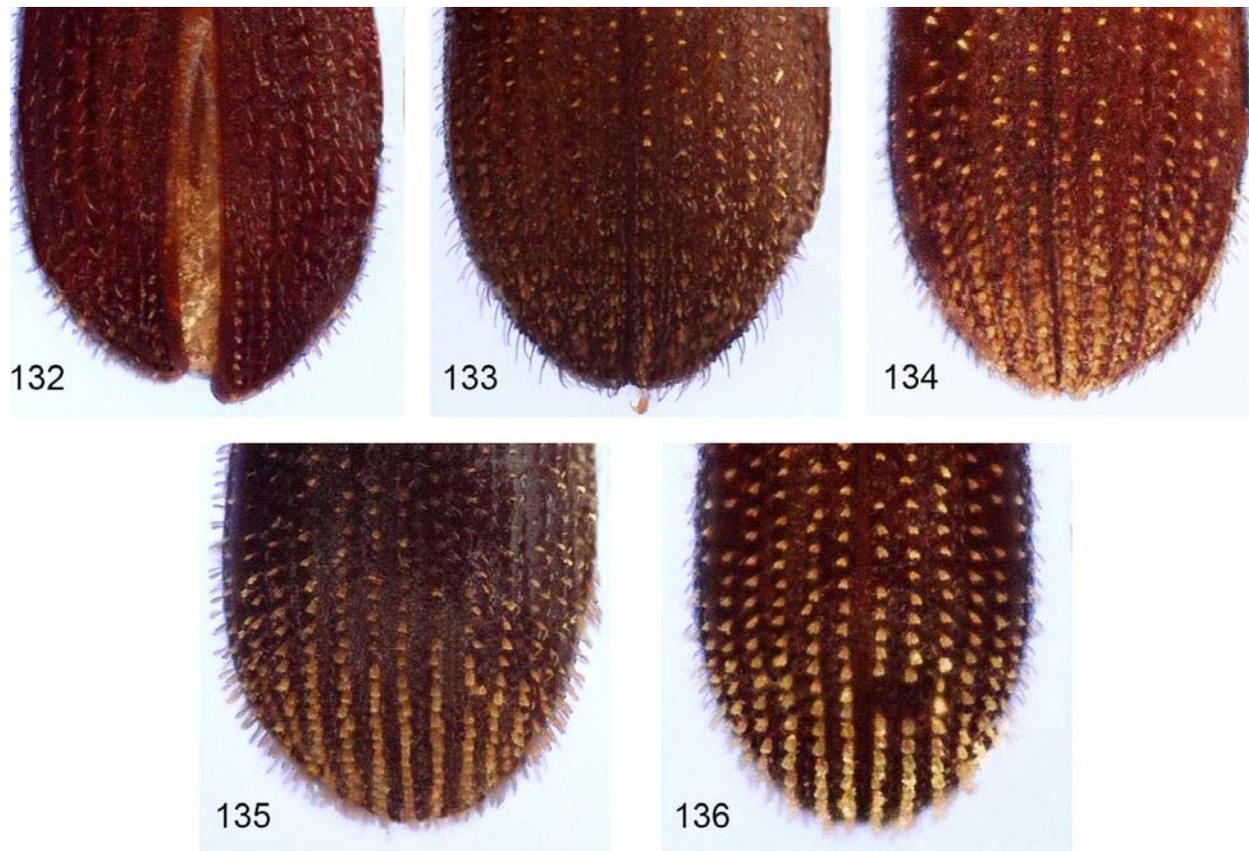
**Distribution.** This species is known from Saint Lucia.

**Etymology.** From *versicolor*, Latin for of various colors, referring to the bicolor condition of the adult.

**Comments.** Females of this species may be most easily to distinguish by their reddish pronotum and black elytra. In addition, they may be distinguished by the relatively large, narrow, acute, widely separated serrations on the anterior margin of the pronotum, by the convex, unmodified frons, by the short interstitial scales and by their small size.

***Hypothenemus villosus* Bright, sp. nov.**

**Type Material.** **HOLOTYPE** (female) labeled: “ST. EUSTATIUS: Quill Trail to bottom of crater, 17.47750°N, 62.96740°W, 27 MAY 2008, 0–750', beating logs, M. A. Ivie” / “*Hypothenemus villosus* D. E. Bright 2016” (WIBF [CNCI]). **PARATYPES** (2): 1 labeled: “Mirabeau Agri. Laboratory, Par. St. Andrews, St. Andrew, Grenada, 22–II-90, Blacklight trap, R. E. Woodruff” (CNCI); 1 labeled: “PUERTO RICO: Caribbean N. F., Catalina Field Off., 26–V-1994, R. Turnbow” (RHTC).



**Figures 132–136.** Declivities of *Hypothenemus* spp. **132)** *H. bifurcatus*. **133)** *H. granulatus*. **134)** *H. leptosquamosus*. **135)** *H. ponticus*. **136)** *H. vernaculus*.

**Description (Female).** Length 1.8 mm, 2.5 times longer than wide; light brown. Frons broadly, deeply, transversely impressed from epistomal margin to a level well above eyes, median portion of upper margin slightly elevated, remainder of upper margin rounded; surface of impressed area brightly shining, bearing abundant, short setae, these as long as antennal scape and a glabrous, longitudinal smooth space extending from epistomal margin almost to upper margin of impressed area. Pronotum 1.1 times wider than long, widest behind summit; sides broadly rounded; anterior margin broadly rounded, bearing eight serrations, median pair basally contiguous, remainder separated by a distance greater than basal width; summit distinctly elevated; anterior slope with more than 25 small, scattered asperities; posterior half smooth, shining, minutely reticulate, with scattered, minute granules and very short, semirecumbent and erect, hairlike setae, scales absent. Elytra 1.6 times longer than wide; sides parallel on basal two-thirds, converging to broadly rounded apex; discal striae not impressed, punctured in regular rows, punctures moderately large, shallowly impressed, separated by a distance much less than diameter of puncture, each with a small seta as long as, or slightly longer, than diameter of puncture; discal interstriae narrower than striae, each with a median row of erect, narrowly flattened scales, each scale 4.0 times longer than wide, 1.5 times longer than interstitial width, apex rounded. Declivity evenly convex, striae and interstriae as on disc except interstitial scales slightly longer.

**Male.** Unknown.

**Distribution.** This species is known from Saint Eustatius in the Netherlands Antilles, Puerto Rico and Grenada.

**Etymology.** From *villosus*, Latin for hairy, referring to the obvious setae on the frons.

**Comments.** The adult of this species resembles the adult of *H. columbi* but differs by the longer body size and by the more abundant and longer setae on the frons and by the longer interstitial scales, especially those on the declivity. Adults of this species are among the largest *Hypothenemus* in the West Indies.

**Genus *Microsomus* Bright, genus nov.**

With the character states of Cryphalini as given by Wood (2007) except antennal funicle is not visible; antennal club with suture 1 strongly procurved; elytra with minute, interstitial setae, ground vestiture absent and the extremely small size.

**Type species.** *Microsomus atomus* sp. nov, monotypic.

**Etymology.** From *mikros*, Greek for small and *soma*, Greek for body, referring to the small size of the adult. Gender masculine.

**Comments.** This genus is established for one species from Saint Croix in the Virgin Islands that differs significantly from any other currently recognized species in the Cryphalini. One species occurs in the West Indies.

***Microsomus atomus* Bright, sp. nov.**

Figures 445, 515.

**Type Material.** HOLOTYPE (female?) labeled: “VIRGIN IS.: Saint Croix, E Saint Fountain, 350 ft. 06 Jan-23 Feb 1993, J. Keularts, flight intercept trap #15” / “HOLOTYPE *Microsomus atomus* D. E. Bright 2016” (WIBF [CNCI]).

**Description (Female).** Length 0.7 mm, 2.1 times longer than wide; light brown. Frons convex (slightly distorted at vertex); surface dull, minutely reticulate, with a few scattered fine setae, these slightly longer on epistomal margin. Antennal scape club-shaped, longer than pedicel; funicle not visible; club oval, 1.4 times longer than wide; suture 1 strongly procurved. Pronotum 1.2 times longer than wide; sides strongly arcuate, anterior margin narrowly rounded with four distinct serrations, median pair basally contiguous, slightly larger the lateral pair; summit located at middle, distinctly elevated; anterior slope with scattered, small asperities, most of these equal in size to serrations on anterior margin; posterior portion dull, minutely reticulate, vestiture obsolete, not readily visible. Elytra 1.5–1.6 times longer than wide; sides parallel on basal three-fourths, apex very narrowly rounded; discal striae punctured in regular rows, punctures very large, distinctly impressed; discal striae much narrower than striae, each bearing a median row of minute setae, these shorter than interstitial width. Declivity convex, unmodified.

**Male.** Unknown.

**Distribution.** This species is known from Saint Croix in the U. S. Virgin Islands.

**Etymology.** From *atomus*, Latin for very small.

**Comments.** Adults of this exceedingly minute species may be recognized by the distinctly punctured elytral striae, by the four serrations on the anterior margin of the pronotum, by the small size and by the lack of any readily discernable vestiture.

**Genus *Pygmaeoborus* Bright, genus nov.**

With the character states of Cryphalini as given by Wood (2007) except antennal funicle 2-segmented (pedicel excluded), pedicel distinctly larger than funicle segments; antennal club appearing obliquely

truncate with sutures on distal third; anterior tibiae with three spines on distal end and the extremely small size.

**Type species.** *Pygmaeoborus cubensis* sp. nov., monotypic.

**Etymology.** From *pygmaeus*, Latin for dwarf or pygmy and *boros*, Greek for devouring, or a small borer. Gender masculine.

**Comments.** This genus is established for one species from Cuba that differs significantly from any other currently recognized species in the Cryphalini and cannot be placed in any current genus.

***Pygmaeoborus cubensis* Bright, sp. nov.**

Figures 446, 516.

**Type Material. HOLOTYPE** (female?) labeled: "CUBA: Santiago Province, Santiago, Jardin Botanico, 5-17 XII.95, 50 m, scrub for. FIT, S. Peck 95-72" / "HOLOTYPE *Pygmaeoborus cubensis* D. E. Bright 2016" (SBPC [CNCI]).

**Description (Female).** Length 0.8 mm, 3.1 times longer than wide; black. Frons convex; surface moderately shining; minutely reticulate, with scattered fine setae, these slightly longer on epistomal margin. Antennal scape club-shaped, longer than funicle; club oval, 1.4 times longer than wide, distal third bearing setae, sutures not evident. Pronotum 1.1 times longer than wide; sides weakly arcuate, anterior margin broadly rounded with six widely separated, large serrations; summit located at middle, distinctly elevated; anterior slope with scattered, small asperities, these smaller than serrations on anterior margin and bearing distinct, small, scattered, white scales, these equal in size to serrations on anterior margin; posterior portion shining, minutely reticulate, with exceedingly fine, shining granules and scattered, broad, white scales. Elytra 1.9 times longer than wide; sides parallel on basal three-fourths, apex narrowly rounded; discal striae not impressed, punctures very large, weakly impressed; discal striae much narrower than striae, each bearing a median row of small, white scales, these 2.0 times longer than interstitial width. Declivity convex, unmodified except interstitial scales slightly longer than those on disc.

**Male.** Unknown.

**Distribution.** This species is known from Cuba.

**Etymology.** This species is named for its type locality.

**Comments.** Adults of this extremely small species may be recognized by the presence of distinct white scales on the pronotum and elytra with no other vestiture evident, by the presence of six widely separated serrations on the anterior margin of the pronotum, by the very large striae punctures, by the antennae as described above and by the minute size.

### Genus *Scolytogenes* Eichhoff

*Scolytogenes* Eichhoff 1878a: 387; Wood and Bright 1992: 858; Bright and Skidmore 2002: 427 (checklist); Bright 2014: 232.

Species in *Scolytogenes* may be distinguished from other those in related genera by the absence of sutures in the antennal club except for a chitinized portion of the lateral half of suture 1, by the rounded lateral margins of the pronotum with an obscure, raised line on the basal third, by the abundant, short striae scales and the abundant, slightly longer interstitial scales on the elytra.

About 100 species are recorded in Bright and Skidmore (2002) from all tropical and subtropical regions of the world. One species is known from the West Indies.

***Scolytogenes jalappae* (Letzner)**

Figures 393, 447, 517.

*Bostrichus jalappae* Letzner 1848: 99.

*Scolytogenes jalappae*: Wood and Bright 1992: 862; Bright 2014: 233.

*Ernoporides knabi* Hopkins 1915a: 34 (Mexico); Wood 2007: 486.

*Scolytogenes knabi*: Wood and Bright 1992: 862; Bright and Skidmore 2002: 132; Bright 2014: 233.

*Hypothenemus floridensis* Hopkins 1915a: 34 (S. Florida).

*Hypothenemus ritchiei* Sampson 1918: 295 (Jamaica).

*Cryphalomorphus caraibicus* Schedl 1951: 96 (Guadeloupe).

*Cryphalomorphus minutissimus* Schedl 1951: 97 (Guadeloupe).

**Description (Female).** Length 1.3–2.0 mm, 2.6 times longer than wide; brown. Frons convex, with an indistinct, median, longitudinal elevation extending to near upper level of eyes and a weak transverse impression above epistomal margin; surface minutely reticulate, punctures sparse, indistinct and shallow; vestiture sparse, consisting of short, fine, hairlike setae, somewhat longer and more abundant along epistomal margin. Antennal club large, longer than scape, 1.3 times longer than wide. Pronotum 1.1 times longer than wide; sides weakly arcuate, anterior margin broadly rounded, unarmed or bearing two small, submarginal asperities; anterior slope bearing numerous (more than 30) small, erect asperities; posterior area shining, punctate-granulate; vestiture consisting of short, hairlike setae intermixed on posterior portion with equally long scalelike setae. Elytra 1.6 times longer than wide; sides parallel on anterior three-fourths, broadly rounded behind; striae not impressed except on 1, punctures fine, deep, separated by a distance greater than their own diameters; interstriae at least 2.0–3.0 times wider than striae, shining, very finely, confusedly punctured; vestiture of erect, scalelike, interstitial setae intermixed with shorter, more abundant, scalelike striae and interstitial setae. Declivity convex; striae slightly more impressed and punctures slightly larger than on disc.

**Male.** Similar to female but slightly smaller.

**Distribution.** This species is known from southern Mexico and Central America to northern South America. It probably occurs throughout the West Indies.

**Specimens examined.** **ANTIGUA:** Christian Valley Agricultural Station, 24–25.VII.1991 (1), 26.VII.1991 (1), 19.VIII.1991 (1) and 12–13.X.1991 (1), blacklight trap, R. E. Woodruff and FAO Insect Survey (4–FSCA, SBPC). **CAYMAN ISLANDS: Grand Cayman,** 9.VII.1987: Fitzgerald, blacklight trap (2–FSCA); **Cayman Brac,** Major Donald Dr., 6 km E. jet Ashton Reid Dr., 3 July 2013, R. Turnbow (1–FSCA, 1–CNCI). **CUBA:** Florida Blanca nr. Alto Songo, Oriente Province, May 23–24, 1959, M. W. Sanderson (1–CNCI). **DOMINICAN REPUBLIC:** Barahona Province, 32 km S. Barahona, nr. coast, 29 Aug. 1988, on dead logs, M. A. Ivie, T. E. Philips and K. A. Johnson (1–WIBF); Constanza, 1250 m, 14. 6. 1972, J. and S. Klapperich (1–CNCI); La Viga, 1 km W Manabao, 5 June 1994, R. Turnbow (2–RHTC); San Cristobal Province, Borbon Cuevas Pomier, tropical deciduous forest flight intercept trap, 13–28.VII.95, S. and J. Peck (5–CNCI). **GRENADA:** Saint Andrew, Mirabeau Agriculture Laboratory, various dates and collectors in 1990, light trap (8–SBPC); Saint Patricks Plains, 10.VI.1990, F. Noel, light trap (2–SBPC). **GADELOUPE:** Basse-Terre: Pigeon, Chalet Sou-le-Vent, N16°09.05, W61°45.37, 170 m / hotel yard uv trap, 13.V.2012, S. Peck (1–SBPC). **JAMAICA:** Saint Andrew Parish, SW slope Long Mountain, Kingston, 28 June 1958, M. W. Sanderson, beating palm frond shelter (1–CNCI); Trelawny Parish, Barbecue Bottom, 10 August 1966, H. F. Howden (1–CNCI); Island record only, 1917, A. H. Ritchie (3–NHML)(cotypes). **MARTINIQUE:** Gros Marne, Quartier La Fraicheur, 14.VII-4.VIII.1997, Roguet (1–CNCI). **MONTSERRAT:** Woodlands, Cassava Ghaut, Beattie House, 01–29 June 2003, K. A. Marske, flight intercept trap (1–WIBF). **PUERTO RICO:** Guaynabo, various dates in 1995 to 2000, J. Torres / ex: light trap (16–CNCI, USNM); Guánico, VII.1996, ex: light trap, M. Canals (1–CNCI); Rd 155 Bo, Perchas, Morovis, *Pinus caribaea* (1–PRDA).

**Record from literature.** **CUBA:** Island record only (Vázquez et al. 2003).

**Comments.** This species was known in recent literature as *Scolytogenes knabi* (Hopkins). This name was placed in synonymy by Wood (2007) under *S. jalappae*. It was evidently introduced into the New World a long time ago and its original distribution can no longer be determined.

This species occurs in a wide variety of host plants including *Cardiosperma*, *Ipomoea* and *Caloncytion*. It is recorded (as *S. knabi*) as causing serious injury to dried sweet potato chips in Jamaica (Sampson 1918).

Adults of this species may be distinguished by their small size, by the 3-segmented antennal funicle (pedicel excluded), by the absence of sutures on the antennal club except for the strongly procurved chitinized septum in the lateral half of suture 1 and by the dense vestiture on the elytra (Fig. 447, 517).

### Genus *Stegomerus* Wood

*Stegomerus* Wood 1967: 129; Wood and Bright 1992: 852; Bright and Skidmore 1997: 182; Bright and Skidmore 2002: 439 (checklist); Bright 2014: 233.

Species in *Stegomerus* may be distinguished from those in related genera by the rounded lateral and basal margins of the pronotum, by the 4-segmented antennal funicle (pedicel excluded) and by the large antennal club with three weakly visible, arcuate sutures marked by rows of setae.

Seven species are included in this genus (Bright and Skidmore 2002, Wood 2007), all from Mexico, Central and South America. One species is herein recorded from the West Indies. Species in this genus are rarely encountered. Wood (1982) gives brief notes concerning gallery patterns. Most species occur in dying vines and lianas.

#### *Stegomerus diversus* Bright, sp. nov.

Figures 448, 518.

**Type Material.** HOLOTYPE (female?) labeled: “**Puerto Rico:** Orocovicis, Orocovicis, Site 7, EDRR, 18.18103, -66.48483, 19.vi-2.vii.2013, C. Torres & H. Rivera” / “HOLOTYPE *Stegomerus diversus* D. E. Bright 2016” (MSUC). PARATYPES (2): 1 labeled with same data as holotype (CNCI); 1 labeled “**PUERTO RICO:** Orquidiae St., Km 9.7, Bo, Cubuy Arriba, Canovanas / 25.xi.2008, ex: *Tabebuia heterofilia*” (CNCI).

**Description (Female).** Length 1.4 mm, 2.5 times longer than wide; dark brown. Frons convex, weakly flattened from epistoma to just below upper level of eyes; surface weakly shining, minutely reticulate and punctured above impression, weakly punctured below with scattered, short setae. Antennal club very large, 1.2 times longer than wide, slightly longer than scape and funicle combined, with three obscure, arcuate sutures marked by rows of short setae. Pronotum as long as wide, widest near base; sides weakly arcuate; anterior margin broadly rounded, bearing eight, basally separated, poorly developed serrations; anterior slope bearing 15 small asperities, these very slightly larger than serrations on anterior margin; summit weakly elevated; posterior area shining, with abundant, minute granules and very short setae and scales. Elytra 1.4 times longer than wide; sides parallel; apex broadly rounded; discal striae not impressed, punctured in even rows, punctures moderately large, weakly impressed, each bearing a very short, recumbent seta as long as diameter of puncture; discal interstriae as wide as or slightly wider than striae, each with a median row of short, erect scales, these 2.0–3.0 times longer than wide, truncate at tip, no additional ground cover. Declivity convex; surface as on disc except striae punctures slightly smaller.

**Male.** Unknown.

**Distribution.** This species is known from Puerto Rico.

**Etymology.** From Latin *diversus*, meaning different or diverse.

**Comments.** Females of this species are very similar to those of *S. pygmaeus* Wood known from Costa Rica, Honduras and Jalisco and Nayarit in Mexico. Adults of *S. diversus* differ by their slightly larger size, by the slightly longer and apically truncate interstitial scales and by the slightly larger antennal club. Adults superficially resemble those of *Scolytogenes jalappae* (Letzner) but differ by the lack of a

groove on the metatibia for retention of the tarsi when retracted, by the lack of a raised line on the lateral margin of the prothorax, by the 4-segmented antennal funicle (pedicel excluded) and by the different arrangement of the elytral vestiture. In *S. diversus*, the elytra vestiture consists of minute striae and a row of erect scales in each interstriae, with no additional ground vestiture. In specimens of *Scolytogenes jalappae*, the elytra are more densely covered by randomly placed ground cover.

Two specimens of this species were trapped in Puerto Rico as part of the USDA EDRR program: one specimen is from *Tabebuia heterofilia*.

### **Genus *Trypolepis* Bright, genus nov.**

With the character states of Cryphalini as given by Wood (2007) except antennal funicle evidently 1-segmented (pedicel excluded), pedicel and funicle segment large, round, of equal size; antennal club large, flat with one very obscure, transverse suture; elytra clothed with very abundant, densely placed, small, broad scales, placed in no apparent order; body stout, 2.3 times longer than wide.

**Type species.** *Trypolepis antillicum* sp. nov., monotypic.

**Etymology.** From *trypano*, Greek for bore or penetrate and *lepis*, Greek for scale, for a scaly borer. Gender feminine.

**Comments.** This genus is established for one species from Grenada that differs significantly from any other currently recognized species in the Cryphalinae. One species occurs in the West Indies.

### ***Trypolepis antillicum* Bright, sp. nov.**

Figures 449, 519.

**Type Material.** HOLOTYPE (female?) labeled: "WEST INDIES: GRENADA: Saint George's Par., Grand Anse, 21–25.V.1992, H. V. and R. M. Baranowski, light trap" / "HOLOTYPE *Trypolepis antillicum* D. E. Bright 2016" (FSCA).

**Description (Female).** Length 1.0 mm, 2.3 times longer than wide; light reddish-brown. Frons very weakly concave on a sub-triangular area extending from epistoma to upper level of eyes; surface shining, minutely sculptured, bearing a fringe of short, yellowish, narrowly flattened setae, median portion of concave area without setae; setae along epistoma slightly longer, more dense in median area. Pronotum 1.3 times wider than long, widest at base; sides broadly arcuate, strongly converging toward anterior margin; anterior margin narrowly rounded, without serrations, but with two asperities just behind margin; anterior slope bearing 25 large asperities arranged into six mostly uneven concentric rows, the rows behind summit more evenly concentric; summit not elevated, located on basal third; basal and lateral surface bearing numerous, small, broad scales; asperate portion bearing longer scales in a row behind concentric rows. Elytra 1.5 times longer than wide; sides parallel on basal two-thirds, broadly rounded at apex; striae obscure, not impressed, punctured in regular rows; interstriae shining, as wide as striae, with minutely rugulose surface; entire surface covered with very small, densely placed scales, those in interstriae very slightly longer than others. Declivity steeply, broadly convex, surface as on disc except interstitial scales very slightly longer and broader. Anterior tibia with six socketed teeth on lateral margin.

**Male.** Unknown.

**Distribution.** This species is known from Grenada.

**Etymology.** This species is named for the Antilles.

**Comments.** Only one specimen of this species is available for examination, but the unique combination of characters should allow for reliable identification in the future. Adults may be readily recognized by

the very dense covering of randomly placed, very small scales on the elytra and on the lateral and basal portions of the pronotum, by the relatively large asperities on the pronotum that are arranged in obscure concentric rows, by the small size and by the other characters mentioned in the above description.

### SUBFAMILY HEXACOLINAE

Members of this subfamily may be characterized by the 4- to 6-segmented antennal funicle (pedicel excluded), by the costate lateral margins of the pronotum, by the widely separated procoxae (one exception) and by the basal margin of elytra usually finely elevated.

In the West Indies, this subfamily contains five genera in one tribe.

### KEY TO THE GENERA OF THE HEXACOLINAE IN THE WEST INDIES

1. Entire dorsal surface of pronotum smooth to minutely reticulate, punctured ..... **2**
- Pronotum asperate anteriorly, or, if smooth, then anterior margin of elytra bearing a fine, raised line ..... **3**
  
- 2(1). Pronotum longer than wide, viewed from above lateral margin straight or weakly constricted (Fig. 521); antennal club subglobular, as long as wide, sutures not clearly visible (Fig. 395); elytral vestiture consisting of a single row of hairlike setae in each interstriae (Fig. 521); small, slender species ..... ***Microborus* Blandford** (p. 184)
- Pronotum wider than long, viewed from above lateral margin arcuate (Fig. 141, 142); antennal club asymmetrically flattened, pointed, at least 1.5 times longer than wide, sutures 1 and 2 clearly visible, marked by a row of setae (Fig. 396); vestiture scalelike, abundant, completely covering elytra (Fig. 453, 523); larger, stouter species ..... ***Pycnarthrum* Eichhoff** (p. 191)
  
- 3(1). Procoxae contiguous; antennal club with one visible oblique suture chitinized on half of length; antennal funicle 4-segmented (pedicel excluded); length 1.4 mm, 2.9 times longer than wide (Fig. 452, 522) ..... ***Pseudohexacolus* Bright, genus nov.** (p. 190)
- Procoxae widely separated; antennal club with or without sutures, not as above; antennal funicle 5- or 6-segmented (pedicel excluded); body larger, stouter ..... **4**
  
- 4(3). Antennal club large, broad, densely pubescent, with procurved sutures (Fig. 394); pronotal summit on basal third; asperities on anterior portion of pronotum coarse; elytral base without a fine raised line; elytral vestiture consisting of abundant, minute hairlike setae and very sparse, widely separated, interstitial rows of long, erect scales (Fig. 450, 520) ..... ***Gymnochilus* Eichhoff** (p. 183)
- Antennal club small, sutures present or not (Fig. 397); pronotal summit at middle or indefinite; asperities on anterior third of pronotum, if present, fine; elytral bases with a fine, raised line; elytral vestiture usually sparse, hairlike (Fig. 454, 524) ..... ***Scolytodes* Ferrari** (p. 194)

### TRIBE HEXACOLINI

#### Genus *Gymnochilus* Eichhoff

*Gymnochilus* Eichhoff 1868a: 399; Wood and Bright 1992: 386; Bright and Skidmore 1997: 85; Bright and Skidmore 2002: 355 (checklist); Bright 2014: 94.

Members of this genus may be recognized by the 6-segmented antennal funicle (pedicel excluded), by the presence of coarse asperities on the anterior portion on the pronotum, by the dense ground vestiture consisting of short, hairlike setae on the elytra, with fine, erect, interstitial setae and by the stout body.

Twelve species are listed in this genus in Bright and Skidmore (2002), all from the New World tropics. Wood (2007) treats several of these species, including *insularis*, in the genus *Scolytodes* but that placement is not recognized here.

***Gymnochilus insularis* (Eggers)**

Figures 394, 450, 520.

*Problechilus insularis* Eggers 1932a: 232.

*Gymnochilus insularis*: Wood and Bright 1992: 386.

**Description (Male).** Length 2.4–2.5 mm, 1.9 times longer than wide; light to dark yellowish-brown, often with two dark brown stripes on lateral portion on pronotal disc. Frons transversely flattened to weakly impressed from epistoma to midway of eye length, convex above, impression acutely margined on each side just above antennal insertions by a fine, raised line extending from epistomal margin almost to inner margin of eye; vertex with a pair of small, elongate swellings at upper level of eyes; surface moderately shining, with fine reticulation and minute, impressed punctures. Antennal club as long as wide, asymmetrically circular, with two obscure, arcuate sutures. Pronotum 1.2 times wider than long, widest slightly anterior to posterior angles; sides and anterior margin broadly, evenly rounded, marked by a fine raised line, anterior margin with 25 broad serrations; summit on posterior fourth; anterior slope flattened to very weakly convex from summit to anterior margin, with abundant, low, broad asperities, surface between asperities dull, minutely reticulate; posterior area dull, very finely granulate, transition from asperate to granulate areas abrupt, on a transverse, recurved line. Elytra 1.5 times longer than wide; sides weakly arcuate, converging to narrowly rounded apex; discal striae distinctly impressed, punctures obscure; discal interstriae slightly convex, 4.0 times wider than striae, densely clothed with short, recumbent, yellowish setae, interstriae 1, 3, 5, 7 and 9 with a median row of long, slender, acutely pointed setae. Declivity broadly convex; striae slightly impressed; interstriae 2 slightly impressed below level of interstriae 1 and 3; vestiture on all interstriae similar to disc except setae denser and more scalelike.

**Female.** Similar in size and proportions to the male. Frons more evenly convex, without a pair of smooth elevations and without acutely elevated lateral margins.

**Distribution.** This species is known from Dominica, Guadeloupe, Montserrat and Saint Vincent and the Grenadines.

**Specimens examined. DOMINICA:** Clarke Hall, 11–20.II.1965, Malaise trap, W. W. Wirth (1–USNM). **GADELOUPE:** Env. de Trois Rivières, Leo Dufau (2–USNM, 37–MNHN). **MONTSERRAT:** Centre Hills, Cassava Ghaut, 690 ft., 25 June 2000, under bark of recently cut log (17–WIBF); Woodlands, Cassava Ghaut, Beattie House, 30 May–06 June 2002, M. A. Ivie (1–WIBF). **SAINT VINCENT AND THE GRENADINES: Saint Vincent,** Island record only, H. H. Smith (1–USNM); **Saint Vincent,** Hermitage Forest, E. of Spring Valley, 348 m, 15–27.VIII.2006, forest edge flight intercept trap, S. and J. Peck (3–SBPC).

**Comments.** Adults of this species may be easily recognized by the generic and specific characters given in the above keys.

The holotype and 36 cotypes (paratypes) from Guadeloupe in the MNHN were examined in addition to two cotypes in the USNM. Wood (2007) considers this species to be a member of *Scolytodes* based on a miscount of the segments in the antennal funicle and his contention that the antennal club and pronotum are of the *Scolytodes* type and by the lack of other essential characters. It is maintained here in *Gymnochilus* based on the antennal funicle consisting of six segments (pedicel excluded) (five in *Scolytodes*) and other characters as given in the key to genera.

This species was listed as *G. reitteri* Eichhoff in Ivie et al. (2008a).

**Genus *Microborus* Blandford**

*Microborus* Blandford 1897: 175; Wood and Bright 1992: 383; Bright and Skidmore 2002: 384 (checklist); Bright 2014: 94.

Members of *Microborus* may be distinguished by the subglobular antennal club which is without sutures, by the 5-segmented antennal funicle (pedicel excluded) and by the large eyes that encroach onto

the frons and are separated on the vertex by more or less the width of an eye. In addition, the length of the body is less than 1.5 mm, the elytral declivity is convex and often has several small granules in interstriae 2 especially in the males, the lower margin of the declivity is acutely elevated and the procoxae are widely separated.

Species in this genus are monogamous and phloeophagous, constructing galleries in the phloem of logs and limbs, evidently using the entrance holes made by other species of bark beetles (Wood 1982).

Eight species were previously known (Bright and Skidmore 2002), six are treated herein from the West Indies.

### Key to the species of *Microborus* in the West Indies

1. Pronotum brightly shining between punctures, without any indication of reticulation; eyes separated on vertex by a distance greater than width of eye ..... **2**
- Pronotum either shining with reticulation between punctures on basal portion or dull and reticulate between punctures; eye separation variable ..... **3**
  
- 2(1). Elytral declivity with an acutely elevated ridge extending from junction of interstriae 7 and 9 to sutural apex; length 1.3 mm; Dominican Republic ..... ***M. rawlinsi* Bright, sp. nov.** (p. 189)
- Elytral declivity without an acutely elevated ridge extending from junction of interstriae 7 and 9 to sutural apex; length 1.3–1.8 mm; Dominican Republic, Puerto Rico ..... ***M. lautus* Wood** (p. 189)
  
- 3(1). Eyes separated on vertex by a distance equal to one-half of eye width ..... **4**
- Eyes separated on vertex by a distance equal to or wider than width of eye ..... **5**
  
- 4(3). Declivital striae strongly impressed, as wide or wider than interstriae; setae on declivital interstriae 2 as long as distance between rows; length 1.3–1.6 mm; Jamaica ..... ***M. boops* Blandford** (p. 186)
- Declivital striae weakly impressed, narrower than interstriae; setae on declivital interstriae 2 1.5–2.0 times longer than distance between rows; length 1.3–1.4 mm; Guadeloupe ..... ***M. aberrans* Wichmann** (p. 185)
  
- 5(3). Pronotum shining between punctures with reticulation on basal portion; eyes separated on vertex by a distance equal to 1.5 times wider than eye; declivital interstriae 2 of male not distinctly elevated, usually with much smaller granules, interstriae with setae; length 1.3–1.4 mm; Cayman Islands ..... ***M. caymanensis* Bright, sp. nov.** (p. 187)
- Pronotum dull, minutely reticulate between punctures; eyes separated on vertex by a distance equal to twice the eye width; declivital interstriae 2 of male distinctly elevated, with five distinct granules bordered by numerous, slightly smaller scales; interstriae 1 with a median row of small scales; length 1.3 mm; Dominica, Netherlands Antilles (Saba) and Montserrat ..... ***M. iviei* Bright, sp. nov.** (p. 187)

### ***Microborus aberrans* Wichmann**

*Microborus aberrans* Wichmann 1914: 143; Wood and Bright 1992: 383; Bright 2014: 94.

*Microborus imitans* Eggers 1940: 131 (Guadeloupe).

**Description (Male).** Length 1.3–1.4 mm, 2.8 times longer than wide. Frons convex; surface dull, faintly reticulate, punctures widely spaced, small and shallow; vestiture sparse, consisting of short, yellowish hairlike setae. Eyes very large, narrowly separated on front by a distance equal to half width of eye, broadly emarginate opposite antennal insertion. Antennal club oval, appearing subtruncate, slightly wider than long, sutures recurved, confined to apical half. Pronotum 1.4 times longer than wide; sides nearly parallel on posterior two-thirds, converging toward the broadly rounded anterior margin; surface densely punctured, the punctures large, deep, close; interpuncture space dull, minutely reticulate or with

fine scratches. Elytra 1.7 times longer than wide; sides parallel, broadly rounded at apex; discal striae shallowly impressed at base, becoming more strongly impressed toward declivity, punctures large, deep; discal interstriae convex, distinctly wider than striae, surface strongly reticulate, punctures very faint, each interstriae with a row of short, yellowish setae mostly confined to posterior half of disc. Declivity convex; striae more strongly impressed than on disc; interstriae slightly elevated, convex, faintly granulate; interstriae 2 with several, usually two, large granules and with short scalelike setae, these slightly shorter than granules; apex with a narrowly elevated ridge extending from suture to interstriae 7.

**Female.** Similar in size to male. Declivity as in male except granules absent in interstriae 2 but small granules may be present in interstriae 1–3; interstitial setae on declivity less abundant and shorter.

**Distribution.** This species is known from Guadeloupe and from Brazil, French Guiana and Venezuela (Wood and Bright (1992)).

**Specimen examined. GUADELOUPE:** Island record only (1–USNM).

**Comments.** This species is possibly a synonym of *M. boops* Blandford. The holotype of *M. imitans* Eggers in the USNM was examined, but no opinion was reached. Additional specimens are required in order to access the specific status of this taxon.

### ***Microborus boops* Blandford**

Figure 137.

*Microborus boops* Blandford 1897: 175; Wood and Bright 1992: 383; Bright and Skidmore 1997: 84; Bright 2014: 95.

**Description (Male).** Length 1.3–1.6 mm, 2.5 times longer than wide; reddish, darker on head and dorsal surface of pronotum. Frons generally convex to below eye level, flattened just above epistomal margin; surface dull, faintly reticulate, punctures widely spaced, small and shallow; vestiture sparse, consisting of short, yellowish hairlike setae. Eyes very large, narrowly separated on front by a distance equal to or less than width of eye, broadly emarginate opposite antennal insertion. Antennal club oval, appearing subtruncate, slightly wider than long, sutures recurved, confined to apical half. Pronotum 1.2 times longer than wide; sides nearly parallel on posterior two-thirds, converging toward the broadly rounded anterior margin; surface evenly convex, generally dull, densely punctured, the punctures large, deep, close; interpuncture space at least partly minutely reticulate or with fine scratches; median line smooth, impunctate. Elytra 1.7 times longer than wide; sides parallel, broadly rounded at apex; anterior margin truncate, smooth; striae shallowly impressed at base, becoming more strongly impressed toward declivity, punctures large, deep; interstriae convex, as wide as striae, surface smooth, shining, punctures very faint; vestiture consisting of short, yellowish interstitial setae mostly confined to posterior half of disc. Declivity convex; striae more strongly impressed than on disc; interstriae slightly elevated, convex, faintly granulate; interstriae 2 with four or five small, acute granules or tubercles and with dense, short scalelike setae, these slightly shorter than granules; interstriae 7 modified into an acute, elevated ridge extending from lateral margin of elytra to junction with interstriae 9, continuing on to apex; vestiture longer and more abundant than on disc.

**Female.** Similar in size to male. Declivital interstriae 2 unarmed, with sparse setae.

**Distribution.** This species is known in the West Indies from Jamaica. It occurs in Costa Rica, Guatemala, Panama and Honduras. It has been introduced into Ghana and Cameroon in Africa. Wood (2007) states that the species has not yet been reported from South America, but it was reported (perhaps erroneously) from Tobago (Bright 2002).

**Specimens examined. JAMAICA:** Kingston Parish, Kingston, 12 February 1937, Chapin and Blackwelder (1–USNM); Saint Catherine Parish, Spanish Town, 2 February 1937, Chapin and Blackwelder (1–USNM); Trelawny Parish, Duncans, 7 August 1966, Howden and Becker (1–CNCI).

**Comments.** Adults of this species may be recognized by the presence of small granules on declivital interstriae 2 and by the very large, narrowly separated eyes.

***Microborus caymanensis* Bright, sp. nov.**

Figures 138, 395.

**Type Material.** **HOLOTYPE** (sex?) labeled: “**CAYMAN ISLANDS: Cayman Brac**, N19°43.158', W79°47.579', 8.VI.2008, M. C. Thomas, R. H. Turnbow, B. K. Dozier, blacklight trap” / “**HOLOTYPE** *Microborus caymanensis* D. E. Bright 2016” (FSCA). **PARATYPES** (173): 19 labeled with same data as holotype (FSCA); 95 labeled: “**CAYMAN, Cayman Brac**, N19°43.158', W79°47.579' (or N19°42.639', W79°48.907'), blacklight trap, 7 June 2008, Thomas and Turnbow” (CNCI, FSCA, WIBF); 1 labeled: “**CAYMAN IS.: Cayman Brac**, Creek, 27.XII. 1995, C. A. Dilbert, blacklight trap” (FSCA); 7 labeled: “**CAYMAN ISLANDS: Cayman Brac**, Bight Rd., Brac Parrot Res., 24 or 25. V.2009, Thomas, Turnbow and Ball, blacklight trap” (FSCA, WIBF); 3 labeled: “**WEST INDIES: GRAND CAYMAN**, 14.XI.1992, blacklight trap: Fitzgerald 16239” (FSCA); 4 labeled: “**CAYMAN ISLANDS: GRAND CAYMAN**, various dates in 1989, 1990, blacklight trap: Fitzgerald” (FSCA); 1 labeled: “**CAYMAN ISLANDS: Grand Cayman**, forest 1.5 km S of Hutland, 19°20'N, 81°13'W, 18 February 1993” / “at blacklight in forest near mangrove, W. E. Steiner, J. M. Swearingen, F. J. Burton” (USNM); 1 labeled: “**CAYMAN ISLANDS: Grand Cayman**, Georgetown, 23.II.1984, E. Gerberg, at light” (FSCA); 5 labeled: “**CAYMAN: Cayman Brac**, Major Donald Dr., 4 km E jct. Ashton Reid Dr., blacklight trap, 22 May 2009, Thomas, Turnbow and Ball” (CNCI, FSCA); 7 labeled: “**CAYMAN: Grand Cayman**, Mastic Trailhead S, blacklight trap, 21 May 2009, Thomas, Turnbow and Ball” (FSCA); 4 labeled: “**CAYMAN: Little Cayman**, .3 km SE Spot Bay, blacklight trap, 26 May 2009, Thomas, Turnbow and Bell” (CNCI, FSCA); 24 labeled: “**CAYMAN: Cayman Brac**, .9 km E Brac Parrot Reserve, bl trap, 4 July 2013, R. Turnbow” (18–FSCA, 6–CNCI); 2 labeled: “**CAYMAN: Little Cayman**, North Side Rd., 1 km W jct. Olivine Kirk Dr., bl trap, 5 July 2013, R. Turnbow” (FSCA).

**Description (Male).** Length 1.3–1.4 mm, 2.7 times longer than wide. Frons flattened on a triangular area extending from epistomal margin to a point just below lower level of eyes, convex above with a few scattered punctures; surface weakly shining, minutely reticulate, with obscure punctures. Eyes encroaching onto frons, separated on vertex by a distance equal to 1.5 times eye width. Pronotum 1.2 times longer than wide; sides slightly arcuate, anterior margin broadly rounded; surface densely punctured, interpuncture space shining on anterior portion, slightly minutely reticulate on basal third. Elytra 1.4–1.5 times longer than long; sides parallel on basal three-fourth, apex broadly rounded; discal striae not impressed, punctures large, deeply impressed; discal interstriae as wide as striae, each with a median row of minute punctures, basal half of each with a median row of fine setae. Declivity convex; striae slightly more deeply impressed than on disc; interstriae convex, slightly elevated, setae on apical portion of interstriae 1 and 2 more scalelike, each interstriae with a few very small granules; apex with a narrowly elevated ridge extending from suture to interstriae 7.

**Female.** Similar in size to male. Declivital interstriae without granules, interstitial setae sparser.

**Distribution.** This species is known from the Cayman Islands.

**Etymology.** This species is named for the Cayman Islands.

**Comments.** Adults of this species closely resemble those of *M. rawlini* but differ by the slightly reticulate posterior portion of the pronotum and by the distribution.

***Microborus iviei* Bright, sp. nov.**

Figure 139.

**Type Material.** **HOLOTYPE** (sex?) labeled: “**MONTSERRAT: Cassava Ghaut**, Beattie House, 16°45.91'N, 62°12.05'W, 21–30 June 2002, 632 ft., M. A. Ivie, uv light” / “**HOLOTYPE** *Microborus iviei* D. E. Bright 2016” (WIBF [CNCI]). **PARATYPES** (2): 1 labeled: “**DOMINICA: St. David Par.**, ca.1 km NE Ponte Casse Waitukubuli Nat. Trail, 15.3815N, 61.3401W, 31 May–05 June 2011, Malaise over dead tree” (WIBF); 1 labeled: “**SABA: NETH. ANTL.**, 524 m, Ecolodge on Mt. Scenery, 17.62879°N, 63.23785°W, 1–19 MAY 2008, FIT w/pitfall, D. S. Sikes, M. A. Ivie” (broken, missing left elytron, CNCI).



**Figures 137–140.** Declivities of *Microborus* spp. 137) *M. boops*. 138) *M. caymanensis*. 139) *M. iviei*. 140) *M. rawlini*.

**Description (Male).** Length 1.3 mm, 2.7 times longer than wide. Frons with a very weak, transverse impression just below lower eye level, convex above and below impression, very weakly flattened just above epistoma, with an extremely obscure, longitudinal carina across flattened area; surface weakly shining, minutely reticulate, with obscure punctures. Eyes encroaching onto frons, separated on vertex by a distance twice eye width. Pronotum 1.3 times longer than wide; sides slightly arcuate, anterior margin broadly rounded; surface densely punctured, interpuncture space dull, densely minutely reticulate over entire surface. Elytra 1.7 times longer than long; sides parallel on basal three-fourth, apex broadly rounded; discal striae and interstriae as in preceding species. Declivity convex; striae deeply impressed; all interstriae slightly elevated, 2 with a median row of five moderately large granules, these bordered by numerous, slightly shorter scales, 3 with a median row of very small, acute granules.

**Female.** Similar in size to male. Declivital interstriae 2 devoid of granules or granules very small and inconspicuous.

**Distribution.** This species is known from Dominica, Montserrat and Saba in the Netherlands Antilles.

**Etymology.** This species is named for Dr. Michael A. Ivie, Montana State University, the collector of the holotype, in recognition of his immense contribution to the knowledge of the arthropod fauna of the West Indies.

**Comments.** Adults of this species may be recognized by the widely separated eyes on the vertex, by the dull, minutely reticulate interpuncture spaces on the pronotum and, in males, by the row of distinct granules and the bordering scales on declivital interstriae 2.

***Microborus lautus* Wood**

Figures 451, 521.

*Microborus lautus* Wood 1961: 101; Wood and Bright 1992: 383; Bright 2014: 95.

**Description (Male).** Length 1.3–1.8 mm, 2.8 times longer than wide; elytra reddish, darker on head and dorsal surface of pronotum. Frons generally convex to below eye level, flattened just above epistomal margin; surface dull, faintly reticulate, punctures widely spaced, small and shallow; vestiture sparse, consisting of short, yellowish hairlike setae. Eyes very large, widely separated on front by a distance greater than width of eye, broadly emarginate opposite antennal insertion. Antennal club oval, appearing subtruncate, slightly wider than long, sutures recurved, confined to apical half. Pronotum 1.3–1.4 times longer than wide; sides nearly parallel on posterior two-thirds, converging toward the broadly rounded anterior margin; surface evenly convex, brightly shining, densely punctured, the punctures large, deep, close; interpuncture space completely smooth, without any indication of reticulation or fine scratches; median line smooth, impunctate. Elytra 1.6–1.7 times longer than wide; sides parallel, broadly rounded at apex; anterior margin truncate, smooth; striae not impressed, punctures large, deep; interstriae very weakly convex to flat, as wide as striae, surface smooth, shining, punctures very faint; vestiture consisting of a median row of short, yellowish interstitial setae, these slightly longer than interstitial width and extending from base to apex. Declivity convex, as on disc except striae more strongly impressed and interstriae very faintly granulate; interstriae 2 with small granules and without special modification; interstriae 7 not elevated or very slightly so.

**Female.** Similar in size and other characters to male, differs by slightly smaller granules in declivital interstriae 2.

**Distribution.** This species is known from the Dominican Republic and Puerto Rico.

**Specimens examined. DOMINICAN REPUBLIC:** Province Pedernales, Cabo Rojo, Alcoa Headquarters, 20–24.VI.99, R. Woodruff, R. Baranowski, blacklight (1–REWC). **PUERTO RICO:** Guánica, 26.XII.96, J. Torres / ex: light trap (1–CNCI); same locality, V.1999 / ex *Plumeria alba*, F. Pedreros (49–CNCI); Leper Island, San Juan / in dead Oleander twig / F. Sein, May 17, 1935 (2–USNM, 1–CNCI); Island record only, EDRR, Site 9, 9/17/[20]14 (1–MSUC).

**Comments.** Adults may be most easily recognized by the brightly shining pronotal disc with no trace of reticulation in the interpuncture space and by the unmodified elytral declivity. The type material has been examined and compared to the Puerto Rico specimens mentioned above.

***Microborus rawlinsi* Bright, sp. nov.**

Figure 140.

**Type Material. HOLOTYPE** (male) labeled: “**DOMINICAN REPUBLIC:** Pedernales, 26 km N Cabo Rojo, 18.06N, 71.38W, 730 m, 13 July 1990, J. Rawlins, C. Young, S. Thompson” / “Carnegie Museum Specimen number CMNH 350.186” / “**HOLOTYPE** *Microborus rawlinsi* D. E. Bright 2016” (CMNH). **PARATYPE** (1) labeled with same data as holotype except the museum number is CMNH 350.277 (CNCI).

**Description (Male).** Length 1.3 mm, 2.7 times longer than wide. Frons weakly impressed on a median, triangular space just above epistoma, apex of triangle at half the distance to lower margin of eyes, sides of triangle weakly elevated at apex, convex above, surface slightly shining. Eyes encroaching onto frons, separated on vertex by a distance equal to width of eye. Pronotum 1.2 times longer than wide; sides weakly arcuate, anterior margin broadly rounded; surface densely punctured, interpuncture space shining. Elytra 1.7 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae weakly impressed, punctures large, more deeply impressed; discal interstriae very narrow, slightly convex, each with a median row of fine, erect setae, mostly on posterior half. Declivity convex; striae more deeply impressed than on disc; interstriae as on disc except interstriae 2 with several, small granules near apex; declivital setae slightly more scalelike.

**Female.** Unknown.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** This species is named for Dr. J. E. Rawlins, Carnegie Museum of Natural History, one of the collectors of the holotype and the collector of numerous other species of West Indian Scolytidae.

**Comments.** Adults of this species may be distinguished by the narrowly separated eyes, by the shiny interpuncture spaces on the pronotum, by the narrow elytral interstriae and by the presence of one or two small granules on declivital interstriae 2.

**Genus *Pseudohexacolus* Bright, genus nov.**

With the usual character states of the Hexacolinae (=Ctenophorini) as given by Wood (2007) except procoxae contiguous; antennal club with one visible oblique suture, chitinized on half of length and antennal funicle 4-segmented (pedicel excluded).

**Type species.** *Pseudohexacolus singularis* Bright, sp. nov., monotypic.

**Etymology.** From *pseudo*, Greek for false plus *hexacolus*, a generic name in the Hexacolinae, referring to the placement of this genus in the subfamily. Gender masculine.

**Comments.** This genus is established for one aberrant species that bears some resemblance to genera in the Hexacolinae (tribe Hexacolini) but differs in a number of respects mentioned above. It may be wrongly placed in this subfamily but no other reasonable alternative placement is currently available. The known species will not fit in any of the tribes outlined by Wood (2007) and is here placed in the Hexacolini in order to make possible future placement and to avoid describing another monotypic tribe.

***Pseudohexacolus singularis* Bright, sp. nov.**

Figures 452, 522.

**Type Material.** **HOLOTYPE** (female) labeled: “**GUADELOUPE:** Grande Terre, Pointe de la Grande Vigie, 20 MAY 2012, R. Turnbow” / “**HOLOTYPE** *Pseudohexacolus singularis* D. E. Bright 2016” (RHTC [FSCA]).

**Description (Female).** Length 1.4 mm, 2.9 times longer than wide; pronotum, head and ventral surfaces very dark brown to black, elytra reddish-brown. Frons broadly, shallowly concave from epistomal margin to above upper eye level; surface shining, minutely punctured, with a sparse brush of yellowish setae longer and incurved around periphery. Eyes deeply emarginate opposite antennal insertion. Antennal funicle 4-segmented (pedicel excluded); club 1.2 times longer than wide, with one, partly sclerotized, oblique suture. Pronotum 1.2 times longer than wide, 0.6 times less than length of elytra; sides margined by a sharply elevated, costate line, in dorsal view parallel on basal half, broadly rounded apically, anterior margin bearing a row of eight serrations, these gradually increasing in size to middle; anterior slope with numerous, closely placed, very small asperities or granules; summit at middle not elevated; posterior half shining, glabrous, with numerous close punctures, these separated by a distance less than their diameters. Elytra 1.7 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae (except striae 1) not impressed, punctures two or three times larger than those on pronotum, each puncture bearing a minute seta; discal interstriae narrower than striae, glabrous except near base of declivity. Declivity convex; striae as on disc except punctures smaller; interstriae 2 very slightly impressed, glabrous; remaining interstriae each with a median row of five to seven erect setae, these slightly longer than interstriae. Procoxae contiguous.

**Male.** Unknown.

**Distribution.** This species is known from Guadeloupe.

**Etymology.** From *singularis*, Latin for single or alone.

**Comments.** The female of this species may be recognized by the generic characters summarized above.

### Genus *Pycnarthrum* Eichhoff

*Pycnarthrum* Eichhoff 1878a: 383; Wood and Bright 1992: 384; Bright and Skidmore 2002: 421 (check-list); Bright 2014: 95.

Members of *Pycnarthrum* may be characterized by the 5-segmented antennal funicle (pedicel excluded), by the asymmetrical antennal club with two sutures, by the narrowly separated ventral margins of the eyes, by the weakly to strongly impressed male frons and the convex female frons and by the short scaly vestiture. In addition, the lateral margin of the pronotum is acutely margined, the pronotum is densely punctured and unarmed by asperities and the elytral declivity is convex and unarmed.

Species in this genus are monogynous and phloeophagous. Wood (2007) describes the gallery system.

Sixteen species are included in this genus by Bright and Skidmore (2002); two are recognized from the West Indies. All species occur in tropical America.

### Key to the species of *Pycnarthrum* in the West Indies

1. Vestiture on pronotal disc conspicuous, consisting of a mixture of flattened scales and fine, hairlike setae (Fig. 141); male frons flattened from epistoma to upper level of eyes; epistomal margin not elevated or conspicuous; mature color dark brown to black, elytra often reddish; body stouter, 2.2 times longer than wide; length 1.6–1.8 mm; widely distributed ..... *P. hispidum* (Ferrari) (p. 191)
- Vestiture on pronotal disc inconspicuous, only hairlike setae present (Fig. 142); male frons deeply concave; mature color yellowish-brown; epistomal margin elevated into a fine to distinct, transverse elevation; body slender, 2.3–2.4 times longer than wide; length 1.7–1.9 mm; widely distributed ..... *P. pallidum* (Chapuis) (p. 193)

### *Pycnarthrum hispidum* (Ferrari)

Figures 141, 396, 453, 523.

*Hypoborus hispidum* Ferrari 1867: 19.

*Pycnarthrum hispidum*: Wood and Bright 1992: 384; Bright and Skidmore 1997: 85; Bright and Skidmore 2002: 55; Bright 2014: 95.

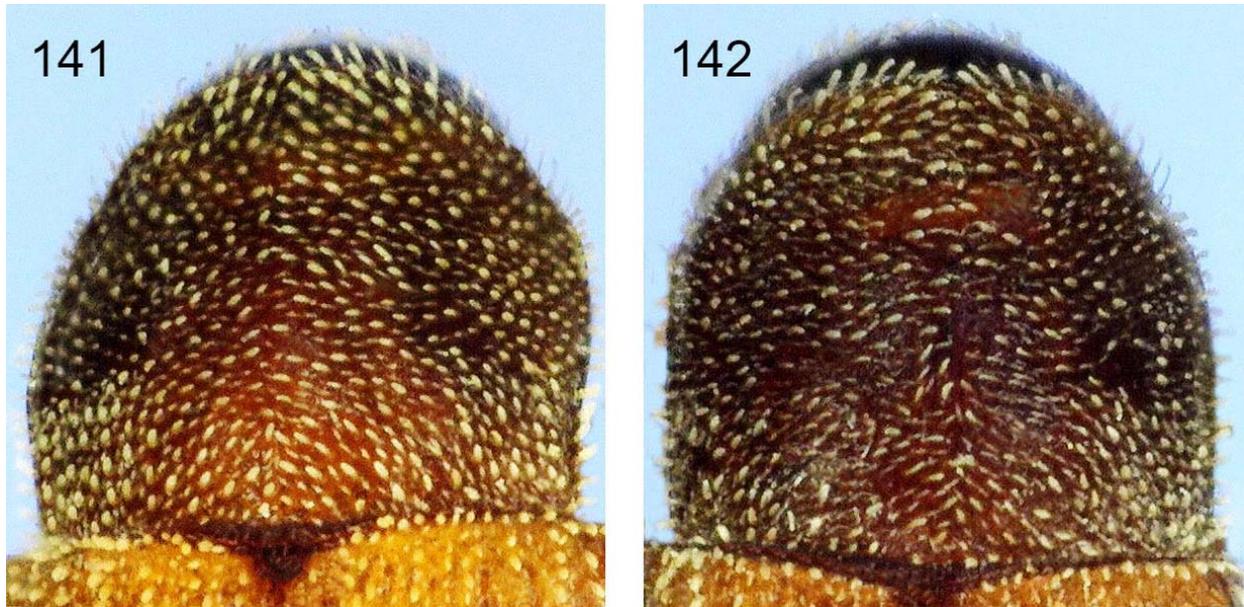
*Pycnarthrum gracile* Eichhoff 1878b: 104 (Cuba).

**Description (Male).** Length 1.6–1.8 mm, 2.2 times longer than wide; elytra light brown, darker on pronotum and head, pubescence yellowish. Frons distinctly flattened to weakly concave from epistoma to upper eye level, faintly inflated opposite antennal insertions; vestiture entirely hairlike, distributed over entire surface. Eyes elongate-oval, narrowly separated in gular area, separated on frontal area by twice their width. Pronotum as long as wide, widest in front of middle; sides somewhat sinuate, definitely margined by a fine raised line; anterior margin very broadly rounded; surface moderately shining, punctures shallow and close; median line not evident; vestiture consisting of short, inconspicuous, hairlike setae intermixed with longer, scalelike setae. Elytra 1.4 times longer than wide; sides parallel on basal two-thirds, narrowly rounded behind; discal striae slightly impressed, more strongly impressed over declivity, punctures large, close; discal interstriae convex, twice as wide as striae, surface smooth, faintly punctured; vestiture consisting of very fine, hairlike strial setae and three rows of interstitial setae, the median row of these much longer, more erect and scalelike, 2.0–3.0 times longer than wide, with rounded ends. Declivity convex, not especially modified except striae more deeply impressed than on disc.

**Female.** Similar in size and proportions to male. Frons evenly convex, very slightly flattened above epistomal margin; surface dull, minutely reticulate and distinctly granulate; vestiture abundant, consisting of short, inconspicuous, hairlike setae and longer, flattened, scalelike setae intermixed, the scalelike setae arising from near each granule. Pronotum and elytra as in male.

**Distribution.** This species is widespread throughout the West Indies and occurs from southern Texas and southern Florida to northern South America. It probably occurs on all islands in the West Indies where figs occur. It is commonly collected at lights.

**Specimens examined.** **ANTIGUA:** Christian Valley, various dates in 1991 and 1992, FAO Insect Survey, blacklight trap (4-FSCA, 9-SBPC). **BAHAMAS: Andros Island,** Forfar Field Station, 8 June 2004, R. Turnbow (3-RHTC); Mangrove Cay, May-June 1917 (17-AMNH, CNCI); Morgan's Bluff, 25 July 2006, R. Turnbow (1-RHTC); Freeport, 20-27 June 1987 (1-USNM); Man O'War Cay, 26.VIII.1971, H. and A. Howden (12-CNCI). **CAYMAN ISLANDS: Grand Cayman,** VI.1992 (6), 19.VIII.1990 (8), 28.VII.1989 (1), 10.IX.1989 (1), 23.IX.1990 (1), P Fitzgerald, blacklight trap (17-FSCA); Georgetown, 29.V.2009, M. C. Thomas, blacklight trap (2-FSCA); **Cayman Brac,** The Creek, 4.XI.1995, E. A. Dilbert, blacklight trap (1-FSCA); Parrot Reserve, 22 and 25 May 2009, R. Turnbow (2-RHTC). **CUBA:** Cienfuegos Province, Jardín Botánico de Cienfuegos, 22.12179°N, 80.32646°W, 73 m, mercury vapor light, 21.V.2013, A. B. T. Smith, F. Cala-Riquelme, A. Deler-Hernández (5-CMNO); Stgo. de la Vegas, 6.VI.1960, M. Barro (3-CNCI); Santiago Province, Dos Caminos, farm field, 20.18043°N, 75.77806°W, 165 m, mercury vapor light, 23-V.2013, A. B. T. Smith, A. Deler-Hernández (1-CMNO); Mapo, VII/73, Los Villas, a la luz (1-CNCI). **DOMINICA:** Rasade, 3.VI.1987, blacklight trap, R. E. Woodruff (1-REWC); Roseau R. Valley, 6.22.2004, C. W. and L. B. O'Brien (2-CNCI); Saint John Parish, Cabrits National Park, blacklight trap, 28 June 2004, R. Turnbow (6-RHTC). **DOMINICAN REPUBLIC:** Boca Chica, 10 m., 23.9.1971, J. and S. Klapperich (12-CNCI); Independencia, ESE of Jimani, uv light, S. of Lago Euriquillo, 20 m, 14 April 1992, M. A. Ivie (5-WIBF); Barahona, 7 km NW Paraiso, 200 m., rainforest remnant, 27.XI-4.XII.91, intercept trap, Masner and Peck (1-CMNO); Barahona, Rio Nizao, 18.02N, 71.12W, 170 m., 25-26 July 1990, C. Young, J. E. Rawlins, S. A. Thompson (1-FMNH); La Altagracia, Parque del Este, Caseta Guaraguao, 4.4 km SE Bayahibe, 18.19.59N, 68.48.42W, 3 m., 26-27 May 2004 / C. Young, J. Rawlins, J. Fetzner, C. Nunez, semi-humid forest near sea, limestone, uv light (1-CMNH); La Altagracia, Parque del Este, 2.9 km SW Boca de Yuma, 18.21.51N, 68.37.05W, 11 m., 28 May 2004 / C. Young, J. Rawlins, J. Fetzner, C. Nunez, semi-humid dry forest, limestone, uv light (7-CMNH); San Pedro, 13 km E Boca Chica, 27 May 1992, R. Turnbow (2-RHTC). **GRENADA:** Saint Andrews, Crochu TV relay, 30.I.1990, J. Telesford, Malaise trap (2-FSCA); Saint Andrew, Mirabeau Agriculture Laboratory, various dates in 1990 and various collectors (50-SBPC, FSCA, CNCI). **GUADELOUPE:** Gourbeyre (2-AMNH); Bas. Ter.: Mahault, Riviere Colas, 80 m, N16°11.26, W61°46.71 / xeric forest, streamside uv trap, 15.V.2012, S. Peck (2-SBPC). **JAMAICA:** Clarendon Parish, Milk River, 25 February 1937, Chapin and Blackwelder (1-USNM); Kingston Parish, Palisadoes, 25 August 1966, Howden and Becker (1-CNCI); Manchester Parish, Porus, 13 February 1937, Chapin and Blackwelder (1-USNM); Saint Andrew Parish, Beverly Hills, September 1961, R. P. Bengry (1-IJCK); Saint Catherine Parish, Bog Walk, 2 February 1937, Chapin and Blackwelder (2-USNM); Guanaboa Vale, 19 January 1958, T. H. Farr (2-IJCK); Spanish Town, 2 February 1937, Chapin and Blackwelder (2-USNM); Saint Elizabeth Parish, Santa Cruz, 24 February 1937, Chapin and Blackwelder (2-USNM); Saint Thomas Parish, Trinity Vale, 28 February 1937, Chapin and Blackwelder (2-USNM); Trelawny Parish, Duncans, 7-23 August 1966, Howden and Becker (6-CNCI); Good Hope, 11-17 August 1966, H. F. Howden (3-CNCI). **MARTINIQUE:** Anse Dufour, Anse l'Ane, 16.VII.2001, D. Roguet, Cauvin, M./Marquet, J. (1-CNCI); **Grand Rivière,** Roguet/Marquet (1-CNCI); Gros Morne, Quartier La Fraicheur, 14.VIII.1997, D. Roguet (3-CNCI); La Lorrain, Morne Maxime, 5.VII.2001, uv light, 169 w, Roguet, Cauvin, M./Marquet (1-CNCI); 4 km SE Le Marin, Morne Aca, 260 m, N14°27.8, W60°53.9 / humid forest hilltop clearing flight intercept trap, 13-28.VI.2012, S. Peck (1-SBPC). **MONTSERRAT:** Cassava Ghaut, Beattie House, 16°45.91'N, 62°12.95'W, 21-30 June 2002, 632 ft., M. A. Ivie, uv light (2-WIBF); Woodlands, Riverside House, 140 ft., 16°45.985'N, 62°13.341'W, 24 July 2005, uv light, WIBF collrs. (3-WIBF); Saint Anthony Parish, Plymouth, 8.VIII.1992, H. V. and R. M. Baranowski, blacklight trap (1-FSCA); Woodlands Beach, 13 Aug 2005, I. A. Foley, uv light (6-WIBF). **NETHERLANDS ANTILLES: Curaçao,** 3.3 km W Julianadorp, 12°09'27"N, 68°59'27"W, blacklight trap, 7 NOV 2014, R. Turnbow (1-RHTC). **Saba,** Windward side, 19.VIII.1992, H. V. and R. M. Baranowski, blacklight trap (2-FSCA, 1-SBPC); Scouts Place Hotel, 402 m, 17.62773°N, 63.23122°W, 12-15 Mar 2008, D. Sikes (2-WIBF); Junction Bud's / Mount Scenery trails, 17.63276°N, 63.23979°W, 687-700 m, 1 Apr-1 May 2008, Malaise, D. S. Sikes et al. (1-WIBF). **PUERTO RICO:** Guánica, VII.1996, M. Canals, ex: light trap (1-CNCI); Guaynabo, various dates in 1995 and 1996, J. Torres, light trap (39-CNCI); Isabella, IV/24/30 (4-AMHN); Mona Island, Sendero Capitán, 50 m, at Hg and uv lights, N18°05'29", W67°56'16", N. Franz, V.23.2008 (1-UPRC); Quebradillas, 6.3 km SSE La Casa de Piedra, east side of Lago de Guajataca, 18.22.42N, 66.54.22W, 200 m., 15 June 1996, C. Young, J. Rawlins, R. Davidson, W. Zanol, M. Klingler, S. Thompson (1-CMNH); La Parguera, July 28, 1969, H. and A. Howden (2-CNCI). **SAINT KITTS-NEVIS: Saint Kitts,** W. Basseterre, Flamenco Disco, 27.VIII.1001, blacklight trap, R. E. Woodruff (1-SBPC). **SAINT LUCIA:** Anse La Raye, Anse Galet, 1 km. SSW Anse La Raye, 13.56N,



Figures 141–142. Pronotal vestiture of *Pycnarthrum* spp. 141) *P. hispidum*. 142) *P. pallidum*.

61.03W, 50 m. / 21–30 June 1991, J. E. Rawlins, S. A. Thompson (5–FMNH); Escap Community, Micoud, 6–8.VII.2009, blacklight, D. E. Bright (2–CNCI), same locality, R. C. Winton (2–WIBF), same locality, M. A. Ivie (4–WIBF); nr. Micoud, trail toward Fond Bay, 13°49'48"N, 60°53'42"W, 15 m, A. R. Cline, S. D. Gaimari, various dates 2009 (8–CSCA, CNCI, WIBF); 11 km W Dennerly, Barré de L'Isle Trail, 26.VII.2007 / uv light, S. and J. Peck (1–SBPC); Mon Repos, Fox Grove Inn, 90 m, 8–18.VII.2007 (6–SPBC); Union Agricultural Station, 11.IX.1986, Crop Protection Section (1–FSCA); Marigot Bay, 22.VIII.1988, M. Paul, blacklight trap (2–FSCA). **SAINT VINCENT AND THE GRENADINES: Bequia Island**, Cinnamon Garden, N13. 00'50" W61.14', dry scrub woodland, uv trap, 3.VIII.08, 80 m, S. Peck and M. de Silva (1–SBPC). **Saint Vincent**, Emerald Valley Hotel, E. of Layou, 27–29.VIII.2006, uv light, S. and J. Peck (2–SBPC); Wallilabou Bay, hotel grounds, 18.VIII.2006, coastal uv, S. and J. Peck (6–SBPC); Orange Grove (1.5 mi. E Kingston) (3–USNM); Island record only, 9–15 Aug. 1981, R. S. Miller (1–WIBF). **VIRGIN ISLANDS (BRITISH): Virgin Gorda**, Spring Bay, 17.X.1992, H. V. and R. M. Baranowski, blacklight trap (1–FSCA).

**Comments.** Adults of this species may be recognized by the flattened to weakly impressed male frons, by the stout interstitial bristles, by the stout, plumose ground vestiture on both the elytra and pronotum and by the color as mentioned in the key to species.

*Ficus* is listed as a host plant by Vázquez et al. (2003) for this species in Cuba.

This species is extremely common throughout its distribution. It is commonly collected in large numbers at lights.

### *Pycnarthrum pallidum* (Chapuis)

Figure 142.

*Nemobius pallidum* Chapuis 1869: 41 (Guadeloupe).

*Pycnarthrum pallidum*: Wood and Bright 1992: 385; Bright 2014: 96.

*Pycnarthrum reticulatum* Schedl 1940: 335 (Chiapas, Mexico).

**Description (Male).** Length 1.7–1.9 mm, 2.3–2.4 times longer than wide; light brown, pubescence yellowish. Frons deeply, evenly, broadly concave from epistoma to upper eye level, surface reticulate except just above epistomal margin, margin of concavity fringed with elongate, flattened setae. Eyes elongate-oval, narrowly separated in gular area, separated on frontal area by twice their width. Antennal club 1.8 times longer than wide, first two sutures slightly arcuate, suture 3 strongly arcuate. Pronotum as long as wide, widest in front of middle; sides evenly arcuate, definitely margined by a fine, raised line,

anterior margin broadly rounded; surface moderately shining, punctures shallow, close; median line faintly evident; vestiture consisting of short, hairlike, yellowish setae arising from each puncture. Elytra 1.3 times longer than wide; sides parallel on basal two-thirds, narrowly rounded behind; discal striae slightly impressed, more strongly impressed over declivity, punctures of moderate size, close; discal interstriae convex, 2.0–3.0 times wider than striae, surface smooth, faintly punctured; vestiture consisting of very fine, strial setae and usually three rows of short, yellowish interstitial setae, the median of these longer, more abundant and scalelike, 4.0–5.0 times longer than broad with acuminate distal ends. Declivity convex, not especially modified except striae more deeply impressed than on disc.

**Female.** Similar in size and proportions to male. Frons evenly convex to just above epistoma, flattened or very slightly impressed on epistoma; surface dull, reticulate except for a small smooth area just above epistomal process, punctures close, shallow; vestiture abundant, consisting of short, yellowish setae arising from each puncture. Pronotum and elytra as in male.

**Distribution.** This species occurs in Antigua, Jamaica, Guadeloupe, Barbados, Saint Vincent and Grenada. It is known from southern Mexico to Venezuela, Trinidad and the Galapagos Islands. It probably occurs throughout the West Indies.

**Specimens examined.** **ANTIGUA:** Christian Valley, various dates in 1991 and 1992, FAO Insect Survey, blacklight traps (5–SBPC). **GRENADA:** Saint Andrews, Mirabeau Agriculture Laboratory, various dates in 1990 and various collectors, light trap (12–SBPC). **GADELOUPE:** Island record only (2–type series); Pointe-à-Pitre, Morne Joliviere, 12–31.VII.1999, uv light, 160 w, D. Roguet (1–CNCI). **JAMAICA:** Trelawny, Barbecue Bottom, VIII.13.1966, H. F. Howden (1–CNCI); Duncans, VIII.3.1966, A. T. Howden (1–CNCI); Good Hope, VIII.11.1966, H. F. Howden (1–CNCI); Mandeville, 2.VII.1970, uv light trap (1–NHML); Trinityville, 11.28.37, Chapin and Blackwelder (1–USNM). **PUERTO RICO:** San Juan, San Juan, Site 2, EDRR, 18.38911, 66.05533, 18. VI-2.VII.2013, C. Torres and H. Rivera (1–MSUC). **SAINT VINCENT AND THE GRENADINES:** **Saint Vincent,** Vermont Nature Trail, 7 mi. E Buccament, 11.VI.2007, 370 m / rainforest flight intercept trap, S. and J. Peck (7–SBPC).

**Records from literature.** **BARBADOS:** Island record only (Peck 2009a).

**Comments.** Adults of this species may be readily distinguished from those of *P. hispidum* by the male frons which is deeply, broadly concave from the epistoma to the upper level of eyes, by the shorter and narrower, often hairlike, elytral and pronotal scales and often by the pale yellowish-brown color.

Adults of this species were found under the bark of breadfruit and fig in Barbados (Peck 2009a).

### Genus *Scolytodes* Ferrari

*Scolytodes* Ferrari 1867: 77; Wood and Bright 1992: 387; Bright and Skidmore 2002: 423 (checklist); Bright 2014: 96.

Members of this genus may be distinguished by the 4- or 5-segmented antennal funicle (pedicel excluded), by the acutely margined lateral margin of the pronotum, by the pronotal summit either not evident or placed at or near the middle of the pronotal disc, by the fine raised line on the elytral bases and by the entirely punctured or asperate anterior slope of the pronotum.

This is a large genus, with over 180 species reported from tropical America (Bright and Skidmore 2002). Twenty-six species are herein treated from the West Indies. Species identification is exceedingly difficult because many species are known only by the type or type series and many species are very similar in appearance.

Most species are monogynous and occur in a variety of habitats, such as under bark, in leaf petioles (especially in *Cecropia* sp.), or in the pith of small branches.

Wood (2007), on advice from an unnamed Latin scholar, treated this genus as feminine in gender and changed the species names he treated to reflect this opinion. This action was contrary to the International Code of Zoological Nomenclature which states (Section 30.1.4.4) “Generic names ending in ... *odes* ... should be considered masculine unless the original author expressly treats the name as feminine”. In the absence of any such expression by Ferrari, the name should be treated as masculine and is so treated herein. Alonso-Zarazaga and Lyal (2009) reached the same conclusion.

Key to the species of *Scolytodes* in the West Indies

1. Pronotum punctured from base to anterior margin, sometimes with a few very faintly elevated wrinkles near anterior margin ..... **2**  
 — Anterior half of pronotum distinctly asperate, roughened, granulate or with weakly elevated, transverse ridges, punctured or roughened on basal half or less ..... **8**
- 2(1). Pronotal surface dull, very densely reticulate, punctures indistinct, minute, widely separated; each elytral interstriae with several rows of short, scalelike setae; female frons deeply, longitudinally concave, densely reticulate, with a short, shining, median, longitudinal elevation on lower half; length 2.1–2.4 mm; Dominican Republic .. ***S. bellus* Bright, sp. nov.** (p. 201)  
 — Pronotal surface brightly shining, smooth or with very sparse, minute lines between punctures, punctures distinct to indistinct, larger, closer; each elytral interstriae with a median row of long, erect setae or elytra entirely glabrous ..... **3**
- 3(2). Posterior face of anterior tibiae with a minute granule just behind tarsal insertion and below large lateral spine; black in color; length 2.0 mm; Saint Vincent and the Grenadines .....  
 ..... ***S. aquilus* Bright, sp. nov.** (p. 198)  
 — Posterior face of anterior tibia without a small spine or granule; variable in size and color ... **4**
- 4(3). Anterior half of pronotal disc with very low, shining, transverse lines and faint punctures, posterior half with widely separated punctures; elytra entirely glabrous; female frons flattened on an oval area from epistoma to just below upper level of eyes, with short setae, all of equal length; male frons with two oval or round impressed areas above epistomal margin; length 1.7–2.0 mm; Saint Vincent and the Grenadines, Grenada .... ***S. peckorum* Bright, sp. nov.** (p. 211)  
 — Entire dorsal surface of pronotum with small to minute punctures, surface between punctures smooth or very finely, minutely reticulate; elytra with distinct interstitial setae; female frons not as above ..... **5**
- 5(4). Length 2.0 mm; interpuncture space on posterior portion of pronotum shining, very smooth or very weakly reticulate, with very small, widely separated, impressed punctures; female frons flattened or weakly impressed from epistoma to upper eye level, with abundant, equal length setae; body black or yellowish-brown ..... **6**  
 — Length greater than 2.0 mm; interpuncture space on posterior portion of pronotum dull or shining, punctures variable in size and depth; female frons variable, not as above; body color variable ..... **7**
- 6(5). Body yellowish-brown; interpuncture space on posterior portion of pronotum very weakly reticulate, with almost indiscernible, minute punctures; female frons flattened; Saint Vincent and the Grenadines ..... ***S. politus* Bright, sp. nov.** (p. 212)  
 — Body black; interpuncture space on posterior portion of pronotum very smooth, with distinct, very small, minute punctures; female frons weakly convex; Guadeloupe .....  
 ..... ***S. plesiopolitus* Bright, sp. nov.** (p. 211)
- 7(5). Length 2.2–2.5 mm; punctures on pronotal disc small but distinct, more deeply impressed, interpuncture space smooth, shining; male frons with a large, transverse swelling above epistoma; female frons flattened to weakly concave, with a brush of long, dense setae, all of equal length on epistoma, extending over base of mandibles; Cuba; in *Cecropia* petioles .....  
 ..... ***S. torresi* Bright, sp. nov.** (p. 218)  
 — Length 2.0–2.1 mm; interpuncture space on posterior portion of pronotum strongly, minutely reticulate, dull; female frons concave from epistomal margin to well below upper level of eye, with a brush of dense, yellowish setae, these longer on periphery; body black to very dark reddish-black; Dominica ..... ***S. obtusiceps* Bright, sp. nov.** (p. 210)

- 8(1). Length 1.1 mm; elytra glabrous except for a few, erect setae in interstriae 1, 3, 5 and 7; Guadeloupe, Martinique ..... ***S. atomus* Bright** (p. 200)  
 — Length greater than 1.2 mm; elytral characters variable, not as above ..... **9**
- 9(8). Protibia with a small granule on posterior face at apex below large spine 1 or 2 (as in Fig. 370) ..... **10**  
 — Protibia lacking a small granule or tubercle on posterior face (as in Fig. 369) ..... **15**
- 10(9). Elytral interstriae 10 usually carinate and extends beyond level of metacoxae to or near base of declivity (Fig. 159) ..... **11**  
 — Elytral interstriae 10 carinate or not, if carinate then ridge extends to level of metacoxae (Fig. 157) ..... **13**
- 11(10). Punctures on posterior half of pronotum separated by a distance equal to or slightly greater than diameter of puncture; length 1.5–1.7 mm; Puerto Rico .....  
 ..... ***S. puertoricensis* Bright and Torres** (p. 214)  
 — Punctures on posterior half of pronotum separated by a distance much less than diameter of puncture ..... **12**
- 12(11). Color uniformly light brown; length 1.4–1.7 mm; Antigua, Guadeloupe, Montserrat, Saint Kitts ..... ***S. iviei* Bright, sp. nov.** (in part) (p. 204)  
 — Color uniformly black; length 1.7 mm; Puerto Rico .....  
 ..... ***S. anthracinus* Bright, sp. nov.** (p. 198)
- 13(9). Posterior half of pronotum minutely reticulate between punctures, punctures small, weakly impressed; female frons with a dense brush of long, yellowish setae extending from vertex to mandibles and completely concealing the surface; male frons convex, weakly impressed above epistomal margin; striae 1 slightly impressed at declivital base; length 1.2–1.5 mm; Cuba to Saint Vincent ..... ***S. notatus* (Eggers)** (in part) (p. 207)  
 — Posterior portion of pronotum shining or minutely reticulate, punctures larger, distinctly impressed; male frons strongly convex, with a deep, transverse impression above epistoma, sometimes with a pair of very deep, round impressions just above epistoma and extending to above level of antennal insertion, these impressions slightly smaller than antennal club and separated by a narrow to broad septum; female frons with a distinct, median, longitudinal, glabrous, smooth area bordered by brush of long setae ..... **14**
- 14(13). Length 1.9–2.5 mm; Guadeloupe ..... ***S. oblongus* (Eggers)** (p. 208)  
 — Length 1.2–1.6 mm; Puerto Rico to Saint Vincent ..... ***S. pseudobicolor* (Eggers)** (p. 213)
- 15(9). Elytral interstriae 10 usually carinate and extends beyond level of metacoxae to or near base of declivity (as in Fig. 159) ..... **16**  
 — Elytral interstriae 10 carinate or not, if carinate, then carina extends to level of metacoxae or very slightly beyond (as in Fig. 157) ..... **23**
- 16(15). Posterior portion of pronotum with distinct, rounded granules, punctures obsolete but distinct on lateral areas; female frons with a pair of large, oval, shining swellings surrounded by a large oval area of minute punctures and very short setae, epistomal lobe large, shining, fringed by long setae; male frons convex, dull, minutely reticulate and deeply punctured; length 2.5–3.0 mm; Dominican Republic, Cuba ..... ***S. cubensis* (Schedl)** (p. 202)  
 — Posterior portion of pronotum with very fine to large, distinct punctures ..... **17**
- 17(16). Punctures on posterior half of pronotum very small, very weakly impressed, separated by a distance much greater than their diameters ..... **18**

- Punctures on posterior half of pronotum large, deeply impressed, separated by a distance less than their diameters ..... **19**
- 18(17). Elytra glabrous, sometimes with one or two very short setae present in lateral interstriae; punctures on posterior surface of pronotum separated by a distance equal to diameter of puncture; female frons evenly pubescent on a small oval area, male frons transversely impressed above epistoma, sparsely pubescent; length 1.8–2.1 mm, 1.9 times longer than wide; Dominican Republic, Puerto Rico, Saint Lucia ..... ***S. atlanticus* Bright and Torres** (p. 200)
- Elytra with each interstriae with a median row of long, erect setae, row either extends from near base of elytra to apex or setae present on declivital interstriae; punctures on posterior surface of pronotum very small to obsolete, separated by a distance much greater than diameter of puncture; female frons slightly concave, pubescent over entire surface; male frons with a distinct, low, transverse swelling just above epistoma; length 2.1–2.3 mm; in *Cecropia* petioles; Dominica, Guadeloupe, Saint Lucia ..... ***S. nitidissimus* (Eggers)** (p. 206)
- 19(17). Elytral declivity slightly impressed along suture; elytral surface with abundant, short, recumbent setae and several much longer setae in declivital interstriae 3, 5 and 7 and along lateral margin; head and ventral portion of thorax black, dorsal surfaces of pronotum and elytra and ventral portion of abdominal sternites reddish; length 2.4 mm; Cayman Islands ..... ***S. steineri* Bright, sp. nov.** (p. 215)
- Elytral declivity evenly convex; elytral surface glabrous or with short, interstriae setae; body light yellowish-brown, often with anterior portion of pronotum darker; length 1.3–1.8 mm ...  
..... **20**
- 20(19). Anterior portion of pronotum with distinctly elevated, transverse ridges, these often extending completely across pronotum or may be slightly shorter; male frons convex, transversely impressed above epistoma, setae absent; length 1.5 mm; Dominican Republic ..... ***S. aridus* Bright, sp. nov.** (p. 199)
- Anterior portion of pronotum with distinct asperities; male and female frons variable ..... **21**
- 21(20). Female frons mostly concealed by a dense brush of setae which arise on the vertex and extend downward to near epistomal margin; interstitial setae shorter than interstitial width; length 1.8 mm; Puerto Rico ..... ***S. longisetum* Bright, sp. nov.** (p. 206)
- Female frons with abundant setae surrounding a shining, flat to weakly impressed central portion  
..... **22**
- 22(21). Antennal club elongate-oval, 2.0 times longer than wide and as long as scape; pronotal asperities distinctly elevated, sometimes several asperities coalescing forming elevated, elongate, transverse ridges; central shining portion of female frons flat to very weakly, longitudinally impressed; length 1.5–1.7 mm; generally distributed ..... ***S. glaber* (Eichhoff)** (p. 203)
- Antennal club more nearly circular, as long as wide, shorter than scape; pronotal asperities very weakly elevated, most individually separated; central shining portion of female frons distinctly longitudinally impressed; length 1.4–1.7 mm; Antigua, Guadeloupe, Montserrat, Saint Kitts-Nevis ..... ***S. iviei* Bright, sp. nov.** (in part) (p. 204)
- 23(15). Male frons convex, deeply, transversely impressed above epistoma; female frons with an oval brush of short, yellowish setae; posterior half of pronotum minutely reticulate, with small, widely separated punctures; length 1.5 mm; Netherlands Antilles (Saba) ..... ***S. sabaensis* Bright, sp. nov.** (p. 215)
- Male frons weakly impressed above epistoma; female frons with long setae; length greater than 1.2 mm ..... **24**
- 24(23). Posterior half of pronotum minutely reticulate between punctures, punctures small, weakly impressed; female frons with a dense brush of long, yellowish setae extending from vertex to

- mandibles and completely concealing the surface; male frons convex, weakly impressed above epistomal margin; striae 1 slightly impressed at declivital base; length 1.2–1.5 mm; Cuba to Saint Vincent ..... *S. notatus* (Eggers) (in part) (p. 207)
- Posterior half of pronotum with large, deeply impressed punctures, these separated by a distance much less than their diameter, interpuncture space shining; female frons with a large, broad, circular, median, smooth, glabrous, shining area occupying median half of frons, surrounding surface finely, densely punctured with moderately long, incurved setae; male frons with one to three small granules on upper margin of impression above epistoma; striae 1 not impressed at declivital base; length 1.8–2.3 mm; widely distributed ..... *S. striatulus* Wood (p. 216)

***Scolytodes anthracinus* Bright, sp. nov.**

Figure 145.

**Type Material.** HOLOTYPE (female) labeled: “PUERTO RICO: Carib. N. F., El Toro Negro D., K19H9, Hwy. 143, July 22, 1979, G. B. Marshall” / “HOLOTYPE *Scolytodes anthracinus* D. E. Bright 2016” (CNCI).

**Description (Female).** Length 1.7 mm, 2.4 times longer than wide; uniformly black. Frons weakly, longitudinally concave from epistoma to just below level of upper margin of eyes, laterally to level of antennal insertions; surface moderately shining, reticulate, finely punctured, periphery of concave area with a brush of incurved setae, a few scattered setae present in concave area; epistomal margin straight with a median brush of long setae extending almost to tip of mandibles. Antennal club oval, slightly longer than wide, with two weakly arcuate sutures. Pronotum as long as wide, widest near middle; sides straight on basal half, broadly rounded anteriorly; anterior margin unarmed; anterior one-third of surface with numerous, slightly elevated, transverse asperities, surface between asperities shining, minutely reticulate; posterior half moderately shining, minutely reticulate, with closely placed, deeply impressed punctures, most of these separated by a distance less than their diameters. Elytra 1.5–1.6 times longer than wide; sides parallel on basal three-fourths; apex broadly rounded; striae, except 1, not impressed, punctured in even, regular rows, punctures moderately large, more deeply impressed than those on base of pronotum; interstriae shining, with a median row of distinct punctures, these slightly smaller and slightly shallower than those in striae; each stria and interstria puncture bearing a very short seta equal to or shorter than diameter of puncture; interstriae 10 acutely, slightly elevated from base to base of declivity. Declivity evenly convex; striae and interstriae as on disc except striae slightly more deeply impressed, punctures smaller. Anterior tibia with a small tubercle on posterior face.

**Male.** Unknown.

**Distribution.** This species is known from Puerto Rico.

**Etymology.** From *anthracinus*, Latin for coal-black, referring to the color of the adult.

**Comments.** Females of this species may be distinguished by the presence of a very small granule on the posterior face of the protibia below the base of the larger spine on the outer margin, by the uniformly black color and by the broadly, shallowly concave female frons with a border of moderately long, slightly incurved setae. The male is unknown.

***Scolytodes aquilus* Bright, sp. nov.**

Figure 144.

**Type Material.** HOLOTYPE (female) labeled: “SAINT VINCENT: Hermitage Forest, E. of Spring Village, 15–27.VIII.2006, forest edge FIT and Malaise trap, 348 m, S. and J. Peck” / “HOLOTYPE *Scolytodes aquilus* D. E. Bright 2016” (SBPC [CNCI]).

**Female.** Length 2.0 mm, 2.3 times longer than wide; black. Frons flattened on lower half from epistoma to a level even to middle of eye; surface of flattened area shining, punctured and with abundant,

downward pointing setae, remainder of surface shining, with scattered, large punctures; epistoma straight, with a fringe of long setae. Antennal club oval, 1.3 times longer than wide, suture 1 straight, suture 2 obliquely procurved, apical one-third of club densely pubescent. Pronotum as long as wide, widest at middle; entire dorsal surface shining, faintly reticulate, glabrous, with densely placed, fine, weakly impressed minute punctures, asperities absent but very fine, very weakly elevated lines can be detected on anterior portion. Elytra 1.4 times longer than wide; sides parallel, apex broadly rounded; discal striae not impressed, punctured in regular rows, punctures moderately large, weakly impressed; discal interstriae flat, as wide striae, with punctures as large as those in striae, each interstriae with a median row of fine erect setae; interstriae 10 acutely elevated on a fine line extending from elytral base to base of declivity. Declivity broadly convex, striae and interstriae as on disc except striae slightly more distinctly impressed and each interstriae with a median row of fine granules. Protibia with a small granule on posterior face just under spine 2; apex with a small, slightly curved terminal spine and a slightly smaller spine at anterior apical angle and without granules on anterior margin.

**Male.** Unknown.

**Distribution.** This species is known from Saint Vincent.

**Etymology.** From *aquilus*, Latin for dark-colored or black, referring to the color of the adult.

**Comments.** The female of this species may be recognized by the completely punctured pronotal surface without elevated asperities, by the black color, by the single, median row of setae in each elytral interstriae, by the presence of small granules in each declivital interstriae and by the features of the frons as described above. The male is unknown.

***Scolytodes aridus* Bright, sp. nov.**

Figure 143.

**Type Material.** HOLOTYPE (male) labeled: “DOMINICAN REPUBLIC: Monte Cristi, 5 km NNE Botoncillo, 50 m, 19–46N, 71–24W” / “29–30 November 1992, R. Davidson, M. Klingler, S. Thompson, J. Rawlins, arid thorn shrub” / “HOLOTYPE *Scolytodes aridus* D. E. Bright 2016” (CMNH).

**Description (Male).** Length 1.5 mm, 1.8 times longer than wide; reddish-brown. Frons convex, weakly flattened from epistoma to slightly above level of antennal insertion; surface moderately shining, minutely reticulate, with scattered, weakly impressed punctures, these separated by a distance slightly greater than diameter of punctures, lower portion from epistoma to below upper margin of eyes with moderately abundant, erect setae; epistomal margin straight, transverse, median portion with a dense brush of downward directed, yellowish setae, these extending to tips of mandibles. Antennal club oval, 2.0 times longer than wide, densely pubescent along margins, sutures obscure. Pronotum as long as wide, widest at middle; sides straight, parallel on basal half; anterior margin broadly rounded, acutely elevated; anterior slope bearing long, acutely elevated, curved ridges, some of these extending at least halfway across surface, some extending completely across surface; posterior portion moderately shining, deeply, densely punctures, punctures separated by a distance much less than puncture diameter. Elytra 1.4 times longer than wide; sides straight on basal three-fourths, apex somewhat narrowly rounded; discal striae not impressed, punctured in even rows, punctures deeply impressed, each with a very short seta shorter than puncture diameter; discal interstriae as wide as striae, with a median row of punctures slightly smaller than strial punctures, each with a short seta similar to those in striae. Declivity convex, similar to disc except interstriae 1 very slightly elevated.

**Female.** Unknown.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** From *aridus*, Latin for dry or arid, referring to the host ecology.

**Comments.** Only the male of this species is known. It can be readily recognized by the long, transverse, slightly elevated ridges on the anterior portion of the pronotum, by the large, close, deeply impressed punctures on the posterior half of the pronotum and by the very short setae in both the striae and interstriae of the elytra.

***Scolytodes atlanticus* Bright and Torres**

Figures 146, 369, 397, 454, 524.

*Scolytodes atlanticus* Bright and Torres 2006: 396.

**Description (Female).** Length 1.8–2.1 mm, 1.9 times longer than wide; very dark reddish-brown to black, lighter reddish-brown on basal half of pronotum, legs and antenna. Frons weakly convex, very weakly impressed in a triangular or oval area just above epistomal margin and with a very weak, longitudinal carina on lower half of impression; surface of impression very finely, densely punctate, with a sparse brush of short, erect, yellowish setae; epistomal process slightly extended in median area, with short setae. Antennal funicle 4-segmented (pedicel excluded); club oval, 1.8 times longer than wide, with two transverse sutures and one arcuate suture at tip, each marked by rows of setae, suture 1 chitinized at lateral one-quarter. Pronotum 1.15 times wider than long; sides weakly, broadly arcuate on basal three-fourths, broadly rounded anteriorly; anterior margin unarmed; anterior half of surface with numerous, very slightly elevated, transverse, shining elevations, surface between elevations shining, smooth, with minute reticulation; posterior half smooth, dull, with closely placed, shallow punctures, these separated by a distance equal to 2.0–3.0 times their diameters; interpuncture space minutely reticulate. Elytra 1.3 times longer than wide, 1.4 times longer than pronotum; sides weakly arcuate on basal three-fourths; apex broadly rounded; entire surface densely, minutely punctured, striae not readily discernible except for 1 which is very slightly impressed and very weakly visible; punctures very small, weakly impressed, each with a minute seta. Declivity evenly convex, surface as on disc except interstriae 3 and 9 very slightly elevated and joined at apex. Anterior tibia without special modification, without a tubercle on posterior face.

**Male.** Similar in size and color to female. Frons evenly convex, weakly impressed just above epistoma, surface shining, micro-reticulate, with scattered punctures; vestiture absent.

**Distribution.** This species is known from Puerto Rico, the Dominican Republic and Saint Lucia.

**Specimens examined.** **DOMINICAN REPUBLIC:** Province Hato Mayor, Par. Nac. Los Haitises, W. of Sabana de la Mar, Bosque Humido, 16 Apr-01 Jul 1992, M. A. Ivie, flight intercept trap (2–WIBF). **PUERTO RICO:** Guaynabo, III.2000, VI.2000, VII.2000, VIII.2000, J. Torres / ex light trap (12–CNCI, USNM). **SAINT LUCIA:** Anse La Raye, Anse Galet, 1 km SSW Anse La Raye, 13.56N, 61.03W, 50 m. / 21–30 June 1991, J. E. Rawlins, S. A. Thompson (1–CMNH); Barre de L'Isle, 13.93682°N, 60.95936°W, 340 m, 06 JULY 2009, M L Gimmel, at uv light (2–WIBF); Mon Repos, Fox Grove Inn, 90 m, 20–28.VII.2007 / uv light, S. and J. Peck (4–SBPC, CNCI).

**Comments.** Females of this species may be recognized by the flattened frons which bears a triangular or oval brush of short setae, by the color pattern which is very dark reddish-brown to black and lighter reddish-brown on basal half of the pronotum, legs and antenna and by the densely, randomly punctured elytra on which the striae are entirely to almost entirely indiscernible. On several of the paratypes the elytral striae are vaguely visible. The male can be recognized by the convex frons, which is shining, micro-reticulate, sparsely punctured and without setae.

In the original description of this species, I mentioned that the holotype, paratype and five paratypes would be deposited in the USNM. However, all the Puerto Rican specimens listed above were collected by J. A. Torres and are all deposited in the CNCI. The holotype, allotype and eight paratypes plus two additional specimens not included as paratypes are in the CNCI; two paratypes are in the USNM.

***Scolytodes atomus* Bright, sp. nov.**

Figure 147.

**Type Material.** **HOLOTYPE** (female) labeled: “W. I.: **MARTINIQUE**: 4 km SW Le Marin, Morne Aca, 260 m, N14°27.8, W60°53.9” / “Humid forest hilltop clearing FIT, S. Peck, 13–28.VI.2012” / “HOLOTYPE *Scolytodes atomus* D. E. Bright 2016” (SBPC [CNCI]). **ALLOTYPE** labeled: “W. I.: **GUADELOUPE**, Bas. Ter.: Pigeon Trace, Poirier, N16°08.83, W61°45.22” / “Humid forest FIT, 350 m, 14–31.V.2012” / “ALLOTYPE *Scolytodes atomus* D. E. Bright 2016” (CNCI).

**Description (Female).** Length 1.1 mm, 2.5 times longer than wide; light brown. Frons convex, very slightly transversely impressed above epistoma to slightly above level of antennal insertion; surface dull, minutely reticulate, with scattered, very fine setae. Antennal club oval, 2.0 times longer than wide, sutures 1 and 2 procurved, apical two-thirds of club densely pubescent. Pronotum 1.1 times longer than wide, widest on middle; sides weakly arcuate, anterior margin broadly rounded, with six very low serrations; anterior portion densely asperate, asperities weakly elevated, much longer than their height; posterior surface moderately shining, minutely reticulate, with exceedingly fine, shallow punctures. Elytra 1.2 times longer than wide; sides parallel, apex broadly rounded; discal striae not impressed, punctured in regular rows, punctures small, weakly impressed; discal interstriae brightly shining, flat, twice as wide as striae, each with a median row of very small punctures half as large as those in striae, giving appearance of a densely, somewhat randomly punctured surface, surface glabrous except interstriae 1, 3, 5 and 7 bear a few, erect, fine setae: interstriae 10 acutely elevated on a fine line extending from elytral base to base of declivity. Declivity broadly convex, striae and interstriae as on disc except striae 1 slightly impressed. Protibia with an extremely small granule on posterior face, apex with a large, strongly curved terminal spine and a slightly smaller spine at anterior apical angle; two small granules on anterior margin.

**Male.** Similar to female except frons more distinctly and broadly flattened above epistoma, anterior margin of pronotum with a fine, acute ridge without serrations.

**Distribution.** This species is known from Martinique and Guadeloupe.

**Etymology.** From *atomus*, Latin for very small.

**Comments.** The adults of this species are the smallest in this genus so far known from the West Indies. That feature, coupled with the nearly glabrous elytra and the convex, minutely reticulate frons, should ensure recognition of this species.

***Scolytodes bellus* Bright, sp. nov.**

Figure 148.

**Type Material.** **HOLOTYPE** (female) labeled: “**DOMINICAN REPUBLIC**: Province Barahona, nr. Filipinas, Larimar Mine; 20–26.VI.1992, R. E. Woodruff and P. E. Skelley, at lights” / “HOLOTYPE *Scolytodes bellus* D. E. Bright 2016” (FSCA). **ALLOTYPE** labeled: “**DOMINICAN REPUBLIC**: Barahona, 2 km E. Payoso, mv and blacklight, 13 July 1996, R. Turnbow” / “ALLOTYPE *Scolytodes bellus* D. E. Bright 2016” (RHTC [FSCA]).

**Description (Female).** Length 2.1–2.4 mm, 2.1 times longer than wide; light reddish-brown, slightly darker on anterior portion of pronotum. Frons longitudinally impressed from epistoma to upper level of eyes and from eye to eye, lateral margin of impression acutely elevated from level of antennal insertion to upper eye level; surface very densely, micro-reticulate and glabrous except on a longitudinal, median, shining, narrow, smooth space extending from epistomal margin to slightly above level of antennal insertion, margin of impression with a fringe of long setae, those arising on vertex extend downward one-third of distance to epistoma; epistoma straight, with a fringe of long setae. Antennal club oval, 2.0 times longer than wide, suture 1 straight, suture 2 procurved, apical two-thirds of club densely pubescent. Pronotum as long as wide, widest on basal fourth; entire dorsal surface dull, minutely reticulate, with densely placed, very fine, weakly impressed minute punctures and short, fine, semirecumbent setae, asperities absent. Elytra 1.3 times longer than wide; sides parallel, apex broadly rounded; discal striae not impressed, punctured in regular rows, punctures moderately large, weakly impressed; discal interstriae

flat, twice as wide as striae, with randomly placed, small punctures and randomly placed, erect, scalelike setae, these in two or more rows in each interstriae; interstriae 10 acutely elevated on a fine line extending from elytral base to base of declivity. Declivity broadly convex, striae and interstriae as on disc except striae slightly more distinctly impressed. Protibia without a small granule on posterior face; apex with a large, strongly curved terminal spine and a slightly smaller spine at anterior apical angle; two small granules on anterior margin.

**Male.** Similar to female except length 2.1 mm and frons evenly convex above eye level, flattened below, with two vague, circular impressions at lateral margins near level of antennal insertions and epistomal margin weakly elevated, smooth and shining.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** From *bellus*, Latin for beautiful, referring to the general appearance of the adult.

**Comments.** Adults of this species may be distinguished by the smooth, punctate dorsal surface of the pronotum, without asperities or other surface elevations, by the characters of the female and male frons as described above, by the larger size.

### ***Scolytodes cubensis* (Schedl)**

Figure 149.

*Hexacolus cubensis* Schedl 1972: 56.

*Scolytodes cubensis*: Wood and Bright 1992: 391.

**Description (Female).** Length 2.5–3.0 mm, 2.0–2.1 times longer than wide; elytra black or red or bicolored red and black, pronotum often black on anterior half and red on posterior half or various bicolored combinations, head usually black or bicolored, ventral surfaces usually black but abdominal sternites often light red. Frons convex in general contour, with a large, oval, densely and minutely punctured median area occupying central half, surrounded by a narrow, shining, glabrous border; median part of densely punctured area with two, narrowly oval, glabrous, shining, elevated, narrowly separated calluses; lower portion of densely punctured area smooth, impunctate, glabrous but with a fringe of long setae extending over base of mandibles; entire head usually black with narrow groove between calluses extending to epistomal lobe often red; remaining surface beyond glabrous border minutely, densely punctured. Antennal club large, oval, 1.2 times longer than wide, suture 1 slightly procurved, 2 strongly procurved. Pronotum as long as wide; sides slightly, evenly arcuate, broadly rounded anteriorly; anterior margin with a weakly elevated, undulating line; anterior two-thirds of surface with numerous, distinctly elevated, transverse asperities, surface between asperities moderately shining, minutely reticulate; posterior half with dense, shining granules, surface between granules moderately shining, minutely reticulate, with scattered, fine punctures. Elytra 1.2 times longer than wide; sides parallel on basal three-fourths; apex broadly rounded; entire discal surface shining, densely punctured, striae and interstriae not evident except for weakly impressed striae 1, punctures moderately large, same size as those on pronotal base and separated by a distance less than their diameters, each puncture with a short, semirecumbent seta or a longer, erect seta, these less numerous than semirecumbent setae; interstriae 10 slightly elevated from base to base of declivity. Declivity evenly convex; unmodified, striae 1 deeply impressed; remaining striae more evident than on disc, punctures more definite in rows; interstitial punctures as on disc. Anterior tibia without a tubercle on posterior face.

**Male.** Similar in size and color to female. Frons convex, slightly concave on each side of a distinct, longitudinal carina extending from epistomal margin to a point halfway to level of upper margin of eyes at apex of a weakly elevated, arcuate line or impression; surface dull, densely minutely reticulate, with distinct, impressed, close, very small punctures, vestiture sparse, inconspicuous.

**Distribution.** Known from Cuba and the Dominican Republic.

**Specimens examined.** CUBA: Cienfuegos, Mtns. 10 mi. E Soledad, Nov. 28, 1926, Darlington (1–CNCI); Pico Turquino, S. side, 3000–5000 ft / CUBA, 1936, Darlington (1–CNCI); Cienfuegos Province., Res. Ecológica Pico San

Juan, 21.97083°N, 80.11859°W, 856 m, mercury vapor light, forest edge, 18–V-2013; A. B. T. Smith, A. Deler-Hernández (1–CMNO); Monte Islas, nr. California, Camaguey Province, June 7, 1959, M. W. Sanderson, at light (1–INHS). **DOMINICAN REPUBLIC:** Barahona, nr. Filipinas, Larimar Mine, 26.VI-7.VII.1992, Woodruff and Skelley, flight trap (10–RHTC, CNCI); La Vega, Province Constanza (10 km S), 11 November 1984: S. Spangler and R. Faitoute (1–USNM); Province La Vega, La Cienega, 1100 m, 19°04.07'N, 70°51.68'W, 29 July 1999, at light, M. A. Ivie and K. A. Guerero (1–CNCI); Province La Vega, La Cienega, Parque HQ, 19°04.07'N, 70°51.68'W, 29 July 1999, 1100 m, S. Peralta, at light (1–WIBF); HDR-010 Arroyazo, Reserva Científica Ebano Verde, La Vega Province, 1090 m, 20–21.VII.2015, D. Perez, J. Sanchez Borbón, day and uv (1–USNM).

**Comments.** Adults of this very beautiful and variable species may be recognized by their large size (largest species in the West Indies) and by the complex morphology of the female frons described above. In addition, the elytra are densely punctured and usually devoid of distinct striae or interstriae except on interstriae 1. In some specimens, the elytral punctures are arranged in vague strial rows. The basal portion of the pronotum bears shining granules and scattered, vague punctures near the base.

The color pattern is unique among West Indian *Scolytodes*. It is usually a bicolored pattern of red and black in various combinations. Describing the various patterns of color is very difficult, since almost every combination of red and black is evident. Often the elytra are black, with red on the lateral or basal portions, but are often red with some black. The pronotum is often black on the apical half and red on the basal half, but the combinations can be reversed or the proportions of the colors may vary. The head is most often black, with a red area between the elevated calluses extending ventrally to the broad, shining area over the median portion of the epistoma.

The male is less elaborate. The frons is basically convex, with a longitudinal carina extending from the epistoma to a point halfway to level of the upper margin of the eyes. The color pattern is as variable as the female.

The female holotype, in the NHMW, was examined and compared to the specimens mentioned above.

***Scolytodes glaber* (Eichhoff)**

Figure 150.

*Hexacolus glaber* Eichhoff 1868a: 400.

*Scolytodes glaber*: Wood and Bright 1992: 392.

*Erineophilus schwarzi* Hopkins 1902: 36 (Cuba). **New Synonymy.**

*Scolytodes schwarzi*: Wood and Bright 1992: 399; Bright and Skidmore 2002: 59; Bright 2014: 102.

**Description (Female).** Length 1.5–1.7 mm, 2.3–2.5 times longer than wide; elytra and basal portion of pronotum light brown, usually darker on anterior half of pronotum. Frons flattened to weakly convex; surface smooth and shining on a circular area occupying median third, this area frequently weakly longitudinally sulcate, surrounding surface finely punctate; vestiture consisting of moderately long setae arranged around the impunctate median portion, these longer on upper margin and directed downward, longer on median portion of epistomal margin. Antennal club symmetrical, oval, 1.6 times longer than wide; suture 1 weakly arcuate, suture 2 more strongly arcuate; apex evenly rounded. Pronotum as long as wide; sides straight on basal two-thirds, anterior margin broadly rounded, weakly crenulate; anterior half of surface with abundant, distinctly elevated, large, close asperities, surface between asperities dull, minutely reticulate; posterior half dull, minutely reticulate, with closely placed, deeply impressed punctures, most of these separated by a distance less than their diameters. Elytra 1.3 times longer than wide; sides parallel on basal three-fourths; apex broadly rounded; discal striae not impressed, punctured in even, regular rows, punctures moderately large, more deeply impressed than those on base of pronotum; discal interstriae shining, with a median row of distinct punctures, these slightly smaller and slightly shallower than those in striae; each strial and interstrial puncture bearing a very short seta; interstriae 10 acutely, slightly elevated from base to base of declivity. Declivity evenly convex; strial and interstrial punctures as on disc except slightly smaller. Anterior tibia without a small tubercle on posterior face.

**Male.** Similar in size and color to female. Frons evenly convex, dull, finely minutely reticulate, weakly punctured, glabrous.

**Distribution.** This species is known from southern Florida to Jalisco and Veracruz, Mexico and is widely distributed throughout the West Indies.

**Specimens examined.** **BAHAMAS:** **Andros Island**, Forfar Field Station, mercury vapor and blacklight, 6 June 2004 (2) and 2 June 2004 (1), R. Turnbow (3–RHTC); Atala Coppice, blacklight trap, 8 June 2004, R. Turnbow (1–RHTC); BARC., Funeral Home, 10.VI.1987, J. Browne, high interior coppice and pasture edge flight intercept trap (1–CMNH); Maidenhair Coppice, 24–28.VII.2006, M. C. Thomas, T. R. Smith, uv trap in interior coppice (1–FSCA). **San Salvador**, Gerace Research Ctr., 24°07'N, 74°26'W, various dates. in June 2003 / at blacklight, scrub forest edge at open catchment, W. E. Steiner and J. M. Swearingen (15–USNM). **CAYMAN ISLANDS:** **Grand Cayman**, VI.1992 (1) or 12.VIII.1990 (1) or 10.IX.1989 (1): Fitzgerald, blacklight trap (3–FSCA); Georgetown, 3 June 2008, R. Turnbow (1–RHTC). **CUBA:** Cayamas, 3.3 / E. A. Schwarz, collector (1–USNM). **DOMINICAN REPUBLIC:** Azua, east side of crest, Sierra Martin Garcia, 7 km WNW Barrero, 18.21 N, 70.58 W / 25–26 July 1992, C. Young, R. Davidson, S. Thompson, J. Rawlins / cloud forest adjacent to disturbed forest (1–CMNH); Barahona, 9.2 km NW Paraiso confluence of Rio Nizao / and Rio Coltico, 18.03N, 71.12W, 230 m, 9–10 Aug 1990, J. Rawlins, S. Thompson (1–CMNH); Province El Seibo, Loma de Chivo, 7 mi. N Pedro Sanchez, 5000 ft., 20.VI.1998, blacklight trap, R. E. Woodruff: H. Freytag (1–REWC); Province Pedernales, 24 km N Cabo Rojo, 610 m, 20 Aug-09 Sept 1988, flight intercept trap, M. A. Ivie, T. K. Philips and K. A. Johnson (1–WIBF); Province Pedernales, 24 km N Cabo Rojo, 11.VI.1998, 3000 ft., blacklight trap, R. E. Woodruff: Freytag (2–REWC); Province Barahona, nr. Filipinas, Larimar Mine, 20–26 VI.1992, R. E. Woodruff and P. E. Skelley, at light (1–RHTC); Monte Cristi, 5 km NNE of Botoncillo, 50 m, 29–30.XI.1992, arid thorn-scrub, R. Davidson, M. Klingler, S. Thompson and J. Rawlins (1–CMNH); Pr. Puerto Plata, top of Pico Isabel de Torres, nr. Teleferico, 31 July 1999, at light, K. A. Guerrero (1–WIBF); Province La Altagracia: N. de Este, Boca de Yuma, 18°21.904'N, 68°37.094'W, 05 Aug 1999, 2 m, at light, M. A. Ivie and K. A. Guerrero (1–WIBF). **GUADELOUPE:** Basse-Terre, Bois Malher, 9.IX.2010, M. C. Thomas and R. H. Turnbow (4–FSCA). **JAMAICA:** Island record only (5–NHML); Pt. Antonio, 3/30 Jan., A. E. Wright, F. C. Bowditch (1–CNCI). **MONTSERRAT:** Fairy Walk, 15 Aug 2005, WIBF colrs., uv light (1–WIBF). **NETHERLANDS ANTILLES:** **Saba**, Scouts Place Hotel, 402 m, 17.2773°N, 63.23122°W, 12–15 Mar 2008, D. Sikes (2–WIBF); **Saba**, near Booby Hill, 401 m, 17.67318°N, 63.22675°W, 13 Mar-01 Apr 2008, D. Sikes, J. Slowik, flight intercept trap w/pitfall (1–WIBF); **Saba**, Windward side, 23–26.VIII.1993, R. M. and H. V. Baranowski, blacklight trap (1–CNCI). **PUERTO RICO:** Bisley, El Yunque, 16.VII.90, J. Torres / in *Swietenia macrophylla* log (3–CNCI); Guaynabo, various dates in 1999 and 2000, J. Torres / ex: light trap (10–CNCI); Matrullas, Oct. 22, 1934, dead tree, R. G. Oakley (1–CNCI); San Germán, San Germán, Site 9, EDRR, 18.15118-.66.99364, 3–30.VII.2013, C. Torres and H. C. Rivera (2–MSUC).

**Comments.** Adults of this species may be recognized by the evenly convex elytral declivity, by the presence of very short setae on the elytra (sometimes abraded), by the distinctly elevated pronotal asperities with several asperities coalescing into elongate, transverse ridges and by the female frons with the central portion shining, surrounded by a brush of moderately long setae. Adults are very similar to those of *S. iviei* Bright but differ by the much larger, evenly oval antennal club and by the much less distinctly impressed sulcus on the median glabrous portion on the frons.

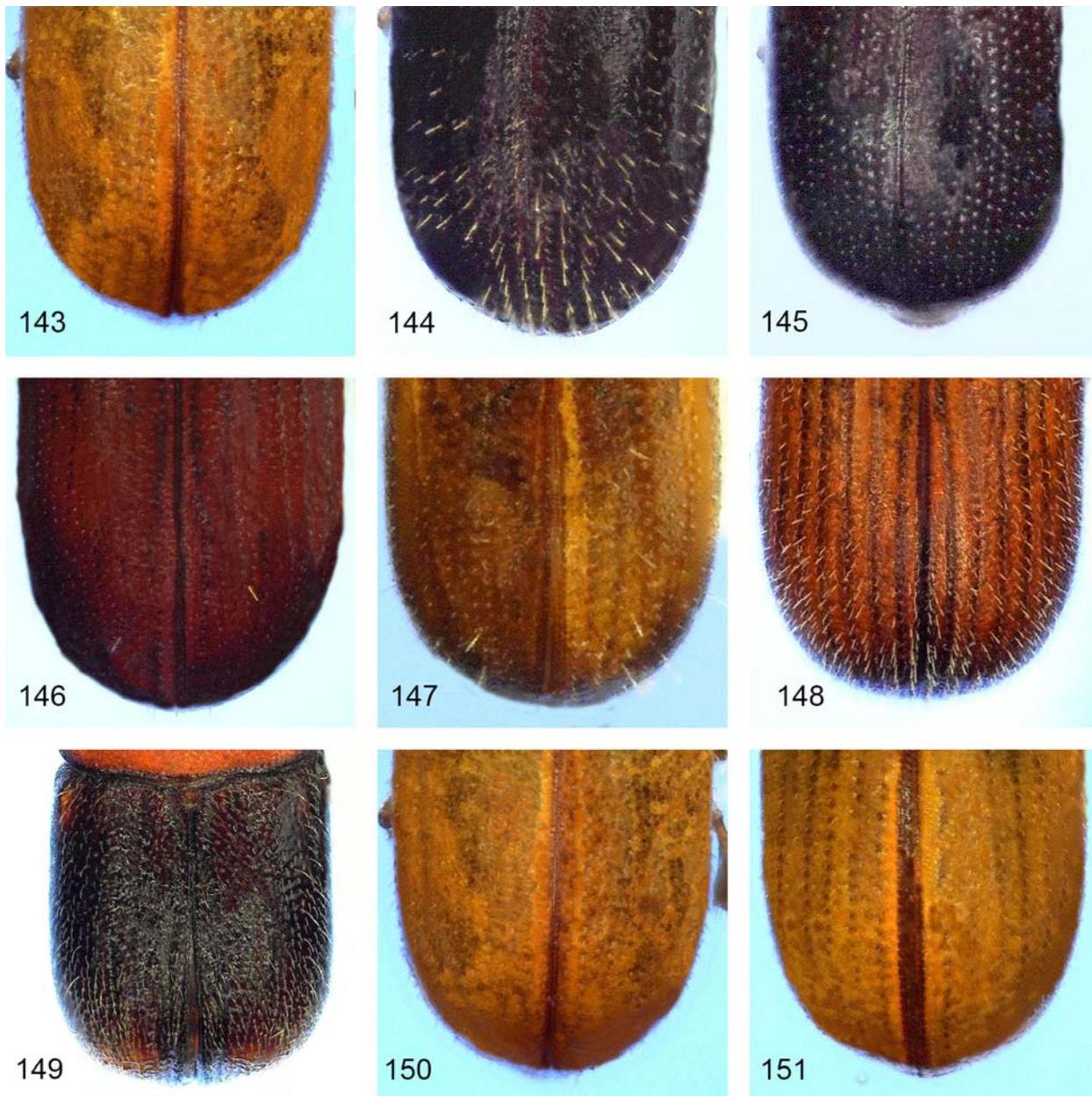
The holotype of *Erinophilus schwarzi* Hopkins has been examined and compared to the holotype of *Hexacolus glaber* Eichhoff. They represent the same species.

Wood (1982) records this species, under the name *S. schwarzi*, as infesting dying, broken or cut branches of *Ficus* spp. One record from a log of *Swietenia macrophylla* is noted above.

### *Scolytodes iviei* Bright, sp. nov.

Figure 151.

**Type Material.** **HOLOTYPE** (female) labeled: “**MONTSERRAT:** Centre Hills, Cassava Ghaut, 690', E of Woodlands, 25 June 2000, 16°45.830'N, 62°12.818'W, M. A. Ivie, beating veg.” / “**HOLOTYPE** *Scolytodes iviei* D. E. Bright 2016” (WIBF [CNCI]). **ALLOTYPE** labeled with same data as holotype plus my allotype label (WIBF [CNCI]). **PARATYPES** (38); 12 labeled with same data as holotype (CNCI, WIBF); 15 labeled with same data as holotype except “under bark of recently cut log” (CNCI, WIBF); 1 labeled: “**GUADELOUPE:** Oberer Mittellauf der Riv. Lezard, 28.3.1979” (NHMW); 6 labeled: “**GUADELOUPE:** 12–31.VII.1998, Pointe-à-Pitre, Morne Jolivièrre, uv, 160 w, D. Roguet” (CNCI); 1 labeled: “**MONTSERRAT:** Fairy Walk, 15 Aug 2005, WIBF colrs., uv light” (WIBF); 1 labeled: “**WEST INDIES:** **SAINT KITTS**, Par. Saint Peters, Fountain Estates, 8–9.III.2006, R. E. Woodruff, blacklight trap” (REWC); 2 labeled: “**ANTIGUA:** Christian Valley, 26.VIII.1991 (1), 20.VIII.1991 (1), FAO Insect Survey, blacklight trap” (CNCI).



**Figures 143–151.** Declivities of *Scolytodes* spp. **143)** *S. aridus*. **144)** *S. aquilus*. **145)** *S. anthracinus*. **146)** *S. atlanticus*. **147)** *S. atomus*. **148)** *S. bellus*. **149)** *S. cubensis*. **150)** *S. glaber*. **151)** *S. iviei*.

**Description (Female).** Length 1.4–1.7 mm, 2.6 times longer than wide; light reddish-brown, sometimes very slightly darker on anterior portion of pronotum. Frons very similar to *S. glaber* except median, glabrous area more distinctly impressed by a longitudinal sulcus. Antennal club asymmetrical, nearly circular, as long as wide, suture 1 weakly arcuate, 2 straight, oblique; apex truncate. Pronotum as in *S. glaber* except asperities on anterior slope smaller, less distinctly elevated. Elytra as in *S. glaber*. Declivity evenly convex; striae and interstriae punctures as on disc except slightly smaller. Anterior tibia usually without a small tubercle on posterior face, but sometimes a minute tubercle can be detected.

**Male.** Similar in size and color to female. Frons convex, dull, finely minutely reticulate, weakly punctured, glabrous.

**Distribution.** This species is known from Antigua, Guadeloupe, Montserrat and Saint Kitts-Nevis.

**Etymology.** This species is named for the collector of the holotype.

**Comments.** Adults of this species are quite similar to those of *S. glaber* but may be distinguished by the much smaller, asymmetrical antennal club, by the slightly deeper sulcus in the median, glabrous area on the frons and by the smaller, less elevated asperities on the anterior slope of the pronotum. Occasionally, a minute granule might be detected on the posterior face of the fore tibia. This “granule” might simply be a surface irregularity that resembles a granule. To avoid uncertainty, this species is keyed to two places in the key to species.

***Scolytodes longisetum* Bright, sp. nov.**

Figure 152.

**Type Material.** **HOLOTYPE** (female) labeled: “**Mona Island**, Sendero Capitán, 40 m, at night, incl. Hg” / “uv lights, N18°05'17", W67°56'16", leg. N. Franz, V.19.2008” / “**HOLOTYPE** *Scolytodes longisetum* D. E. Bright 2016” (CNCI). **PARATYPE** (1) labeled: “**Mona Island**, Sendero Capitán, 50 m, at Hg and uv lights, N18°05'29", W67°56'14", leg. N. Franz, V.23.2008” (CNCI).

**Description (Female).** Length 1.8 mm, 2.3 times longer than wide; light brown. Frons largely concealed by a dense brush of setae which arise on the vertex and extend downward almost to epistomal margin, visible portion flattened, shining, with obscure punctures; epistomal margin straight with distinct long setae in median portion extending halfway to tip of mandibles (abraded on holotype). Antennal club narrowly oval, 1.5 times longer than wide, with two transverse sutures. Pronotum 1.1 times longer than wide, widest at anterior third; sides straight, slightly converging to base; anterior margin broadly rounded, unarmed; anterior one-half of surface with numerous, very slightly elevated, transverse asperities, surface between asperities shining; posterior one-half smooth, moderately shining, with large, distinct punctures, these separated by a distance much less than their diameters. Elytra 1.5 times longer than wide; sides parallel on basal three-fourths; apex broadly rounded; discal striae not impressed, punctured in even, regular rows, punctures large, equal in size to those on posterior half of pronotum, very close, glabrous; discal interstriae brightly shining, narrower than striae, with a median row of minute punctures, with sparse, erect setae on posterior third near declivity, setae shorter than interstitial width; interstriae 10 slightly, acutely elevated from base to near base of declivity, this carina interrupted at level of metacoxae. Declivity evenly convex, brightly shining; striae punctures slightly smaller than those on disc; each interstriae bearing a median row of very fine setae. Anterior tibia without a small tubercle on posterior face.

**Male.** Unknown.

**Distribution.** This species is known from Mona Island, off the coast of Puerto Rico.

**Etymology.** This species is named for the presence of long setae on the frons of the female.

**Comments.** Females of this species may be recognized by the dense brush of setae on the frons which arises on the vertex and extends almost to epistomal margin, by the close, deep punctures on the posterior half of the pronotum and by the lack of a granule on the posterior face of the protibia.

***Scolytodes nitidissimus* (Eggers)**

Figure 153.

*Hexacolus nitidissimus* Eggers 1940: 135.

*Scolytodes nitidissimus*: Wood and Bright 1992: 396; Bright and Skidmore 2002: 58.

*Prionosceles imitans* Eggers 1940: 136 (Guadeloupe).

*Scolytodes imitans*: Wood and Bright 1992: 393.

**Description (Male).** Length 2.0–2.3 mm, 2.3 times longer than wide; light brown. Frons with a distinct, narrow, transverse swelling just above epistomal margin, convex above swelling; surface of trans-

verse swollen area bearing large, distinct granules, surface above smooth, shining, minutely reticulate, with fine, scattered punctures; epistomal margin straight with distinct long setae in median portion extending halfway to tip of mandibles; vestiture on swollen area slightly longer than on remaining surface, setae on convex area short, inconspicuous. Antennal club oval, 1.3 times longer than wide, with two arcuate sutures and one straight suture at tip. Pronotum 1.1 times longer than wide, widest at anterior third; sides straight, converging to base, broadly rounded anteriorly; anterior margin unarmed; anterior one-half of surface with numerous, very slightly elevated, transverse asperities, surface between asperities shining, minutely reticulate; posterior one-half smooth, moderately shining, minutely reticulate, with small, widely separated, shallowly impressed punctures, these separated by a distance distinctly greater than their diameters. Elytra 1.5 times longer than wide; sides parallel on basal three-fourths; apex broadly rounded; discal striae weakly impressed, punctured in even, regular rows, punctures very small, smaller than punctures on posterior half of pronotum, each puncture bearing a very short seta equal in length to puncture diameter; discal interstriae brightly shining, 3.0–4.0 times wider than striae, with a median row of distinct punctures and erect setae, setae as long as interstitial width; interstriae 10 slightly, acutely elevated from base to beyond base of declivity. Declivity evenly convex, brightly shining; striae slightly more impressed than on disc; each interstriae bearing a median row of very fine granules and setae. Anterior tibia without a small tubercle on posterior face.

**Female.** Frons moderately concave from epistoma to upper level of eye, surface densely punctured, with a dense brush of long setae; otherwise resembles male.

**Distribution.** This species is known in the West Indies from Dominica, Guadeloupe and Saint Lucia. It is also recorded in South America from Peru and Venezuela under the name *Scolytodes imitans* (Eggers) (Wood 2007).

**Specimens examined.** **DOMINICA:** 1250', 5 mi. E. Dublanc, 20 Aug. 1986, C. W. and L. B. O'Brien (1–CNCI). **GADELOUPE:** Basse-Terre, 1–2 km W Bains Jaunes, 18 May 2012, R. Turnbow (1–RHTC); Trois Rivières (4–MNH). **SAINT LUCIA:** Barre de L'Isle Trail, 13°93'N, 60°96'W, 8.VII.2009 / in *Cecropia* sp. leaf petiole, D. E. Bright (56–CNCI, WIBF); Millet Forest Trail, 13°90'N, 60°99'W, 10.VII.2009 / in *Cecropia* sp. leaf petiole, D. E. Bright (7–CNCI); La Porte Forest Trail, 13°84'N, 60°97'W, 11.VII.2009, 272 m / in *Cecropia* sp. leaf petiole, D. E. Bright (5–CNCI); Piton Flores, 532 m, 13°96'N, 60°94'W, 5.VII.2009 / in *Cecropia* sp. leaf petiole, D. E. Bright (4–CNCI); 2000', Mt. Casteau Rd, 2 mi. NE Fond Saint Jacques, 9 Aug. 1986, C. W. and L. B. O'Brien (1–CNCI).

**Comments.** Males of this species may be distinguished by the low, transverse swelling on the frons just above the epistomal margin, by the presence of an even row of erect setae in each elytral interstriae, by the median row of fine granules in each declivital interstriae and by numerous other characters mentioned in the above description. The female is similar to the male but lack the transverse swelling on the frons; the frons is flattened, slightly concave, with dense setae.

The holotype of *S. imitans* is mounted on a card with two specimens of *S. nitidissimus*. Both “species” were collected from the same locality and host on Guadeloupe (Eggers 1940). When Jordal (1998) published his review of *Scolytodes*, only the type series of both “species” was known, a total of four specimens. Numerous specimens were collected in 2009 on Saint Lucia from *Cecropia* petioles and it is now obvious that one species is represented.

### *Scolytodes notatus* (Eggers)

Figure 154, 155.

*Hexacolus notatus* Eggers 1940: 133.

*Scolytodes notatus*: Wood and Bright 1992: 396; Bright 2014: 101.

*Hexacolus discedens* Eggers 1940: 133 (Guadeloupe). **New Synonymy.**

*Scolytodes discedens*: Wood and Bright 1992: 396.

*Hexacolus insularis* Schedl 1952: 357 (Guadeloupe). **New Synonymy.**

**Description (Female).** Length 1.2–1.5 mm, 2.5 times longer than wide; dark to light reddish-brown, sometimes darker brown on anterior half of pronotum, head and ventral surface. Frons completely concealed by a dense brush of yellowish setae that extends from vertex to or beyond mandibles; epistomal

margin straight on lateral portions, with a median lobe at lower end of smooth area with distinct long setae extending almost to tip of mandibles. Antennal club slightly oval, as long as wide, with two oblique, straight sutures and one arcuate suture at tip. Pronotum as long as wide; sides parallel on basal three-fourths, broadly rounded anteriorly; anterior margin unarmed; anterior one-third of surface with numerous, slightly elevated, transverse asperities, surface between asperities shining, minutely reticulate; posterior half smooth, dull, minutely reticulate, with very small, weakly impressed punctures, most of these separated by a distance greater than their diameters. Elytra 1.4 times longer than wide; sides parallel on basal three-fourths; apex broadly rounded; striae not impressed, punctured in even, regular rows, punctures moderately large, more deeply impressed than those on base of pronotum; interstriae shining, with a median row of distinct punctures, these slightly smaller and slightly shallower than those in striae; interstriae 3, 5 and 7 each with two or three fine, erect setae; interstriae 10 slightly elevated from base to level of hind coxa. Declivity evenly convex, unmodified; strial and interstitial punctures as on disc. Anterior tibia with one small tubercle on posterior face just opposite tarsal insertion between terminal mucro and first tooth on lateral margin.

**Male.** Similar in size and color to female. Frons evenly convex, narrowly transversely impressed just above epistoma; surface dull, micro-reticulate-punctate, vestiture sparse, inconspicuous.

**Distribution.** This species probably occurs throughout the West Indies. It is reported from Brazil (Bright and Skidmore 1997).

**Specimens examined.** **BARBADOS:** Turners Hall Woods, 200 m, 5–23.VI.2007, forest flight intercept trap, S. and J. Peck (1–WIBF). **DOMINICA:** 1.2 mi. N Pont Casse, VIII.14.1964, T. J. Spilman / Bredin-Archbold Smithsonian Survey (8–USNM, CNCI); St. Paul Par., Pont Casse, 24 June 2004, R. Turnbow (1–RHTC). **GRENADA:** St. Andrew, Mirabeau Agriculture Laboratory, 11.III.1990, R. E. Woodruff, light trap (1–CNCI); same locality, 18.IV.1990, J. Telsford, light trap and 8.I.1990, blacklight trap (2–SBPC). **GADELOUPE:** Basse-Terre, Parc National de la Guadeloupe, Corrosol, 7.IX. 2010, M. C. Thomas and R. H. Turnbow, blacklight trap (1–FSCA); Basse-Terre: La Soufriere, 950 m, Bains Jaunes, V.23.1985, C. W. and L. B. O'Brien (1–CNCI); Basse-Terre: Gourbeyre, Palmiste, 05–20 Jan 2003, J. Touroult, (5–WIBF); Gourbeyre (5–AMNH, CNCI); Basse-Terre: Petit Binro, 02 JAN 2003, J. Touroult (1–CNCI). **PUERTO RICO:** Guaynabo, III.2000, J. Torres / ex: light trap (1–CNCI). **SAINT LUCIA:** Chassin trap site, 94 m, 17–23 May 2009, uv light, R. C. Winton and E. A. Ivie (1–WIF); Des Cartiers Trail, 347 m, A. R. Cline and S. D. Gaimari collrs., 21 May 2009, under bark (1–WIBF); Mon Repos, 6.5 km W Fox Grove Inn, 16.VII.2007 / submontane forest uv light, 300 m, S. and J. Peck (1–CNCI).

**Comments.** Females of this species may be distinguished by the convex frons that bears a brush of long, yellowish setae that extends from the vertex to or slightly beyond the mandibles and completely conceals the surface, by the shallow transverse impression just above the epistoma on the male frons and by the mostly glabrous elytra with bears a few, short, erect setae in interstriae 3, 5 and 7.

The identification of this species has evidently been incorrect since its description, probably due to the fact that Eggers type series contains two species. Eggers (1940) clearly explains in the original description that the frons of the female (mistaken as the male?) bears a long, dense brush of setae that extends from the vertex to or beyond the mandibles. Females of the other species, recognized here as *H. pseudobicolor*, have a flattened frons with a shining, oval, usually slightly elevated, glabrous, longitudinal swelling surrounded by a finely punctured area which bears short, erect setae.

The holotype of *H. notatus*, in the MNHN and those of *H. discedens* and *H. insularis*, in the NHMW, were examined. They all represent the same species.

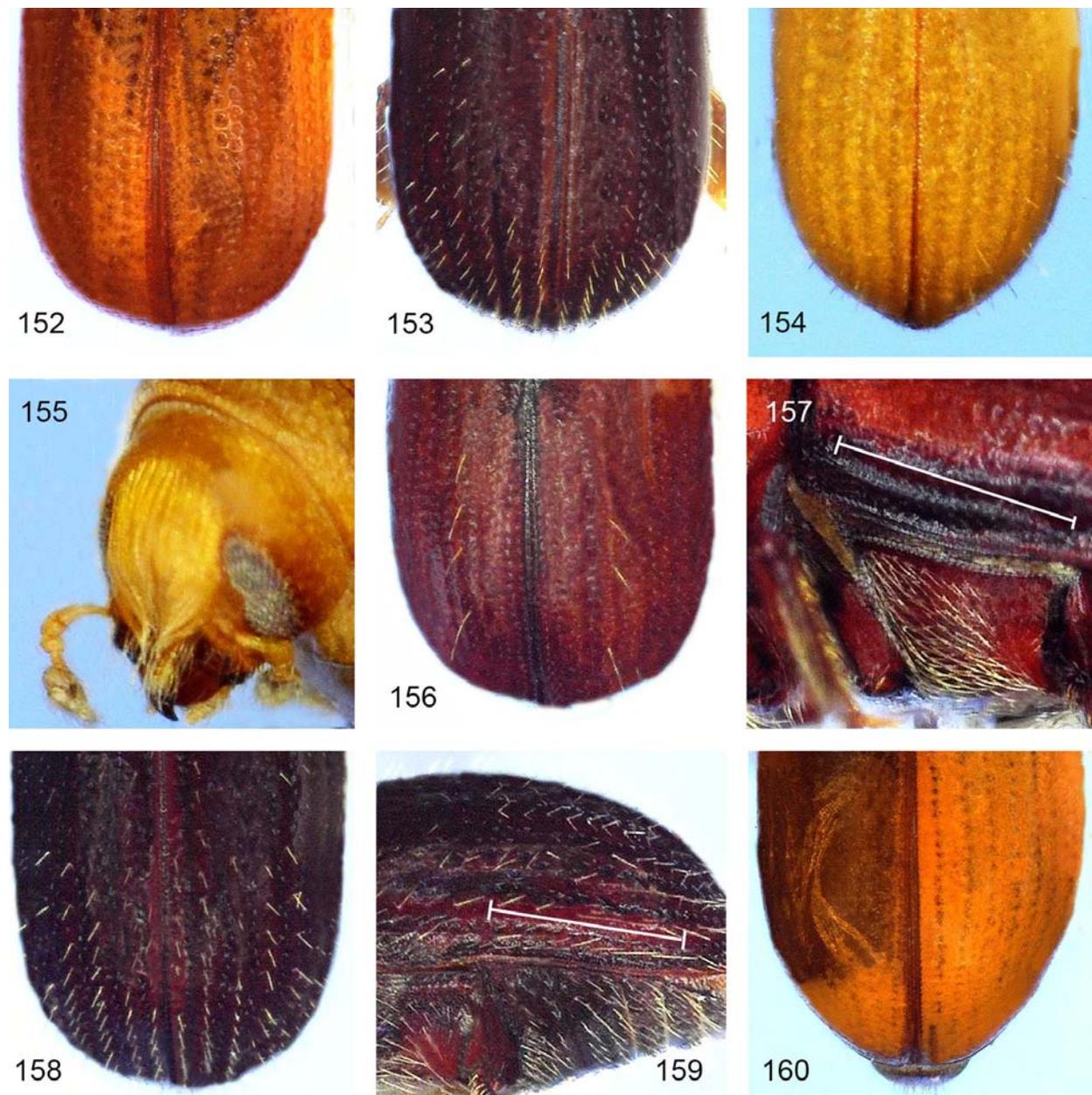
### ***Scolytodes oblongus* (Eggers)**

Figure 156, 157.

*Hexacolus oblongus* Eggers 1940: 134.

*Scolytodes oblongus*: Wood and Bright 1992: 396.

**Description (Female).** Length 1.9–2.5 mm, 2.4 times longer than wide; light to dark reddish-brown, often darker brown to black on anterior half of pronotum and head. Frons flattened from epistoma to above level of upper margin of eyes and laterally nearly from eye to eye, with a broad, median, oval, smooth, shining area larger than antennal club surrounded by a brush of moderately long setae; epistomal



**Figures 152–160.** Adult features of *Scolytodes* spp. **152)** *S. longisetum*, declivity. **153)** *S. nitidissimus*, declivity. **154)** *S. notatus*, declivity. **155)** *S. notatus*, frons. **156)** *S. oblongus*, declivity. **157)** *S. oblongus*, lateral view of elytral 9<sup>th</sup> interstria. **158)** *S. obtusiceps*, declivity. **159)** *S. obtusiceps*, lateral view of elytral 9<sup>th</sup> interstria. **160)** *S. peckorum*, declivity.

margin straight, with a very slight median lobe, with distinct long setae extending almost to tip of arcuate suture at tip. Pronotum 1.1 times longer than wide; sides weakly arcuate on basal three-fourths, mandibles. Antennal club slightly oval, as long as wide, with two oblique, straight sutures and one broadly rounded anteriorly; anterior margin unarmed; anterior one-third of surface with numerous, slightly elevated, transverse, basally separated asperities, surface between asperities shining, minutely reticulate; posterior half smooth, dull, minutely reticulate, with closely placed, deeply impressed punctures, most of these separated by a distance equal to or more than their diameters. Elytra 1.3–1.4 times longer than wide; sides parallel on basal three-fourths; apex broadly rounded; discal striae not impressed, punctured in even, regular rows, punctures moderately large, more deeply impressed than those on base

of pronotum; interstriae shining, with a median row of obscure punctures, these smaller and shallower than those in striae; interstriae usually glabrous but interstriae 3, 5 and/or 7 may each have two or three fine, erect setae; striae 8 and 9 deeply impressed on lateral area; interstriae 10 slightly elevated from base to level of hind coxa. Declivity evenly convex; interstriae 1 very slightly impressed, unmodified; striae and interstitial punctures as on disc. Anterior tibia with one small tubercle on posterior face just opposite tarsal insertion between terminal mucro and first tooth on lateral margin.

**Male.** Similar in size and color to female. Frons evenly convex, narrowly, strongly impressed just above level of antennal insertions; surface above impression dull, micro-reticulate, with weak punctures; vestiture sparse, inconspicuous.

**Distribution.** This species is known from Guadeloupe.

**Specimens examined. GUADELOUPE:** La Soufriere, 1124 m, 4.II.1969, L. B. and C. W. O'Brien (50–CNCI, WIBF); BT: La Soufriere, 950 m, Bains Jaunes, 23.V.1985, C. W. and L. B. O'Brien (1–CNCI); Trois-Rivières, Leo Dufau 1904 (9–MNHN).

**Comments.** Adults are very similar to *S. notatus* but may be distinguished by the larger size, by the slightly longer setae on the female frons, by the larger median smooth area on the female frons and by the more narrowly and more deeply impressed area on the male frons.

This species was described from an unknown number of specimens, nine of which are in the MNHN (four bear Eggers cotype label) and one in the NHMW. The cotypes (paratypes), in the MNHN, were examined. The holotype should also be in the MNHN but was not found there. The O'Brien specimens mentioned above were directly compared to the cotypes and found to be the same species.

***Scolytodes obtusiceps* Bright, sp. nov.**

Figure 158, 159.

**Type Material. HOLOTYPE** (female) labeled: “DOMINICA: 1.3 mi. W. of Pont Casse, VII.22.1964, T. J. Spilman” / “Bredin-Archbold Smithsonian Survey” / “in petioles *Cecropia peltata*” (handwritten label) / “HOLOTYPE *Scolytodes obtusiceps* D. E. Bright 2016” (USNM). **PARATYPES** (2): 1 labeled “DOMINICA: .3 mi. W. of Pont Casse, VII.22.1964, T. J. Spilman” / “Bredin-Archbold Smithsonian Survey” (USNM); 1 labeled: “DOMINICA: 2.2 mi. W. of Pont Casse, VII.22.1964, T. J. Spilman” / “Bredin-Archbold Smithsonian Survey” (CNCI).

**Description (Female).** Length 2.0–2.1 mm, 2.3 times longer than wide; black to dark reddish-black. Frons broadly concave from epistomal margin halfway to upper level of eyes and laterally almost from eye to eye; surface densely punctured, with abundant, short setae, these longer on periphery; epistomal margin straight, with a fringe of long setae. Antennal club oval, 1.4 times longer than wide, suture 1 straight, apical one-half of club densely pubescent. Pronotum 1.1 times longer than wide, widest on anterior fourth; entire dorsal surface shining, minutely reticulate, with widely scattered, very fine, weakly impressed minute punctures, asperities absent. Elytra 1.3 times longer than wide; sides parallel, apex broadly rounded; discal striae (except 1) not impressed, punctured in slightly irregular rows, punctures small, weakly impressed; discal interstriae flat, twice as wide as striae, with randomly placed, small punctures and a median row of erect, widely separated, hairlike setae; interstriae 10 acutely elevated on a fine line extending from elytral base to base of declivity. Declivity broadly convex; striae and interstriae as on disc except striae slightly more distinctly impressed. Protibia without a small granule on posterior face; apex with a strongly curved terminal spine and a slightly smaller spine at anterior apical angle; three small granules on anterior margin.

**Male.** Unknown.

**Distribution.** This species is known from Dominica.

**Etymology.** From *obtusus*, Latin for not pointed or acute, referring to the terminal spine on the protibia.

**Comments.** Adults of this species may be recognized by the dull, minutely reticulate interpuncture space on posterior portion of pronotum, by the concave female frons which bears a brush of dense, yellowish setae, these longer on periphery and by the color as indicated above.

***Scolytodes peckorum* Bright, sp. nov.**

Figure 160.

**Type Material.** **HOLOTYPE** (female) labeled: “WEST INDIES: SAINT VINCENT: Emerald Valley Hotel, Buccamont, 10–20.VI.2007, uv light, S. and J. Peck” / “HOLOTYPE *Scolytodes peckorum* D. E. Bright 2016” (SBPC [CNCI]). **ALLOTYPE** labeled with same data as holotype plus my allotype label (SBPC [CNCI]). **PARATYPES** (54): 15 labeled with same data as holotype (CNCI, SBPC); 1 labeled: “WEST INDIES: SAINT VINCENT: Wallilabou Bay, hotel grounds, 18.VIII.2006, coastal uv, S. and J. Peck” (SBPC); 38 labeled: “WEST INDIES: GRENADA, Par. Saint Andrews, Mirabeau Agric. Lab.”, these with various dates in 1990 and various collectors, e. g. J. Telesford, A. Thomas or R. E. Woodruff, all ex. light traps (CNCI, SBPC).

**Description (Female).** Length 1.7–2.0 mm, 2.1 times longer than wide; light brown or light to dark reddish-brown. Frons very weakly concave or flattened on a median, oval area extending from epistoma to just below upper level of eyes; surface of flattened area very finely densely punctures, bearing abundant, short setae, all of equal length, remainder of surface smooth, shining, with widely separated, fine punctures. Antennal club oval, 1.6 times longer than wide, suture 2 chitinized on lateral half. Pronotum less than 1.1 times wider than long, widest at base; anterior half of pronotal disc with very low, shining, transverse lines and faint punctures, posterior half with widely separated, faint punctures; entire dorsal surface dull, minutely reticulate. Elytra 1.2 times longer than wide; sides weakly arcuate, apex narrowly rounded; discal striae not impressed, punctured in regular rows, punctures very small, very weakly impressed; discal interstriae flat, 3.0–4.0 times wider than striae, glabrous; interstriae 10 acutely elevated on a fine line extending from elytral base to base of declivity. Declivity broadly convex; striae and interstriae as on disc. Protibia without a small granule on posterior face and with a strongly curved terminal spine; a slightly smaller spine at anterior apical angle; three small granules on anterior margin.

**Male.** Similar to female except frons convex, shining, with small, widely separated punctures and with two oval or round impressed areas above epistomal margin.

**Distribution.** This species is known from Saint Vincent and Grenada.

**Etymology.** This species is named for its collectors, Stewart and Jarimila Peck, who have contributed so much to the knowledge of the scolytid fauna of the West Indies. They have been constant supporters of this study since its inception.

**Comments.** Adults of this species may be most easily recognized by the presence of weakly elevated, shining, transverse lines and faint punctures on the anterior slope of the pronotum, by the entirely glabrous elytra, by the presence of two oval impressions on the male frons above the epistomal margin and by weakly concave female frons which bears short, equal length setae.

***Scolytodes plesiopolitus* Bright, sp. nov.**

Figure 161.

**Type Material.** **HOLOTYPE** (female) labeled: “GUADELOUPE: BT: Soufrière, 1.vi.2012, 16.03380–61.67707, 800–900 m, beating along road, R. Anderson, 2012–171X” / “HOLOTYPE *Scolytodes plesiopolitus* D. E. Bright 2016” (CMNO). **ALLOTYPE** labeled with same data as holotype plus my allotype label (CMNO).

**Description (Female).** Length 2.0 mm, 2.3 times longer than wide; black. Frons very slightly concave in central portion of flattened area extending from epistoma to just below upper level of eyes and laterally from eye to eye; surface densely, finely punctured, with moderately abundant, short, equal-length setae;

epistoma slightly extended medially, with a fringe of long setae. Antennal club circular, as long as wide, suture 1 weakly arcuate, suture 2 procurved, pubescent at apex. Pronotum as long as wide, widest at middle; entire dorsal surface, especially posterior portion, brightly shining, smooth, with widely separated, very fine, very weakly impressed minute punctures, asperities absent. Elytra 1.5 times longer than wide; sides parallel, apex broadly rounded; discal striae weakly impressed, punctured in regular rows, punctures small, weakly impressed; discal interstriae weakly convex, shining, twice as wide as striae, each with a median row of short, fine setae; interstriae 10 acutely elevated on a fine line extending from elytral base to base of declivity. Declivity broadly convex, striae and interstriae as on disc except striae slightly more distinctly impressed. Protibia without a small granule on posterior face; apex with a large, strongly curved terminal spine and a slightly smaller spine at anterior apical angle, two small granules on anterior margin.

**Male.** Similar to female except frons weakly, transversely impressed from epistomal margin to slightly above level of antennal insertion, convex above, with a very few, erect setae and anterior portion of pronotum bearing short, very weakly elevated, transverse lines.

**Distribution.** This species is known from Guadeloupe.

**Etymology.** From *pleisos*, Greek for near, *e. g.* near *politus*.

**Comments.** The females of this species are very similar to those of *S. politus* sp. nov., described below. The characters mentioned in the above key to species should be sufficient to distinguish the two species.

***Scolytodes politus* Bright, sp. nov.**

Figure 162.

**Type Material.** HOLOTYPE (female) labeled: "SAINT VINCENT: Charlotta P, La Soufrière Tr. (east), 9-2-1981, C. W. and L. B. O'Brien" / "above Jacobs Well" / "HOLOTYPE Scolytodes politus D. E. Bright 2016" (CNCI).

**Description (Female).** Length 2.0 mm, 2.3 times longer than wide; light reddish-brown, slightly darker on anterior portion of pronotum. Frons flattened from epistoma to just below upper level of eyes and laterally from eye to eye; surface densely, finely punctured, with abundant, short, equal-length setae; epistoma slightly extended medially, with a fringe of long setae. Antennal club circular, as long as wide, suture 1 straight, suture 2 procurved, pubescent at apex. Pronotum as long as wide, widest at middle; entire dorsal surface, especially posterior portion, brightly shining, very weakly reticulate, with widely separated, very fine, very weakly impressed, almost indiscernible minute punctures, asperities absent. Elytra 1.5 times longer than wide; sides parallel, apex broadly rounded; discal striae weakly impressed, punctured in regular rows, punctures small, weakly impressed; discal interstriae weakly convex, shining, twice as wide as striae, each with a median row of short, fine setae; interstriae 10 acutely elevated on a fine line extending from elytral base to base of declivity. Declivity broadly convex; striae and interstriae as on disc except striae slightly more distinctly impressed. Protibia without a small granule on posterior face; apex with a large, strongly curved terminal spine and a slightly smaller spine at anterior apical angle; two small granules on anterior margin.

**Male.** Unknown.

**Distribution.** This species is known from Saint Vincent.

**Etymology.** From *politus*, Latin for smooth, referring to the smooth pronotal disc.

**Comments.** Females of this species may be recognized by the smooth, shining, very faintly reticulate pronotal disc, with widely scattered, very faint impressed points and by the broadly flattened female frons with abundant, equal-length setae. Females closely resemble those of *S. pleisopolitus* and can be distinguished by the characters given in the above key to species.

***Scolytodes pseudobicolor* (Eggers), Resurrected Name**

Figure 163.

*Hexacolus pseudobicolor* Eggers 1940: 132.*Scolytodes pseudobicolor*: Wood and Bright 1992: 396 (as a synonym of *S. notatus*).*Hexacolus ovalis* Eggers 1940: 132 (Guadeloupe). **New Synonymy.***Hexacolus subparallelus* Eggers 1940: 134 (Guadeloupe).*Hexacolus longicollis* Eggers 1951: 152 (Guadeloupe). **New Synonymy.***Hexacolus pelicerinus* Schedl 1952: 358 (Mexico?).

**Description (Female).** Length 1.2–1.6 mm, 2.5 times longer than wide; dark to light reddish-brown, sometimes darker brown on anterior half of pronotum, head and ventral surface. Frons weakly convex; surface with a median, circular or longitudinal, glabrous, smooth space extending from epistoma to level of upper eye level, this area surrounded by a densely, minutely punctures space with a dense brush of erect, short to moderately long, yellowish setae. Antennal club slightly oval, as long as wide, with two oblique, straight sutures and one arcuate suture at tip. Pronotum as long as wide; sides parallel on basal three-fourths, broadly rounded anteriorly; anterior margin unarmed; anterior one-third of surface with numerous, slightly elevated, transverse asperities, surface between asperities shining, minutely reticulate; posterior half smooth, dull, minutely reticulate, with very small, weakly impressed punctures, most of these separated by a distance greater than their diameters. Elytra 1.4 times longer than wide; sides parallel on basal three-fourths; apex broadly rounded; striae not impressed, punctured in even, regular rows, punctures moderately large, more deeply impressed than those on base of pronotum; interstriae shining, with a median row of distinct punctures, these slightly smaller and slightly shallower than those in striae; interstriae 3, 5 and 7 each with two or three fine, erect setae; interstriae 10 slightly elevated from base to level of hind coxa. Declivity evenly convex, unmodified; strial and interstitial punctures as on disc. Anterior tibia with one small tubercle on posterior face just opposite tarsal insertion between terminal mucro and first tooth on lateral margin.

**Male.** Similar in size and color to female. Frons strongly convex, with a deep, transverse impression above epistoma, sometimes with a pair of very deep, round impressions just above epistoma and extending to above level of antennal insertion, these impressions slightly smaller than antennal club and separated by a narrow to broad septum; surface dull, micro-reticulate-punctate, vestiture sparse, inconspicuous.

**Distribution.** This species probably occurs throughout the West Indies.

**Specimens examined.** **DOMINICA:** 1.7 mi. E Pont Cases, II.4–11.1965, O. S. Flint Jr. collr. (1–USNM); St. George Parish, 1.5–3.5 km W Freshwater Lake, 23 June 2004, R. Turnbow (1–RHTC). **GADELOUPE:** Basse-Terre, Bains Jaunes to 1.5 km. S, 25 May 2012, R. Turnbow (2–RHTC); Basse-Terre, Trace des Crêtes at D-14, 21 May 2012, R. Turnbow (1–RHTC); Trois Rivières, Dafau (1–MNHN) (type of *S. ovalis*); Basse-Terre, La Soufriere, 950 m, Bains Jaunes, V.23.1985, C. W. and L. B. O'Brien (1–CNCI). **MARTINIQUE:** Morne Jacob, 450 m, 8.III.2011 / J. Touroult (1–CNCI). **NETHERLANDS ANTILLES:** Saba, trail to Spring Bay-2 km in, 821 ft, 17.633°N, 63.224°W, dry shrubs, Winkler ex., 10 Mar 2008, J. A. Slowik (1–WIBF). **PUERTO RICO:** El Yunque, 16.VII.1990, J. Torres / in *Swietenia macrophylla* log (3–CNC); Guaynabo, various dates 1996–2000, J. Torres / light trap (25–CNC); 2 mi. S Maricao, II.9.1969, C. W. O'Brien (1–USNM); 12 mi E Mayagüez, II.8.1969 (4–USNM); Matrullas, dead tree, Oct. 23, 1934 / R. G. Oakley / San Juan No. 5842 (4–USNM, CNCI). **SAINT LUCIA:** Barre de L'Isle trap site, 13.9368°N, 60.9594°W, 25–28 June 2009, 340 m, E. A. Ivie, uv light (1–WIBF); same locality, 29 June-03 July 2009, uv light trap, C. A. Maier, M. L. Gimmel (1–CNCI); Piton Flore, 25.III.2011 / J. Touroult, collr. (1–CNCI). **SAINT VINCENT AND THE GRENADINES:** Saint Vincent, Hermitage Forest, E of Spring Village, 15–27.VII.2006, forest edge flight intercept trap and Malaise trap, 348 m, S. and J. Peck (4–SBPC).

**Record from literature.** **CUBA:** Island record only (Vázquez et al. 2003).

**Comments.** Wood (1985) placed *H. pseudobicolor* and *H. subparallelus* in synonymy under *S. notatus* based on his examination of cotypes (paratypes). As stated above, in comments under *S. notatus*, the type series of *S. notatus* contains two species. My examination of the types and cotypes involved revealed that *H. pseudobicolor* and *H. subparallelus* represent the same distinct species, different from *H. notatus*.

The type of *H. ovalis* Eggers, in the MNHN, was examined. Eggers states that the type is 1.2 mm in length and is a female. The specimen is actually 1.6 mm in length and is a male. It appears to be a typical male of *S. pseudobicolor/subparallus*. The type bears the labels "Hexacolus ovalis n. sp. Type Eggers det 1932", "au parap, branches et feuilles sèches, bois trompette et autres" and "Collection Fleutiaux". This species actually has page priority over both *H. pseudobicolor* and *H. subparallelus*, but under the principle of "First Reviser" (International Code of Zoological Nomenclature 1999, Article 24.2.2). I have selected *H. pseudobicolor* as the appropriate name for this species. This is based on the fact that the type series of *H. pseudobicolor* contains both males and females, while *H. ovalis* is represented by a male specimen; females bear the most obvious characters.

*Hexacolus subparallelus* was described from one specimen from Guadeloupe and is in the MNHN. It is a typical female of *S. pseudobicolor*.

*Hexacolus pelicerinus* Schedl was placed in synonymy by Wood (1985) after examination of the holotype. It was described from "vermutlich Mexico" but probably originated from a Caribbean island (Wood 1985).

*Hexacolus longicollis* Eggers was described from one specimen that is labeled as a male but is actually a slightly smaller female of *S. pseudobicolor*. The holotype, in the Schedl collection at the NHMW, was examined.

*Ficus* is listed as a host plant by Vázquez et al. (2003) for this species in Cuba.

### ***Scolytodes puertoricensis* Bright and Torres**

Figures 164, 370.

*Scolytodes puertoricensis* Bright and Torres 2006: 398.

**Description (Female).** Length 1.5–1.7 mm, 2.4 times longer than wide; light reddish-brown, usually darker brown on pronotum, head and elytral apex. Frons weakly, narrowly concave longitudinally, sulcus extending from epistomal margin to slightly above middle of eye, surface of sulcus densely, minutely reticulate, bordered by a fringe of long, incurved setae with short, inconspicuous setae in sulcus; epistomal process straight, with distinct long setae extending almost to tip of mandibles. Antennal club oval, 1.7 times longer than wide, with two transverse sutures and one arcuate suture at tip. Pronotum as long as wide; sides parallel on basal three-fourths, broadly rounded anteriorly; anterior margin unarmed; anterior two-thirds of surface with numerous, slightly elevated, rounded, shining elevations, surface between elevations shining, smooth, with minute, scattered points; posterior one-third smooth, shining, smooth, with closely placed, deeply impressed punctures, these separated by a distance equal to or less than their diameters. Elytra 1.6–1.7 times longer than wide; sides parallel on basal three-fourths; apex broadly rounded; striae not impressed, punctured in even, regular rows, punctures larger, more deeply impressed than those on base of pronotum; interstriae brightly shining, with a median row of weak punctures, these slightly smaller and slightly shallower than those in striae; interstriae 10 slightly convex from base to level of hind coxa; vestiture absent. Declivity evenly convex, unmodified; strial and interstitial punctures as on disc. Anterior tibia with one small tubercle on posterior face just opposite tarsal insertion between terminal mucro and first spine on lateral margin.

**Male.** Similar in size and color to female. Frons evenly convex, weakly flattened just above epistoma, surface dull, micro-reticulate, vestiture sparse, inconspicuous.

**Distribution.** This species is known from Puerto Rico.

**Specimens examined.** PUERTO RICO: El Yunque, IX.1996, C. Laby / ex: light trap (7–CNCI, 2–WIBF); El Yunque, July–August 1985, E. LaRue, at light (1–USNM).

**Comments.** Females of this species may be recognized by the longitudinally concave frons which bears a fringe of scattered, long, incurved setae around the margin of the concavity, by the shape and structure of the antennal club and usually by the color pattern which is dark brown on the head, pronotum, ventral areas and elytral apex and light brown on the elytral disc. Occasional specimens may be completely, or nearly completely, light brown; however, the basic scheme of darker on the pronotum and elytral apex and lighter on the elytral disc can still be detected. The male can be recognized by the convex

frons, which is dull and densely micro-reticulate, by the structure of the antennal club and by the color pattern.

In the original description of this species, I mentioned that the holotype, paratype and five paratypes would be deposited in the USNM. However, all but one of the Puerto Rican specimens listed above were collected by C. Labay and are all deposited in the CNCI. The holotype, allotype and five paratypes are in the CNCI; one paratype is in the USNM and two are in the WIBF.

***Scolytodes sabaensis* Bright, sp. nov.**

Figure 165.

**Type Material.** **HOLOTYPE** (female) labeled: “NETHERLANDS ANTILLES: **SABA**: Sandy Cruz Trail, near Hell’s Gate, 1494’, 30.IV.2013” / “ex: recently cut limbs, D. E. Bright and B. A. Barr, collrs.” / “HOLOTYPE *Scolytodes sabaensis* D. E. Bright 2016” (CNCI). **ALLOTYPE** labeled with same data as holotype plus my allotype label (CNCI). **PARATYPES** (8): all labeled with same data as holotype (CNCI, WIBF’).

**Description (Female).** Length 1.5 mm, 2.4 times longer than wide; dark reddish-brown, legs and antenna slightly lighter. Frons flattened from epistomal margin to above upper eye level and nearly from eye to eye; surface covered by a dense brush of yellowish setae, these slightly longer on peripheral margin, with a shining, glabrous median area in center, remainder of surface minutely punctured around brush, smooth and minutely reticulate elsewhere; epistomal margin weakly arcuate, with short setae. Antennal club oval, 1.5 times longer than wide; sutures weakly arcuate. Pronotum 1.1 times longer than wide, widest at middle; sides subparallel on basal three-fourths; anterior margin broadly rounded, acutely elevated and without serrations; anterior half with numerous, very small, weakly elevated asperities, surface between asperities weakly shining, weakly reticulate; posterior half smooth, minutely reticulate, with small, widely separated, very weakly impressed punctures. Elytra 1.4 times longer than wide; sides parallel on basal three-fourths; apex narrowly rounded; discal striae not impressed, punctured in even rows, punctures small, closely placed in row, deeply impressed; discal interstriae much narrower than striae, shining, impunctate, glabrous; interstriae 10 slightly, acutely elevated from base to level of metacoxae. Declivity evenly convex, unmodified; surface as on disc. Anterior tibia without a granule on posterior face.

**Male.** Frons deeply, transversely impressed above epistoma, strongly convex above impression; surface dull, minutely reticulate, glabrous; otherwise resembles female.

**Distribution.** This species is known from Saba in the Netherlands Antilles.

**Etymology.** This species is named for the type locality.

**Comments.** Adults of this species are among the smallest individuals of *Scolytodes* seen from the West Indies. They may be distinguished by the lack of a tubercle on the posterior face of the protibia, by the tenth striae on the elytra extending from the base to the level of the metacoxae, by the small brush of setae on the female frons and by the strongly convex male frons that is deeply, transversely impressed above the epistoma.

Specimens were collected as they were attacking recently cut limbs in an undisturbed rainforest.

***Scolytodes steineri* Bright, sp. nov.**

Figure 166.

**Type Material.** **HOLOTYPE** (male) labeled: “CAYMAN ISLANDS: **Grand Cayman**, North side, 19°21’N, 81°12’W, 22 February 1993” / “at blacklight in forest clearing near coast; W. E. Steiner and J. N. Swearingen” / “HOLOTYPE *Scolytodes steineri* D. E. Bright 2016” (USNM). **ALLOTYPE** labeled: “CAYMAN: **Cayman Brac**, .9 km. E Brac Parrot Reserve, 2 July 2013, R. Turnbow” / “ALLOTYPE *Scolytodes steineri* D. E. Bright 2016” (RHTC [FSCA]).

**Description (Male).** Length 2.3 mm, 2.2 times longer than wide; dorsal surface, antennae, legs and abdominal sternites light brown, head and ventral surfaces of thorax black. Frons convex, with a very weakly, arcuate line extending from antennal insertions to a point below level of upper margin of eyes; surface below line reddish, brightly shining, finely rugose-punctate; surface above line convex, black, densely reticulate, with distinct, widely separated punctures, most of these separated by a distance greater than their diameters, each puncture with a short, semirecumbent seta; epistomal margin straight, with a brush of distinct long setae extending halfway to tip of mandibles. Antennal club oval, 1.5 times longer than wide, suture 1 straight, suture 2 arcuate. Pronotum very slightly longer than wide; sides parallel on basal three-fourths, broadly rounded anteriorly; anterior margin with a row of low, broad, basally contiguous serrations; anterior one-third of surface with numerous, low but distinctly elevated, transverse asperities, these lower toward summit, surface between asperities smooth, shining; posterior half with a weakly impressed, transverse impression at middle, surface smooth, shining, with closely placed, deeply impressed punctures, most of these separated by a distance less than their diameters. Elytra 1.3 times longer than wide; sides parallel on basal three-fourths; apex broadly rounded; striae not impressed, punctured in even, regular rows, punctures moderately large, more deeply impressed than those on base of pronotum; interstriae shining, finely, randomly punctured, with randomly placed, short setae; interstriae 10 slightly, acutely elevated from base to base of declivity. Declivity evenly convex; interstriae 1 moderately impressed below level of interstriae 2; striae 1 narrowly impressed; remaining striae and interstriae with punctures as on disc. Anterior tibia without a small tubercle on posterior face.

**Female.** Similar in size, coloration and vestiture as the male. Frons weakly convex on upper half, weakly flattened below; surface closely punctured and sparsely pubescent except on a broad, smooth, longitudinal smooth space extending from epistoma margin to halfway to upper eye level.

**Distribution.** This species is known from the Cayman Islands.

**Etymology.** This species is named for W. E. Steiner, one of the collectors of the holotype.

**Comments.** Adults of this species can be distinguished by the slightly impressed elytral declivity, by the weakly serrate anterior margin of the pronotum, by the densely, randomly punctured elytral interstriae and by the distinct color pattern. Other characters of importance are mentioned in the above key and description.

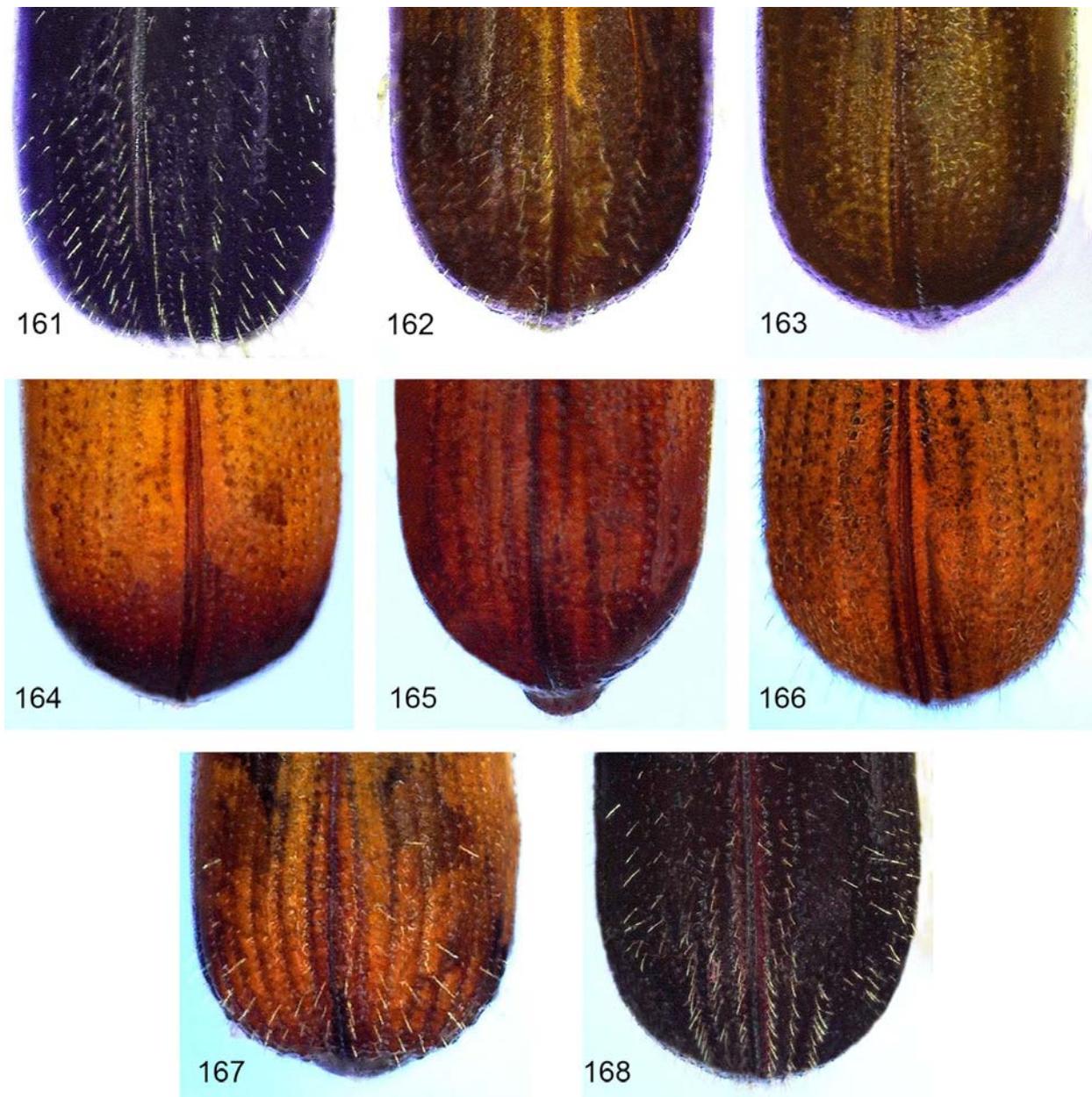
### ***Scolytodes striatulus* Wood**

Figure 167.

*Hylocurosoma striatus* Eggers 1940: 139 (preoccupied).

*Scolytodes striatulus* Wood 1979: 136; Wood and Bright 1992: 399.

**Description (Female).** Length 1.8–2.3 mm, 2.5 times longer than wide; light brown to reddish-brown, darker brown to black on anterior half of pronotum, head and ventral surface. Frons flattened from epistoma to level of upper margin of eyes and laterally nearly from eye to eye, with a large, broad, circular, median, smooth, glabrous, shining area extending from epistomal margin to a point half-way to level of upper margin of eyes, occupying median half of frons, surrounding surface finely, densely punctured with moderately long, incurved setae; epistomal margin straight with distinct long setae extending almost to tip of mandibles. Antennal club oval, somewhat asymmetrical, 1.9 times longer than wide, suture 1 straight, oblique, suture 2 strongly arcuate. Pronotum as long as wide; sides weakly arcuate, broadly rounded anteriorly; anterior margin weakly subcrenulate; anterior one-half with numerous, close, strongly elevated, transverse asperities, surface between asperities shining; posterior half shining, densely, deeply punctured and with small, slightly elevated, transverse rugae or asperities, punctures separated by a distance much less than their diameters. Elytra 1.3 times longer than wide; sides parallel on basal three-fourths; apex broadly rounded; striae moderately impressed, punctured in even, regular rows, punctures large, deeply impressed; interstriae shining, 2.0 times wider than striae, with a median row of weakly impressed punctures, these distinctly smaller than those in striae, each interstriae with a median row of erect setae on basal half, setae 1.5 times longer than interstitial width; interstriae 10



**Figures 161–168.** Declivities of *Scolytodes* spp. **161)** *S. plesiopolitus*. **162)** *S. politus*. **163)** *S. pseudobicolor*. **164)** *S. puertoricensis*. **165)** *S. sabaensis*. **166)** *S. steineri*. **167)** *S. striatulus*. **168)** *S. torresi*.

slightly elevated from base to level of hind coxa. Declivity evenly convex; striae narrower than on disc, more deeply impressed; interstriae convex, each bearing a median row of distinct, small granules and erect setae. Anterior tibia without a tubercle on posterior face.

**Male.** Similar in size and color to female. Frons evenly convex, weakly transversely impressed just above epistoma, upper margin of impression with one to three small granules in a transverse row, sometimes only median granule present; surface above impression moderately shining, densely punctures, minutely reticulate; vestiture sparse, inconspicuous.

**Distribution.** This species is generally distributed throughout the West Indies.

**Specimens examined.** CAYMAN ISLANDS: **Grand Cayman**, west end of Georgetown, light trap, 23.IV.1938 / 17.IV-26.VIII, 1938, Oxf. Un. CAYMAN IS. Biol. Exped., C. B. Lewis, G. H. Thompson (1–

NHML). **DOMINICA**: 6 mi. E. Salisbury, Morne Apion, 2500', 19.8.1986, C. W. and L. B. O'Brien / ex dead tree-fern fronds (2–CNCI). **DOMINICAN REPUBLIC**: Barahona, Barahona, uv trap, 8–29–30.1997, R. Baranowski and C. W. O'Brien (1–CNCI); Province Barahona, nr. Filipinas, Larimar Mine, 26.VI–7.VII.1992, R. E. Woodruff: Skelley, F. Skillman, at light (3–FSCA); Pedernales, 20.5 km N Cabo Rojo, mercury vapor and blacklight, 19 May 1992, R. Turnbow (1–RHTC); Pedernales, 24 km. N Cabo Rojo, 610 m, 19 Aug 1988, wet forest under bark, M. A. Ivie, T. K. Philips and K. A. Johnson (1–WIBF); La Altogracia, Parque del Este, 2.9 km SW Boca de Yuma, 18.21.51N, 68.37.05W, 11 m, 26–28 May 2004 (2–CMNH); Barahona, 2 km E Payoso, mercury vapor and blacklight, 13 July 1996, R. Turnbow (1–RHTC). **GADELOUPE**: Env. de Trois Rivières, Leo Dufau 1904 / “cotype” (2–USNM). **JAMAICA**: Portland Par., Paradise, 4.IV.1975, R. E. Woodruff, blacklight trap (CNCI). **MONTSERRAT**: Centre Hills, Cassava Ghaut, 690 m, 16°45.830'N, 62°12.818'W, 26 June 2000, under bark of recently cut log, M. A. Ivie (22–WIBF, CNCI); Cassava Ghaut, Dry Green Ghaut, 11 June 2002, K. A. Marske (1–WIBF).

**Comments.** Females of this species may be recognized by their larger size, by the rugose appearing posterior half of the pronotum, by the large stria punctures and by the granules on the declivital interstriae. The males may be distinguished by the same characters plus the presence of one to three granules in a transverse row on the frons on the upper margin of the weak, transverse impression.

Two cotypes of *Hexacolus striatus* Eggers in the United States National Museum of Natural History, Washington D. C. were examined.

***Scolytodes torresi* Bright, sp. nov.**

Figure 168.

**Type Material.** **HOLOTYPE** (female) labeled: “CUBA, Terrazas, VI.II.1997, J. Torres, coll.” / “in *Cecropia* leaves” / “HOLOTYPE *Scolytodes torresi* D. E. Bright 2016” (CNCI). **ALLOTYPE** labeled with same data as holotype plus my allotype label (CNCI). **PARATYPES** (2): 1 labeled with same data as holotype (CNCI); 1 labeled: “CUBA: Santiago Prov., Gran Piedra, Segundo Chorrito, 7–17.XII.95, 600 m, km 8, forest stream FIT, S. Peck 95–83” (SBPC).

**Description (Female).** Length 2.2–2.5 mm, 2.1 times longer than wide; black. Frons flattened to very weakly impressed from epistomal margin to two-thirds of distance to upper level of eyes, moderately convex to vertex; surface of flattened area densely punctured, with abundant, short, generally equal-length setae, a few of these may be longer on periphery; epistomal margin straight, with a fringe of long setae, these extending downward over half of mandible. Antennal club oval, 1.4 times longer than wide, suture 1 straight, suture 2 weakly procurved, apical one-quarter of club densely pubescent obscure. Pronotum less than 1.1 times longer than wide, widest at middle; entire dorsal surface shining, generally smooth with fine, minute scratches or very faint reticulation, with dense, moderately large, distinctly impressed punctures, these separated by a distance slightly more or less equal to their diameters; true asperities absent but very low, elevated lines present between punctures on anterior third. Elytra 1.4–1.5 times longer than wide; sides weakly arcuate, apex broadly rounded; discal striae (except 1) not impressed, punctured in slightly irregular rows, punctures moderately large, distinctly impressed; discal interstriae flat, twice as wide as striae, with a median row of irregularly placed, small punctures and a median row of erect, hairlike setae, these separated in a row by less than their length; interstriae 10 acutely elevated on a fine line extending from elytral base to base of declivity. Declivity broadly convex; striae and interstriae as on disc except striae slightly more distinctly impressed. Protibia without a small granule on posterior face.

**Male.** Similar in size and proportions to female. Frons with a strongly elevated, transverse swelling above epistomal margin at level of antennal insertion, lower margin of swelling extending to epistomal margin and fringed with a median, dense brush of setae; surface above swelling convex, densely punctate and minutely reticulate.

**Distribution.** This species is known from Cuba.

**Etymology.** This species is named for the collector, Juan A. Torres.

**Comments.** Adults of this species may be easily recognized by their larger size, by the very large, transverse swelling on the male frons, by the flattened female frons with a dense brush of setae on the epistomal margin and by the habitat.

Adults were found in dying petioles of *Cecropia* leaves.

## SUBFAMILY CRYPTURGINAE

The West Indies representative of this subfamily is characterized by the apparent absence of an antennal funicle (Fig. 398), by the solid, flattened antennal club with an indistinct suture at the extreme apex (Fig. 398) and by the very small size. Figure 398 shows a large pedicel and vaguely shows two, very indistinct, small segments which could be an indication of a 2-segmented funicle and shows a short, chitinized, transverse suture at mid-point of the antennal club.

The subfamily contains, on a world-level, 50 species in one tribe. One species has been found in the West Indies.

## TRIBE CRYPTURGINI

### Genus *Crypturgus* Erichson

*Crypturgus* Erichson 1836: 60; Wood and Bright 1992: 620; Bright and Skidmore 2002: 334 (checklist); Bright 2014: 122.

The sole West Indian member of *Crypturgus* is easily recognized by the antennal characters mentioned above and by the very small size. The antennal club is solid with an indistinct suture at the apex. Most previous keys have characterized members of this genus as having a 2-segmented antennal funicle. As a previously published scanning electron microscope photo shows (Bright 1976), the “funicle” is evidently the pedicel and a true funicle is absent or very indistinct. Photos published by Atkinson on the Internet show a similar condition (Atkinson 2015).

Ten species are listed in this genus by Bright and Skidmore (2002), three of these are known from North America (Wood and Bright 1992) and one of these occurs in the West Indies.

Specimens may be found under the bark of dying pines.

### *Crypturgus alutaceus* Schwarz

Figures 398, 455, 525.

*Crypturgus alutaceus* Schwarz 1894: 17; Wood and Bright 1992: 620; Bright and Skidmore 2002: 95.

**Description (Female).** Length 1.0–1.2 mm, 2.7 times longer than wide; light to dark brown. Frons convex, reticulate, with fine, obscure punctures; vestiture inconspicuous. Pronotum 1.2 times longer than wide, widest at middle; sides evenly arcuate; anterior margin broadly rounded; surface reticulate, weakly shining, with small, slightly impressed, scattered punctures; vestiture inconspicuous. Elytra 1.8 times longer than wide; sides parallel on basal two-thirds, apex narrowly rounded; striae not impressed, punctured in regular rows, punctures large, deeply impressed; interstriae narrower than striae, with minute punctures, each interstriae with a median row of very small, fine setae. Declivity convex, surface as on disc except apical half of interstriae 1 and 2 appear spongy, a condition caused by a group of extremely close, very short, peg-like scales.

**Male.** Similar to female except surface on lower half of declivity not spongy, appearing as on disc.

**Distribution.** This species occurs in the southeastern United States and Cuba.

**Specimens examined. CUBA:** Island record only (9–CNCI).

**Comments.** Adults of this species may be found under the bark of dying or recently dead pines. Adults are readily recognized by the characters given above in the generic diagnosis.

## SUBFAMILY IPINAE

Traditionally, the group of genera included in this taxon has been treated as a distinct subfamily. Wood (1978), in a study of the higher classification of the Scolytidae, decided that the subfamily concept for this group of genera could not be supported and placed all the genera in the subfamily Scolytinae. This resulted in a very large, polyphyletic subfamily containing numerous diverse and unrelated groups of genera and tribes and eliminated any concept of monophylogeny. In my opinion, the Scolytinae of Wood should be subdivided into a number of subfamilies, as done above, each of which would contain related genera and tribes and retain the concept of monophylogeny. Ipiniae is one of those subfamilies that should be recognized.

Members of this subfamily may be characterized by the 3- or 4-segmented antennal funicle (pedicel excluded), by the antennal club which is either basally thickened, obliquely truncate or flattened with distinct sutures, by the flattened tibiae which is broader in the middle or at the distal end and bears numerous, socketed denticles on the outer margin and by the metepisternum that is visible to its posterior end.

Four tribes and 16 genera are included herein in this subfamily.

### KEY TO THE TRIBES AND GENERA OF WEST INDIES IPINAE

1. Mesotibia and metatibia slender, gradually broadened on apical fourth, lateral and apical margins armed by a few, coarse, socketed denticles ..... **2**
- Mesotibia and metatibia expanded to middle, then gradually tapering to apex, apical two-thirds on outer margin armed by numerous, small, close-set socketed denticles (Fig. 371) ..... **8**
- 2(1). Elytral declivity weakly to deeply concave, lateral margins usually armed by tubercles or spines; eye shallowly emarginate or sinuate, lower half distinctly smaller than upper half; protibia with three or four socketed teeth; pronotal asperities distinct, large (tribe Ipinini) ..... **3**
- Elytral declivity evenly convex or very slightly impressed, unarmed by spines or tubercles; eye deeply emarginate, lower half equal in width to upper half; protibia usually with three or more socketed teeth; pronotal asperities usually absent but, when present, fine and abundant (tribe Dryocoetini) ..... **5**
- 3(2). Antennal club obliquely truncate, sutures recurved; third, or lowest, major granule placed on declivital face mesad of lateral margin of declivity, not on lateral margin of elytral declivity (Fig. 528) ..... ***Orthotomicus Ferrari*** (p. 227)
- Antennal club flattened, sutures either procurved or moderately to strongly bisinuate; third, or lowest, major granule placed on lateral margin of elytral declivity ..... **4**
- 4(3). Elytral declivity shallowly impressed, lateral margins bearing small tubercles or spines (Fig. 456); sutures on antennal club moderately to strongly procurved; eye large, very coarsely faceted, its width equal to length of scape, its length more than twice length of scape ..... ***Acanthotomicus Blandford*** (p. 222)
- Elytral declivity deeply concave, lateral margins bearing large tubercles or spines (Fig. 457); sutures on antennal club moderately to strongly bisinuate (Fig. 399); eye small, finely faceted, its width equal to much less than length of scape, its length equal to much less than twice length of scape ..... ***Ips DeGeer*** (p. 223)
- 5(2). Antennal club obliquely truncate, with sutures at apical half (Fig. 400); pronotum as wide as long, widest on posterior third (Fig. 529); pronotum asperate or punctured to base ..... ***Coccotrypes Eichhoff*** (p. 228)
- Antennal club flat, with transverse or strongly procurved sutures, or sutures obsolete, marked by an oblique septum (Fig. 401); pronotum slightly to distinctly longer than wide (Fig. 530); pronotum asperate on anterior slope ..... **6**

- 6(5). Antennal funicle 4-segmented (pedicel excluded); antennal club with strongly procurved sutures (Fig. 401); pronotum distinctly longer than wide ..... *Dendrocranulus Schedl* (p. 240)  
 — Antennal funicle 3-segmented (pedicel excluded); antennal club with straight, transverse sutures or sutures obsolete, marked by an oblique, chitinized septum; pronotum slightly to distinctly longer than wide ..... **7**
- 7(6). Antennal club with distinct straight, transverse sutures (Fig. 461); length 1.5–1.9 mm .....  
 ..... *Neocultus Bright, genus nov.* (p. 248)  
 — Antennal club without distinct sutures but with one oblique, chitinized septum (Fig. 557); length 1.3 mm ..... *Minyotrypetes Bright, genus nov.* (p. 247)
- 8(1). Pregula and adjacent surfaces flush with general ventral surface; antennal club flattened, without visible sutures, basal corneous area reduced, its distal margin strongly procurved (tribe Premnobiini) ..... *Premnobius Eichhoff* (p. 249)  
 — Pregula depressed below general ventral surface; antennal club flattened or obliquely truncate, basal corneous area enlarged, its distal margin recurved (tribe Xyleborini) ..... **9**
- 9(8). Antennal club flattened, with sutures 1 and 2 strongly procurved, both segments 1 and 2 corneous and mostly glabrous except at suture; protibia slender, almost cylindrical, posterior face armed with tubercles; body very slender; anterior margin of pronotum armed by two large serrations (Fig. 537) ..... *Sampsonius Eggers* (p. 270)  
 — Antennal club flattened with sutures straight to very weakly curved or obliquely truncate with sutures not readily visible, but if sutures visible, then only on pubescent, apical portion of club; protibia strongly expanded on apical half; body stout to elongate but not extremely slender; anterior margin of pronotum either unarmed or armed with several to many small serrations ..... **10**
- 10(9). Scutellum cone-shaped, not filling scutellar notch at base of elytra, often not visible, scutellar area with abundant setae (Fig. 539) ..... *Xyleborinus Reitter* (p. 277)  
 — Scutellum triangular-shaped, moderately large, surface flush with surrounding surface of elytra, scutellar area devoid of setae ..... **11**
- 11(10). Posterior half of pronotum roughened, with low asperities (Fig. 533) .....  
 ..... *Ambrosiodmus Hopkins* (p. 251)  
 — Posterior half of pronotum smooth, with minute punctures ..... **12**
- 12(11). Protibia with posterior face inflated and armed by numerous fine tubercles .....  
 ..... *Dryocoetoides Hopkins* (p. 259)  
 — Protibia with posterior face flat, devoid of tubercles or granules ..... **13**
- 13(12) Procoxae contiguous ..... **14**  
 — Procoxae widely to narrowly separated ..... **17**
- 14(13). Posterior half of elytra deeply sulcate, interstriae 3 distinctly elevated and bearing two or three acute granules; elytral apex deeply notched, each elytron separately rounded and produced; body very slender, 3.0 times longer than wide (Fig. 534) ..... *Coptoborus Hopkins* (p. 258)  
 — Posterior half of elytra not deeply sulcate, either gradually sloping or convex or weakly sulcate; elytral apex broadly or narrowly rounded, apex not emarginate, may be very slightly notched at suture; body slender to stout, usually less than 3.0 times longer than wide ..... **15**
- 15(14). Posterior face of antennal club marked by one or two sutures, if one then suture placed at or near middle of club (Fig. 405) ..... *Theoborus Hopkins* (p. 271)  
 — Posterior face of antennal club devoid of sutures or rarely marked by one suture at or very near apex ..... **16**

- 16(15). Pronotum subquadrate, as long as wide to slightly longer than wide, anterior margin very slightly rounded to subtruncate (Fig. 202, 536); posterolateral margin of elytral declivity subacutely elevated from apex of suture to interstriae 7 and usually crenulate or bearing small granules ..... *Euwallacea Hopkins* (p. 262)
- Pronotum distinctly longer than wide, anterior margin broadly rounded (Fig. 540); posterolateral margin of declivity rounded, not elevated and not crenulate or bearing small granules ..... *Xyleborus Eichhoff* (p. 285)
- 17(13). Anterior coxae widely separated by a distance equal to at least half or more of coxal diameter; anterior margin of pronotum rounded, not produced over head and bearing six or more distinct serrations ..... *Xylosandrus Reitter* (p. 306)
- Anterior coxae very narrowly separated by a distance much less than half of coxal diameter; anterior margin of pronotum produced over head and bearing fewer, finer serrations ..... *Cnestus Sampson* (p. 257)

## TRIBE IPINI

### Genus *Acanthotomicus* Blandford

*Acanthotomicus* Blandford 1894b: 89; Wood and Bright 1992: 478; Bright and Skidmore 2002: 292 (checklist); Bright 2014: 124.

The species included in *Acanthotomicus* are closely related to those in *Ips* and *Orthotomicus* but may be distinguished, at least among West Indian species, by the strongly procurved sutures on the antennal club, the absence of large, distinct tubercles or large granules on the lateral margin of the declivity, by the absence of large granules on the declivital face and by the large, coarsely faceted eyes.

Nearly 100 species of *Acanthotomicus* have been recorded from tropical and subtropical North and South America (Bright and Skidmore 2002). One species is herein recorded from the West Indies.

Most species breed in broken, cut, or recently dead branches and limbs. Wood (2007) states that nearly half of the Neotropical species breed in the lower bole of large trees.

### *Acanthotomicus mimicus* (Schedl)

Figures 456, 526.

*Mimips mimicus* Schedl 1961a: 227.

*Acanthotomicus mimicus*: Wood and Bright 1992: 482; Bright and Skidmore 1997: 107; Bright 2014: 125.

**Description (Male).** Length 1.9–2.4 mm, 2.7–2.9 times longer than wide; light brown. Frons convex at upper level of eyes, shallowly, broadly, transversely flattened above epistoma; surface densely and closely punctured; vestiture consisting of long, erect setae over entire surface, shorter and denser along epistomal margin. Antennal club circular, as long as wide, sutures strongly arcuate. Pronotum 1.1 times longer than wide; sides weakly arcuate, anterior margin broadly rounded, unarmed; anterior slope with numerous, small, scattered asperities; posterior area shining, punctate, punctures large, close; median line slightly elevated, smooth. Elytra 1.6 times longer than wide; sides parallel on anterior three-fourths, posterior margin broadly rounded; striae not impressed, punctures large and close; interstriae wider than striae, punctures as large and as numerous as those in striae, making striae and interstriae difficult to distinguish. Declivity abrupt, steep; at upper level, a distinct tooth located in interstriae 2, a larger tooth located in interstriae 3 and on the ridge further down, three blunt tubercles are located equal distance from one another; apical margin slightly elevated, undulate; declivital face shining, broadly impressed, densely, shallowly punctured. Vestiture consisting of erect strial and interstitial setae, those in interstriae twice as long as those in the striae.

**Female.** Similar to male except frons more evenly convex, not impressed above epistoma and granules and nodules on elytral declivity smaller.

**Distribution.** This species occurs from southern Mexico to Brazil and in the West Indies it is known from Dominica, Saint Vincent, Grenada, the Dominican Republic and Jamaica.

**Specimens examined.** **DOMINICA:** Springfield Est., 15.3465N, 61.3691W, 29 May 2011, 35 m, L. L. Ivie, colr., yellow pan/FIT trap (2–WIBF, CNCI); same locality, 04–06 June 2011, L. L. Ivie, colr., Lingren funnel trap (2–WIBF, CNCI). **DOMINICAN REPUBLIC:** San Cristobal, 35 m, J. and S. Klapperich (2–NHMB); Santo Domingo, 30 m, January 22, 1973, J. and S. Klapperich (1–CNCI); Hato Mayor, Parque Los Haitise, 3 km W Cueva de Arena, 19.04N, 69.29W / 20 m, 7–9 July 1992, R. Davidson, J. Rawlins, S. Thompson, C. Young, mesic lowland forest (1–CMNH); Durarte, Reserva Loma Quita Espuela, El Cadillar, 6.7 km NE San Francisco de Macoris, 19.20.12N, 70.08.59W / 280 m, 5 Apr 2004, R. Davidson, J. Rawlins, C. Young, weedy regrowth with coffee, cacao, uv light (1–CMNH); M. Nouel, Banao, uv trap, IX.5.1997, C. W. O’Brien and R. Baranowski (1–CNCI); Province Hato Mayer, Par. Nac. Los Haitises, W. of Sabana de la Mar, Bosque Humido, 01–02 Apr 1992, M. A. Ivie and D. Sikes (1–WIBF). **GRENADA:** Saint Andrew, Mirabeau Agriculture Laboratory, various dates 1990 and 1991, J. Telesford, R. E. Woodruff or A. Thomas, light trap (10–SBPC, CNCI); Parish Saint Andrews, Pearls Airport, 7.VI.1990, M. C. Thomas (1–RHTC). **JAMAICA:** Trelawny Parish, Good Hope, 11 August 1966, A. T. Howden (1–CNCI). **SAINT VINCENT AND THE GRENADINES: Bequia Island,** Cinnamon Garden, N13°36', W61°14' / dry shrub woodland uv light, 3.III.2008, 200 m, S. Peck and M. de Silva (1–SBPC); **Saint Vincent,** Stubbs, 9.VI.2007 / pastures, fallow-field uv light, S. and J. Peck (1–SBPC); **Union Island,** Chatham Bay, Water Rock Reserve, S. Peck / N12°36', W61°26', 14–20.VIII.2009, uv traps-tall forest (1–SBPC).

**Comments.** Besides the typical ipine characters, adults of this species may be easily recognized by the steep, concave elytral declivity armed by two pairs of acute granules on the upper portion of the lateral margin and several rounded nodules on lower half and by the strongly procurved antennal sutures. It is distinctly different from the other Ipini representatives in the West Indies.

Wood and Bright (1992) and Wood (2007) record *Spondias mombin* as a host plant. Adults mine in the phloem of recently dead and dying stems (Wood 2007).

### Genus *Ips* DeGeer

*Ips* DeGeer 1775: 190; Wood and Bright 1992: 484; Bright and Skidmore 1997: 198; Bright and Skidmore 2002: 377 (checklist); Bright 2014: 125.

*Ips* is a common, well-known genus of 45 species known from throughout the Holarctic Region, south to Nicaragua, North Africa, India and Australia. Four species from the West Indies are treated herein. All infest various species of native or introduced pines. In spite of the abundance and economic importance of included species, the taxonomy of the genus has been chaotic.

All species occur in the boles and larger limbs and branches of the host tree and all are polygamous and phleophagous. The parental galleries are constructed on the phloem-cambium interface, eggs are placed in niches along the gallery wall and larvae feed outward from the parental gallery (Cognato 2015).

Wood (2007) states that *Ips calligraphus* and *I. grandicollis* have been introduced into the West Indies (Bahamas, Cuba, Hispaniola) but I believe their occurrence in the West Indies is the result of natural distribution and not introductions.

### Key to the species of *Ips* in the West Indies

1. Each lateral margin of elytral declivity armed by four spines; sutures on antennal club bisinuate; length 2.1–3.0 mm; Bahamas ..... ***I. avulsus* (Eichhoff)** (p. 224)
- Each lateral margin of elytral declivity armed by five or six spines; sutures on antennal club strongly angulate; length 2.9–5.9 mm ..... **2**
- 2(1). Each lateral margin of elytral declivity armed by six pairs of spines; length 4.1–4.9 mm; Bahamas, Cuba, Hispaniola ..... ***I. calligraphus interstitialis* (Eichhoff)** (p. 224)

- Each lateral margin of elytral declivity armed by five pairs of spines; length 3.0–5.9 mm ..... **3**
- 3(2) Distance from tip to tip between first and second declivital spines almost equal to distance between second and third; length 3.7–4.7 mm; Bahamas, Cuba, Dominican Republic ..... ***I. grandicollis* (Eichhoff)** (p. 226)
- Distance from tip to tip between first and second declivital spines distinctly greater than distance between second and third; length 3.1–3.3 mm; Jamaica .. ***I. cribricollis* (Eichhoff)** (p. 225)

***Ips avulsus* (Eichhoff)**

Figure 169.

*Tomicus avulsus* Eichhoff 1868a: 402.

*Ips avulsus*: Wood and Bright 1992: 491; Bright and Skidmore 1997: 109; Bright and Skidmore 2002: 74; Bright 2014: 126; Cognato 2015: 361.

**Description (Female).** Length 2.1–3.0 mm, 2.6 times longer than wide; dark reddish-brown. Frons broadly convex, slightly transversely impressed above epistoma; surface shining, deeply, closely punctured with a large, rounded, median tubercle near center; epistomal margin coarsely granulate. Antennal club oval, 1.5 times longer than wide, with two bisinuate sutures. Pronotum 1.2 times longer than wide, widest at middle; sides straight on basal two-thirds, apex broadly rounded; anterior slope coarsely asperate; posterior portion smooth, shining, with deep, coarse, close punctures. Elytra 1.4 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae punctured in regular rows, punctures deeply impressed, somewhat smaller near declivity and base; discal interstriae as wide as striae, smooth, shining, impunctate except for a few punctures near declivity. Declivity deeply excavated; lateral margins elevated and bearing four, small spines, spines 2 and 3 basally connected; declivital face shining, densely punctured.

**Male.** Similar to female except declivital spines slightly larger.

**Distribution.** This species is common throughout eastern and southeastern United States as far west as Kansas and eastern Texas. It is recorded from the Bahamas, but probably occurs in the West Indies wherever native pines occur.

**Specimens examined.** **BAHAMAS: Andros Island**, Maidenhair Coppice, BLT, 11.VI.2004, M. C. Thomas (1–FSCA); Forfar Field Station, mercury vapor and blacklight, 5 June 2004, R. Turnbow (3–RHTC, CNCI); Forfar Field Station, nr Stafford Creek, 22–26.VII.2006, M. C. Thomas, T. R. Smith, uv trap in coastal coppice (2–FSCA). **Great Abaco Island**, Abaco, V-1967, R. Pawsey, on *Pinus caribaea* (2–NHML); Marsh Harbor, 25.VIII.1971, dead in pine log, H. Howden (1–CNCI). **New Providence Island**, Carmichael area, 25°01'N, 77°25'W, 14 April 2007 / at blacklight in Caribbean pine forest and scrub, W. E. Steiner and J. M. Swearingen (1–USNM).

**Comments.** Adults of this species may be distinguished from other *Ips* species in the West Indies by the smaller size and by the presence of four spines or small granules on the lateral margins of the declivity on each elytron.

***Ips calligraphus interstitialis* (Eichhoff)**

*Tomicus calligraphus* Germar 1824: 461.

*Ips calligraphus*: Wood and Bright 1992: 494; Bright and Skidmore 1997: 109; Bright and Skidmore 2002: 75; Bright 2014: 126; Cognato 2015: 361.

*Tomicus interstitialis* Eichhoff 1869: 273 (Jamaica).

*Ips calligraphus interstitialis*: Lanier, Teale and Pajares 1991.

**Description (Female).** Length 4.1–4.9 mm, 2.6 times longer than wide; black to dark brown with lighter legs and antennae. Frons convex, sometimes slightly impressed on each side of a raised median area; surface distinctly, evenly granulate except for a large median tubercle above epistomal margin; vestiture consisting of erect, hairlike setae, denser along epistomal margin. Antennal club oval, 1.1 times

longer than wide, sutures strongly arcuate. Pronotum 1.2 times longer than wide; sides slightly arcuate, anterior margin broadly rounded; anterior slope with numerous, scattered, small asperities; posterior portion smooth, shining, punctures moderately large and deep, coarser towards lateral margins. Elytra 1.5 times longer than wide; sides parallel on anterior three-fourths, broadly rounded behind; discal striae moderately impressed, punctures coarse; discal interstriae convex, as wide or wider than striae, with punctures and setae, these more distinct near declivity and on lateral areas. Declivity abrupt, steep; lateral margin with six spines, third spine larger; punctures on declivital face slightly smaller than striae punctures.

**Male.** Similar in most respects to female except the median tubercle on the frons is larger, the general body sculpture is coarser and the third declivital spine is notched on the ventral side near tip.

**Distribution.** The nominate species occurs from eastern Canada, throughout most of the United States, south to Honduras. The subspecies, *interstitialis*, occurs in the West Indies where pines naturally occur.

**Specimens examined.** **BAHAMAS: Great Abaco Island,** Marsh Harbor, 25.VIII.1971, dead in pine log, H. Howden (1–CNCI). **DOMINICAN REPUBLIC:** Province La Vega, La Cienega, 1100 m, 29 July 1999, at light, M. A. Ivie and K. A. Guerrero (4–WIBF); La Vega, Monabao, 29 July 1999, M. A. Ivie and K. Guerrero, in pine sawmill (1–WIBF); La Vega, Jarabacoa, VIII.1980, A. Norrbom, under bark of standing pine and under bark of rotting pine (30–FMNH); La Vega, 2.5 km SW Pinar Bonito, 18–51N.70–43W, 1430 m, 26 Nov 1992 / J. Rawlins, R. Davidson, M. Klinger, S. Thompson, riparian vegetation near stream in pine woodland (1–CMNH); Plan Sierra, 1987.03.17, Lars Adlerz (2–USNM); Province Dajabón, Restauración, UTM 19Q, 215383m.E, 2134240m.N, 617 msnm, 26.III.2014: Córdón, *Pinus occidentalis* and same locality, 220936m.E, 2133814m.N, 775 msnm, 26.III.2014, en Pino (9–CNCI). **HAITI:** Fermathe, Baptist Haiti Mission, 18°27'N, 72°18'W / 4.IV.1985, pheromone trap *Pinus occidentalis*, R. Billings, collr. (3–CNCI). **JAMAICA:** Clarendon Parish, Christiana, February 1966, K. Hall (3–IJCK).

**Records from literature.** **BAHAMAS: Andros Island,** Island record only (Turnbow and Thomas 2008); **CUBA:** Island record only (Vázquez et al. 2003).

**Comments.** The six pairs of spines on the lateral margin of the declivity and the large size will readily distinguish the adults of this species. The galleries of this species are constructed under the bark on the trunk and larger limbs of various species of pines (*Pinus caribaea* in Jamaica).

Lanier et al. (1991) regard the Caribbean population as a distinct subspecies that differs from the other populations by the morphology, karyology, ecology and distribution. Wood (1982) and Cognato (2015) regards *I. interstitialis* as a synonym of *I. calligraphus*; however, I prefer to follow Lanier et al. (1991) and recognize the West Indian population as a subspecies.

### *Ips cribricollis* (Eichhoff)

Figures 171, 399, 457, 527.

*Tomicus cribricollis* Eichhoff 1869: 273.

*Ips cribricollis*: Wood and Bright 1992: 508 (as synonym of *I. grandicollis*); Bright and Skidmore 2002: 77; Bright 2014: 127; Cognato 2015: 362.

**Description (Female).** Length 3.1–3.3 mm, 2.6 times longer than wide; black to dark brown with lighter legs and antennae. Frons convex, sometimes slightly impressed on each side of a raised median area, median fovea absent; surface distinctly, evenly granulate with a slightly larger granule slightly above epistomal margin, no granules more distinct or larger than others. Antennal club as in *I. grandicollis*. Pronotum slightly less than 1.2 times longer than wide; sides slightly arcuate, anterior margin broadly rounded; anterior slope with numerous, scattered, small asperities; posterior portion smooth, shining, punctures moderately large and deep, coarser towards lateral margins. Elytra 1.5 times longer than wide; sides parallel on anterior three-fourths, apex broadly rounded; discal striae moderately impressed, punctures coarse, deep, close; discal interstriae convex, as wide or slightly wider than striae, interstriae 2–4 with a median row of small punctures and fine setae throughout length, remainder punctate near declivity. Declivity abrupt, steep; lateral margin with five spines, the distance between tip of first spine to the second distinctly greater than distance between tips of second and third spine, spines 2 and 3 rising from a common base, third spine largest, notched on ventral side; punctures on declivital face slightly smaller than striae punctures.

**Male.** Similar in most respects to female except the general body sculpture coarser.

**Distribution.** This species occurs from southern New Mexico and western Texas south to Honduras; in the West Indies it is known from the Dominican Republic and Jamaica.

**Specimens examined. JAMAICA:** Cinchona, June 1979, *Pinus caribaea*, E. Garraway (6–CNCI).

**Records from literature. DOMINICAN REPUBLIC:** Island record only (Cognato 2015). **JAMAICA:** Bull Head, *Pinus patula* and Clydesdale: *caribaea* (Lanier 1987).

**Comments.** Wood (1977) placed this species in synonymy under *I. grandicollis* and continued this position in his 1982 monograph and in the 1992 Catalog of the Scolytidae (Wood and Bright 1992). However, Hopping (1965) gave detailed information to distinguish the two species. Likewise, Lanier (1970), using controlled mating experiments, demonstrated total reproductive isolation of these species and showed consistent differences in the morphology and cytology. Further investigations by Lanier (1987), utilizing comparison of type material of these two species, showed that the species differed by external morphology, the pars stridens of the females and by the characteristics of the aedeagus. Cognato and Vogler (2001) recognize *I. cribricollis* as a distinct species, based on molecular data.

Garraway (1986) reported on the biology of *I. grandicollis* in Jamaica but Lanier (1987), after examination of the specimens used by Garraway, confirmed that they were specimens of *I. cribricollis*. The occurrence of this species in Jamaica, where no native pines occur, is evidently a recent range extension caused by the introduction of infested material or by natural distribution into planted pine stands.

### ***Ips grandicollis* (Eichhoff)**

Figure 170.

*Tomicus grandicollis* Eichhoff 1868a: 402.

*Ips grandicollis*: Wood and Bright 1992: 506; Bright and Skidmore 1997: 111; Bright and Skidmore 2002: 77; Bright 2014: 127; Cognato 2015: 363.

**Description (Female).** Length 3.7–4.7 mm, 2.6 times longer than wide; black to dark brown with lighter legs and antennae. Frons convex; surface distinctly, evenly granulate except for a slightly larger median tubercle above epistomal margin, this tubercle sometimes reduced in size, almost equal to adjacent tubercles; epistoma granulate. Antennal club oval, 1.1 times longer than wide, sutures strongly arcuate. Pronotum 1.2 times longer than wide; sides slightly arcuate, anterior margin broadly rounded; anterior slope with numerous, scattered, small asperities; posterior portion smooth, shining, punctures moderately large and deep, coarser towards lateral margins. Elytra 1.5 times longer than wide; sides parallel on anterior three-fourths, apex broadly rounded; discal striae moderately impressed, punctures coarse, deep, close; discal interstriae convex, as wide or slightly wider than striae, impunctate on basal half, each interstriae with a median row of small punctures and fine setae, more so near declivity and on lateral areas. Declivity abrupt, steep; lateral margin with five spines, the distance between tip of first spine to the second almost equal to distance between tips of second and third spine, spines 2 and 3 separated at base, third spine largest, notched on ventral side; punctures on declivital face equal to or slightly smaller than strial punctures.

**Male.** Similar in most respects to female except surface of frons with a distinct, shining, deep fovea and bears a large median tubercle just above epistoma and the general body sculpture coarser.

**Distribution.** This species is common throughout eastern North America, Mexico, Central America and the West Indies where native pines occur.

**Specimens examined. BAHAMAS: Andros Island,** Forfar Field Station, mercury vapor and blacklight, 5 June 2004, R. Turnbow (1–RHTC); Forfar Field Station, nr. Stafford Creek, BLT, 7.VI.2004, M. C. Thomas (1–FSCA); Forfar Field Station, nr Stafford Creek, 22–28.VII.2006, M. C. Thomas, T. R. Smith, uv trap in coastal coppice (1–FSCA); Owens Town, 23.VII.2006, M. C. Thomas, T. R. Smith, uv trap in disturbed habitat (1–FSCA); Maidenhair Coppice, BLT, 11.VI.2004, M. C. Thomas (7–FSCA). **Grand Bahama Island,** Freeport, 20–27.VI.1987, M. E. Steiner, M. J. and M. Molineaux (1–USNM); Pine Ridge, May 13, 1953 / at light / E. B. Hayden and G. B. Rabb (1–AMNH). **New Providence Island,** Carmichael area, 25°01'N, 77°25'W, 14 April 2007 / at blacklight in Caribbean pine forest and scrub, W. E. Steiner and J. M. Swearingen (9–USNM). **South Bimini Island,** August 1951, C. and P.



**Figures 169–171.** Declivities of *Ips* spp. **169)** *I. avulsus*. **170)** *I. grandicollis*. **171)** *I. cribricollis*.

Vaurie (1–CNCI). **CUBA:** Holguin Province, Parque Nacional La Mensura, mixed pine forest, 20.48275°N, 75.80745°W, 716 m, mercury vapor light, 10.V.2013, A. B. T. Smith, F. Cala-Riquelme (2–CMNO); Sierra de Nipe, Rio Piloto, 540 m, 07 July 1990, M. A. Ivie (1–WIBF). **DOMINICAN REPUBLIC:** Province La Vega, Monabao, 29 July 1999, M. A. Ivie and K. A. Guerrero, in pine sawmill (2–WIBF); Province La Vega, La Cienega, 1100 m, 19°04.07'N, 70°51.68'W, 29 July 1999, at light, M. A. Ivie and K. A. Guerrero (4–WIBF); Province La Vega, 2.5 km SW Pinar Bonito, 18–51N, 70–43W, 1430 m, 26 Nov. 1992 / J. Rawlins, R. Davidson, M. Klinger, S. Thompson, riparian vegetation near stream in pine woodland (1–CMNH); La Vega, Jarabacoa, 10.VIII.1980, A. Norrbom (3–CMNH).

**Record from literature. BAHAMAS: Andros Island,** Money Point (Turnbow and Thomas 2008).

**Comments.** Adults of this species are similar to those of *I. cribricollis* but differ by their larger size, by the differences in position of the upper three spines on the lateral margins of the declivity, by the deep, shining fovea and the distinct tubercle above the epistomal margin on the frons. It has been confused with *I. cribricollis* in most recent literature (see comments under *I. cribricollis*).

### Genus *Orthotomicus* Ferrari

*Orthotomicus* Ferrari 1867: 44; Wood and Bright 1992: 467; Bright and Skidmore 2002: 389 (checklist); Bright 2014: 130.

Among the West Indian fauna, the single species of *Orthotomicus* is most closely related to species in *Ips* but differs by the position of the declivital spines and granules, e. g. the lowest pair of granules (or spines) are not positioned on the declivital margin, as they are in *Ips*, but are placed slightly mesad on the declivital face. Additionally, species in *Orthotomicus* may be recognized by the obliquely truncate antennal club and by the rounded lower margin of the elytral declivity.

The definition of this genus has been confused almost since its description by Ferrari in 1867. Various authors have placed species in either *Ips*, *Orthotomicus*, or *Pityokteines* Fuchs or other related genera and species have then been transferred back and forth among genera, often without sufficient rationale. Wood (2007) added further confusion by placing *Pseudips* Cognato, a distinctive, monophyletic species group previously in *Ips*, in synonymy under *Orthotomicus*. *Pseudips* is a distinctive genus, the members of which are characterized by biological, morphological and genetic (DNA) characters and Wood's synonymy is not correct and is not recognized by me or by any other worker. This is not the place to make significant taxonomic changes in this tribe, but definitely a revision, based on traditional characters combined with DNA studies, is needed.

One species of *Orthotomicus* occurs in the West Indies, on those islands with stands of native pines.

***Orthotomicus caelatus* (Eichhoff)**

Figures 458, 528.

*Tomicus caelatus* Eichhoff 1868a: 402.

*Orthotomicus caelatus*: Wood and Bright 1992: 467; Bright and Skidmore 1997: 104; Bright and Skidmore 2002: 70; Bright 2014: 130.

**Description (Male).** Length 2.4–3.3 mm, 2.5 times longer than wide; dark reddish-brown with lighter legs and antennae. Frons convex, sometimes slightly impressed above epistomal margin; surface distinctly, evenly granulate-punctate with larger granules along epistomal margin. Antennal club round, obliquely truncate, with two transverse sutures fringed with short setae on apical half. Pronotum 1.1 times longer than wide; sides parallel to slightly arcuate, anterior margin broadly rounded, unarmed; anterior slope with numerous, scattered, small asperities; posterior portion smooth, shining, with large, close deep punctures these separated by a distance less than their diameters. Elytra 1.5 times longer than wide; sides parallel on anterior three-fourths, apex broadly rounded; discal striae moderately impressed, with coarse, deep punctures in even rows; discal interstriae convex, as wide or slightly wider than striae, each interstriae with a median row of small punctures and fine setae, more so near declivity and on lateral areas. Declivity abrupt, steep, broadly excavated; declivital face smooth, shining; lateral margin weakly to strongly granulate, with two larger, acutely pointed granules, one at base of interstriae 2, another at junction of interstriae 3 and 4 and placed on an enlarged swelling; a third smaller granule is placed at level of junction of interstriae 6 and 7 and placed on declivital face mesad of lateral margin.

**Female.** Similar in most respects to male except declivital excavation shallower and granules on lateral margin smaller.

**Distribution.** This species is known from throughout North America and in the West Indies in Bahama. It probably occurs wherever native pines occur in the West Indies.

**Specimens examined. BAHAMAS: Andros Island,** San Andros, Robinson's Place, J. Browne, 10.VI.1987, wet pine and blacklight, 87-41J (1-CNCI).

**Comments.** Adults of this species may be easily recognized by the broadly excavated elytral declivity with the lateral margins strongly granulate and the declivital face bearing a pair of smaller, acute granules mesad from the lateral margin.

Bright and Skidmore (1997) list the Bahamas as a new locality record without additional data. The complete data is recorded above.

**TRIBE DRYOCOETINI****Genus *Coccotrypes* Eichhoff**

*Coccotrypes* Eichhoff 1878a: 391; Wood and Bright 1992: 591; Bright and Skidmore 2002: 315 (checklist); Bright 2014: 136.

Species in this genus may be distinguished from those in *Dendrocranulus* by the obliquely truncate antennal club, by the presence of two or three socketed denticles on the lateral margin of the protibia, by the often convergently aciculate convex frons, by the evenly convex elytral declivity and by the different habits. It is not closely related to *Dendrocranulus*.

Species of this genus are parthenogenetic and males are very rare, flightless and much smaller than females with morphological characters poorly displayed. Breeding takes place in seeds, fruit, leaf petioles, under bark etc. Females are often collected in leaf litter where they evidently aestivate. Males usually do not leave the breeding site and therefore are almost never collected using the passive trap system used by most collectors. Dissection of the nest gallery may yield males. Males are not described below.

Bright and Skidmore (2002) record 131 species worldwide; nine are recorded herein from the West Indies. Wood (1982, 2007) comments that most, if not all, New World species have been introduced through commerce or transported and introduced by early man. However, during this study it became apparent that the fauna was considerably more diverse than Wood indicates and there are probably a number of native species. Only a comprehensive revision will solve this question.

As stated above, this genus is desperately in need of a thorough revision. Most of the previously described species included herein were compared to either type specimens or to specimens previously compared to the types by other workers. However, the identification of species is difficult and further study, utilizing both molecular and morphological characters, is urgently needed.

### Key to the species of *Coccotrypes* in the West Indies

(Females only)

1. Anterior margin of the pronotum with a distinct row of erect serrations; each stria puncture on elytra bearing an erect or recumbent seta as long as or longer than diameter of stria puncture ..... **2**
  - Anterior margin of pronotum without a row of serrations; each stria puncture on elytra usually not bearing setae or, if setae are present, then they are minute, barely visible and usually much shorter than diameter of stria puncture ..... **5**
- 2(1). Body slender, 2.5 times longer than wide; stria setae erect, twice as long as those in interstriae; length 1.3–1.7 mm; widely distributed ..... ***C. robustus* Eichhoff** (p. 239)
  - Body stouter, 2.1–2.3 times longer than wide; stria setae recumbent, distinctly shorter than interstitial setae ..... **3**
- 3(2). Pronotal asperities very small, twice as wide as long, widely separated, sparse; length 1.7–2.3 mm, 2.3 times longer than wide ..... ***C. distinctus* (Motschulsky)** (p. 235)
  - Pronotal asperities abundant, close, larger, two to four times wider than long ..... **4**
- 4(3). Length 1.5–2.0 mm; mature color dark brown to almost black; most stria setae equal to or shorter than diameter of stria puncture ..... ***C. carpophagus* (Hornung)** (p. 231)
  - Length 1.8–2.5 mm; mature color light to dark reddish-brown; each stria seta distinctly longer than diameter of stria puncture ..... ***C. dactyliperda* (Fabricius)** (p. 234)
- 5(1). Pronotum smooth, shining, entirely devoid of asperities; pronotal punctures shallow, widely separated, a few with a minute granule on margin; length 1.4–2.0 mm; widely distributed ....
  - ..... ***C. advena* Blandford** (p. 230)
  - At least anterior half of pronotum with distinct, small to large asperities ..... **6**
- 6(5). Adults less than 1.6 mm in length; pronotal asperities small, widely separated, surface between asperities shining ..... **7**
  - Adults larger, 1.7–2.5 mm; pronotal asperities variable, either moderately coarse and close or very small and widely separated, surface between asperities smooth ..... **8**
- 7(6). Stria punctures large, as wide as discal interstriae; asperities on anterior slope of pronotum very small, obscure, widely separated, very weakly elevated; length 1.4–1.6 mm; Barbados, Dominica, Guadeloupe ..... ***C. incertus* Bright, sp. nov.** (p. 236)
  - Stria punctures very small, obscure, weakly impressed, much narrower than discal interstriae; asperities on anterior slope of pronotum slightly larger, closer, more strongly elevated; 1.3–1.6 mm; Barbados, Dominica, Guadeloupe, Puerto Rico ..... ***C. precarius* Bright, sp. nov.** (p. 237)

- 8(6). Adults very slender, 2.5–2.6 times longer than wide; declivity sloping, with narrowly flattened, scalelike interstitial setae, these as long as interstitial width; length 1.8–1.9 mm: Florida .....  
 ..... *C. vulgaris* (Eggers) (p. 240)
- Adults stouter, 2.3 times longer than wide; declivity with slender, hairlike interstitial setae ... 9
- 9(8). Pronotal asperities fine, widely spaced, those on posterior portion very small to absent; length 2.2–2.5 mm; Guadeloupe, Jamaica, Martinique, Virgin Islands; in *Rhizophora mangle* propagules .....  
 ..... *C. rhizophorae* (Hopkins) (p. 238)
- Pronotal asperities coarse, close, those on posterior portion equal in size; length 1.7–2.4 mm; widely distributed in phloem and fruits of many hosts ..... *C. cyperi* (Beeson) (p. 232)

### *Coccotrypes advena* Blandford

Figure 172.

*Coccotrypes advena* Blandford 1894b: 100; Wood and Bright 1992: 592; Bright and Skidmore 1997: 130; Bright and Skidmore 2002: 91; Bright 2014: 136.  
*Thamnurgides cubanus* Eggers 1934: 79 (Cuba).

**Description (Female).** Length 1.4–2.0 mm, 2.2 times longer than wide. Frons convex; surface finely convergently aciculate on lower half, moderately shining, with a few, small, scattered granules and scattered, long, fine setae; median longitudinal line broad, weakly elevated to not elevated, shining. Pronotum 1.1 times longer than wide, widest on basal half; sides broadly arcuate, abruptly converging to narrowly rounded, unarmed anterior margin; surface shining, devoid of asperities, with scattered, obscure punctures and scattered, very minute granules on posterior half; vestiture consisting of long, scattered setae over surface. Elytra 1.4 times longer than wide; sides parallel on anterior two-thirds, apex narrowly rounded; discal striae punctured in even rows, punctures large, distinctly impressed, without setae; discal interstriae as wide as or wider than striae, smooth, each with a median row of erect, long setae, these 2.0 or more times longer than interstitial width, narrowly flattened or spatulate at tip. Declivity evenly convex, surface as on disc except interstitial setae slightly more flattened at tip.

**Distribution.** This species occurs throughout the Old World tropics and has been introduced into southern Florida and Suriname. It occurs throughout the West Indies.

**Specimens examined.** **CUBA:** Camaguey, Sierra de Cubitas, Res. Ecol. Limones-Tuabaquey, Hojo de Bonet, 21.61027–77.78371, 14.V.2013, 143 m, A Deler Hernandez, 2013–010, sinkhole forest litter (7–CMNO); Santiago Province, Gran Piedra, Met. Radar, 6.XII.1995, 1100 m, elfin forest flight intercept trap, S. Peck (1–SBPC); Santiago Province, Gran Piedra, Isabelica, 6.XII.1995, 1100 m, elfin forest litter, S. Peck; Santiago Province, Gran Piedra, road km 4, 9.XII.1995, 150 m, yellow pans, L. Masner (1–CNCI); Santiago Province, 6 km NE Siboney, Rio Juragua, 150 m, 7.XII.1995, tree base litter, S. Peck (10–SBPC); Santiago Province, 6 km NE Siboney, Rio Juragua, 150 m, 16.XII.1995, log and leaf litter, S. Peck (1–SBPC); Santiago Province, 6 km NE Caney, Arroyo Grovert, 300 m, leaf and log litter, S. Peck (11–SBPC); Santiago Province, Gran Piedra, Segundo Chorrito, 7.XII.1995, 600 m, km 8, tree base litter, S. Peck (12–SBPC); Santiago Province, Gran Piedra, Segundo Chorrito, 7–17.XII.1995, 600 m, km 8, forest stream flight intercept trap, S. Peck (7–SBPC). **DOMINICA:** Saint David Parish, Emerald Pool Trail, 20 June 2004, R. Turnbow (1–RHTC); Saint George Parish, Trafalger Falls Trail, 25 June 2004, R. Turnbow (2–RHTC); Springfield Estate, 330–360 m, 30.V-16.VI.2004, S. and J. Peck, mature second forest flight intercept trap (1–SBPC); Springfield Estate, Mt. Joy House, 400 m, 31.V-16.VI.2004 / wet montane forest flight intercept trap, S. and J. Peck (1–SBPC); Springfield Estate, 560–650 m, ridge-top forest and montane rainforest, various dates in 2004, S. and J. Peck (4–SBPC). **DOMINICAN REPUBLIC:** Barahona, 7 km NW Paraiso, 220 m, rainforest remnants, 27.XI-4.XII.1991, intercept trap, Masner and Peck (5–SBPC); Province La Vega, near Buena Vista, Hotel La Montana, 10 April 1992, in pool, M. A. Ivie, D. S. Sikes and W. Lanier (3–WIBF); Province La Vega, Contanza, 1150 m, 30 Aug 1988, mixed secondary forest, M. A. Ivie, T. K. Philips and K. A. Johnson (1–WIBF); Province La Vega, Jarabacoa, 13 November 1984; and P. Spangler and R. Faitoute / brook in sugar cane field (1–USNM); Province La Vega, 10 km NE Jarabacoa, Hotel Montana, forest, 18.VII-4.VIII.1995, 550 m, flight intercept trap, S. and J. Peck (1–SBPC); Province Hato Mayor, Par. Nac. Los Haitises, W. of Sabana de la Mar, bosque humido, 01 April 1992, litter in buttresses (3–WIBF); Province Monte Plata, 3 mi W Bayagua, Hwy. 23 at Rio Sabana, 27 August 1997: W. Kovarik, riparian leaf litter (1–WIBF); San Cristobal Province, Borbon Cuevas Pomier, tropical deciduous forest flight intercept trap, 13–28.VII.1995, S. and J. Peck (2–SBPC). **GADELOUPE:** Basse-Terre: Pigeon Trace Poirier, N16°08.83', W61°45.22'

/ humid forest flight intercept trap, 350 m, 14–31.V.2012, S. Peck (9–SBPC, CNCI); Basse-Terre: Rivière Sens, Sentier Houëlemont, N15°58.93, W61°42.62, 80 m, 19–31.V.2012, humid forest flight intercept trap, S. Peck (4–SBPC); Basse-Terre: P. N. Guad., Maison de la Forêt, N16°1769', W61°69.39' / wet forest flight intercept trap, 250 m, 14–31.V.2012 (10–SBPC, CNCI); Basse-Terre: Morne a Louis, Route de St. Leon, various dates in 2012, wet cloud forest, 710–728 m, R. Anderson (46–CMNO, CNCI). **HAITI:** Dept. l'Ouest, 20 mi. N Camp Perin, 24 May 1950, H. B. Mills (1–CNCI). **MARTINIQUE:** Ansecerom, 30.VII.1999, D. Roguet (1–CNCI); Reserve Piton Carbel, RF de Fond-Baton, piege vitre, 2005, J. Touroult (21–CNCI); 4 km N Ste-Luce, Forêt Montravail, 300 m, N14°29.9, 60°55.7, 11–28.VII. 2012, humid forest flight intercept trap, S. Peck (1–SBPC); 4 km SW Le Marin, Morne Aca, 260 m, N14°27.8, W60°53.9 / humid forest hilltop clearing flight intercept trap, 13–28.VI.2012, S. Peck (7–SBPC, CNCI). **MONTSERRAT:** Cassava Ghaut, Banana Plot, 16°45.75'N, 62°12.47'W, 17 Mar 2002, 800 ft., rotten mamme apple (2–WIBF). **NETHERLANDS ANTILLES:** Saba, Bottom Mtn./Troy Hill Trail and Crispeen Trail, 27.IV.2013 / under skin of fallen fruit, D. E. Bright and B. A. Barr (3–CNCI). **PUERTO RICO:** Cayey, Reserva Forestal Carite, 28.VII.1999: Kovarik and C. W. O'Brien, leaf litter (9–CNCI); Cayey, II.24.1999, J. Torres / *Ceiba pentana* log (1–CNCI); El Yunque, 9.IV.1990, *Pinus caribaea* log (1–CNCI), 13.IX.1989, *Sloanea berteroa* log (1–CNCI); Guaynabo, 27.VII. 2000, J. Torres / ex: seeds of *Vietchia mervillii* (8–CNCI); Hwy. 120, km 16.2, Hdqts. Maricao State Forest, 8.8.1999, C. W. O'Brien (1–CNCI); Luquillo, 28.V.1989, *Calyphyllum calaba* seeds (1–CNCI), 8.VI.1989, *Syzygium jambos* seeds (1–CNCI), 13.VII.1989, *Pouteria multiflora* seeds (1–CNCI), 22.IV.1990, *Persea americana* seeds (1–CNCI); Luquillo, 22.IV.90, J. Torres, in semillas aguacate (7–CNCI); Luquillo Forest, El Yunque Sta., VIII.2–5.1969, H. and A. Howden (1–CNCI); Municipio Isabela, Bosque Est., Guajataca, 3.VIII.1999: Kovarik, Berlese leaf litter (6–WIBF); Río Piedras, 3.V.1996, ex *Dillenia indica* fruits (13–CNCI). **SAINT LUCIA:** Barre de L'Isle Trail, 13°93'N, 60°96'W, 8.VII.2009 / in pith of very small twigs, D. E. Bright (1–CNCI); Des Cartiers Trail, 347 m, 13.83712°N, 60.97622°W, A. R. Cline and S. D. Gaimari, 21 May 2009, under bark (3–WIBF); Mont LaCombe, 13.9209°N, 60.9592°W, 271 m, 28 June 2009, beating, M. L. Gimmel and C. A. Maier (1) and 03–08 July 2009, Malaise, M. L. Gimmel (2–WIBF), same locality, 16–22–May-2009, ex blacklight trap (1–WIBF), 271 m, 28 June 2009, beating, M. L. Gimmel and C. A. Maier (1–WIBF) and 03–08 July 2009, Malaise, M. L. Gimmel (1–WIBF); Piton Flore, 523 m, 13.9646°N, 60.9448°W, 26 May 2009, C. A. Maier (8–WIBF); Quilles Forest Res., LaPorte Cabin and Trail, 13.8404°N, 06.97408°W, various dates in 2009, uv light and Berlese, R. C. Winton and I. A. Foley (3–WIBF). **VIRGIN ISLANDS (U. S.):** **Saint Croix,** Estate North Star, 20 Apr-19 May 1993, 60 ft., flight intercept trap, J. Keularts, (1–USNM); Est. North Hall, Creque Gut, 100 ft., 19 Jul-23 Aug 1993, J. Keularts, flight intercept trap (1–USNM).

**Comments.** This common species is recognized by the complete lack of asperities on the surface of the pronotum, by the narrowly rounded anterior margin of the pronotum which is devoid of serrations and by the small size. Specimens of this species could be confused with those of *C. incertus* since adults of both species are very small, measuring 1.4–2.0 mm. Adults of *C. advena* may be distinguished by the lack of pronotal asperities.

### *Coccotrypes carpophagus* (Hornung)

Figures 459, 529.

*Bostrichus carpophagus* Hornung 1842: 116.

*Coccotrypes carpophagus*: Wood and Bright 1992: 594; Bright and Skidmore 1997: 131; Bright and Skidmore 2002: 91; Bright 2014: 137.

*Coccotrypes bakeri* Hopkins 1915a: 46 (Cuba).

*Coccotrypes anonae* Hopkins 1915a: 46 (Cuba).

*Coccotrypes hubbardi* Hopkins 1915a: 46 (Montserrat).

*Coccotrypes thrinacis* Hopkins 1915a: 46 (Cuba).

*Coccotrypes pubescens* Schedl 1949a: 119 (Cuba). **New Synonymy.**

*Coccotrypes punctulatus* Eggers 1951: 151 (Saint Thomas).

**Description (Female).** Length 1.5–2.0 mm, 2.3 times longer than wide. Frons convex, slightly flattened to very weakly, transversely impressed on lower half above epistoma; surface densely, deeply convergently aciculate on lower half, moderately shining, with a few, obscure punctures and scattered, short, fine setae; median longitudinal line not evident. Pronotum as long as wide, widest at middle; sides broadly, evenly arcuate, broadly converging to broadly rounded apex; anterior margin with a row of 10 equal sized serrations; discal surface densely asperate, asperities small, averaging twice as long as broad, very closely placed, surface between asperities smooth, brightly shining, asperities on posterior discal surface

slightly smaller; vestiture consisting of fine, long, erect, scattered setae over surface. Elytra 1.3–1.4 times longer than wide; sides parallel on anterior half, apex broadly rounded; discal striae punctured in even rows, punctures small, moderately impressed, each puncture with a fine seta as long as or slightly longer than diameter of puncture; discal interstriae 3.0–4.0 times wider than striae, smooth, brightly shining, each with a median row of long, fine, erect setae, these as long or longer than interstitial width, none of these flattened or spatulate at tip. Declivity convex, surface as on disc.

**Distribution.** This species is widespread throughout the temperate, tropical and subtropical areas of the world. It probably occurs throughout the West Indies.

**Specimens examined.** **ANTIGUA:** Christian Valley, 14–15.IX.1001, FAO Insect Survey, blacklight trap (1–CNC). **BARBADOS:** Island record only, Dec. 1929, Bourne, *Thinax* seeds (300–CNCI). **CAYMAN ISLANDS:** **Grand Cayman,** Georgetown, flight intercept trap, 2–8 July 2013, R. Turnbow (1–RWTC). **CUBA:** Camaguey, Sierra de Cubitas, Res. Ecol. Limones-Tuabaquey, Hojo de Bonet, 21.57581–77.75464, 16.V.2013, 65 m, R. Anderson, 2013–015, karst forest litter (3–CMNO); Santiago Province, Gran Piedra, Isabelica, 6–17.XII.95, 1100 m, elfin forest carrion traps, S. Peck, 95–80 (11); Santiago Province, Gran Piedra, Isabelica, 7–17.XII.95, 1100 m, elfin forest flight intercept trap, S. Peck (2–SBPC); Santiago Province, Gran Piedra, Met. Radar, 6–17.XII.95, 1100 m, elfin forest dung traps, S. Peck (1–SBPC); Santiago Province, Santiago, Jardín Botánico, 5.XII.95, 50 m, scrub forest litter, S. Peck, 95–70 (1–SBPC). **DOMINICAN REPUBLIC:** San Cristobal, Borbon Cuevas Pomier, 200 m, 13–28.VII.95, tropical deciduous forest flight intercept trap, S. and J. Peck (15–SBPC, CNCI). **GRENADA:** Grand Etang Forest Reserve, N12°04.62', W61°42.16', 10–28.VIII.2010, 400 m, rainforest flight intercept trap, S. Peck (18–SBPC). **GADELOUPE:** Pointe-à-Pitre, Morne Joliviere, uv, 160w, 12–31.VII.1999, D. Roguet (1–CNCI); Trois-Rivières, 8.V.1995, J. P. Roguet and E. Luyer (1–CNCI); B. T.: Pigeon Trace Poiriér, 16.14404–61.74977 / wet tropical forest trap, 377 m, 13.V.2012, R. Anderson (1–CMNO); Basse-Terre: Morne a Louis, 16.18496–61.4964 / wet cloud forest litter, 728 m, 23.V.2012, R. Anderson (2–CMNO). **NETHERLANDS ANTILLES:** **Saba:** Ecolodge on Mt. Scenery, 525 m, 17.62879°N, 63.23785°W, 01 Apr–1 May 2008, D. Sikes, J. Slowik, flight intercept trap w/pitfall (2–WIBF); Windward side, 19.VIII.1992, H. V. and R. M. Baranowski, blacklight trap (1–FSCA). **PUERTO RICO:** Guaynabo, various dates in 1995 (CNCI); El Yunque, IX.1966, C. Labay (1–CNCI); El Yunque Sta., Luquillo Forest, VII.2–5.1969, H. and A. Howden (9–CNCI); Luquillo, 22.IV.1990, *Persea americana* seeds (1–CNCI); Río Grande, 15.VI.1989, *Prestoea montana* seeds (1–CNCI); Río Piedras, 3.V.1996, ex: *Dillenia indica* fruits (1–CNCI); El Verde Research Station, 250 m, Caribbean National Forest, Río Grande, 20 July 1994, at light, M. A. Ivie (11–WIBF). **SAINT LUCIA:** Descartier, 13.8371°N, 60.9762°W, 320 m, 19 May 2009, litter sifting, A. R. Cline (1–WIBF); Mt. LaCombe, 13.9209°N, 60.9592°W, 271 m, 27 June–03 July 2009, Malaise, M. L. Gimmel and C. A. Maier (1–WIBF); Piton Troumasse trap site, 793 m, 13.8535°N, 61.0098°W, 26 May 2009, ex. Balanophoraceae fruit, R. C. Winton (3–WIBF); Quilles Forest Res., 323 m, various dates in 2009, various collectors (3–WIBF). **VIRGIN ISLANDS (U. S.):** **Saint John,** Reef Bay, Parforce Est. house, 27 May 1979 / W. B. Muchmore (1–WIBF).

**Comments.** The holotype of *C. pubescens* Schedl from the Sierra Bonilla in Cuba was examined and is a specimen of *C. carpophagus*.

*Phoenix* is listed as a host plant by Vázquez et al. (2003) for this species in Cuba.

### ***Coccotrypes cyperi* (Beeson)**

Figure 173.

*Thamnurgides cyperi* Beeson 1929: 230.

*Coccotrypes cyperi*: Wood and Bright 1992: 598; Bright and Skidmore 2002: 92; Bright 2014: 137.

*Dryocoetes subimpressus* Eggers 1940: 127 (Guadeloupe).

*Dryocoetes insularis* Eggers 1940: 129 (Guadeloupe and Martinique).

*Poecilips caraibicus* Schedl 1952: 345 (Guadeloupe and Martinique).

*Poecilips eggersi* Schedl 1952: 347 (Guadeloupe).

**Description (Female).** Length 1.7–2.4 mm, 2.3 times longer than wide. Frons convex; surface densely, deeply convergently aciculate on lower half, moderately shining, with a few, obscure punctures and scattered, long, fine setae; median longitudinal line broad, strongly elevated, shining. Pronotum 1.1 times longer than wide, widest on basal half; sides broadly arcuate, broadly converging to narrowly rounded, unarmed apex; discal surface densely asperate, asperities small, averaging as long as broad, very closely placed, surface between asperities smooth, brightly shining, those on posterior discal surface

slightly smaller; vestiture consisting of fine, long, erect, scattered setae over surface. Elytra 1.1–1.2 times longer than wide; sides parallel on anterior half, apex broadly rounded; discal striae punctured in even rows, punctures small, obscurely impressed, without setae or with setae smaller than diameter of puncture; discal interstriae 2.0–4.0 times wider than striae, smooth, brightly shining, each with a median row of long, fine, erect setae, these as long as interstitial width to slightly longer than interstitial width, a few may be narrowly flattened or spatulate at tip. Declivity broadly convex, surface as on disc.

**Distribution.** This species is widespread throughout the temperate, tropical and subtropical areas of the world. It probably occurs throughout the West Indies.

**Specimens examined.** **BARBADOS:** Apes Hill Gully, 200 m, N13°12.7', W59°35.9', 1.VI.06, forest litter sifting, S. and J. Peck (1–SBPC); Turners Hall Woods, 200 m, N13°14.48', W59°34.83, 24.V.06, forest litter, S. and J. Peck (1–SBPC). **CUBA:** Santiago Province, Gran Piedra, Rio Carpintero, 7.XII.95, 150 m, km 4, tree base litter, S. Peck (1–SBPC); Santiago Province, 6 km NE Siboney, Rio Juragua, 150 m, 7.XII.95, tree base litter, S. Peck (5–SBPC); Santiago Province, 10 km NE Caney, Arroyo Grovert, 300 m, leaf and log litter, S. Peck (1–SBPC); Granma: N. Pico Turquino, La Platica, 20.01065–76.88950, 928 m, 26.IX.2014, R. Anderson, F. Cala-Riquelme, A. Deler Hernandez 2014–017, montane forest litter (2–CMNO). **DOMINICA:** Fortune, VII.25.1964, T. L. Spilman (1–USNM); 1.3 mi. W Pont Casse, VII.22.1964, T. L. Spilman (1–USNM); La Fanchette, 27 March 1966, D. E. Johnson, ex leaf litter (1–WIBF); Syndicate Est, 24 March 1966, D. E. Johnson, ex leaf litter (1–WIBF); Fond Figueo R., 1250', 06 March 1966, D. E. Johnson, leaf litter (1–WIBF); Springfield Estate, Mt. Joy house, 31.V.16.VI.2004, 900', wet montane forest flight intercept trap, S. and J. Peck (2–SBPC). **DOMINICAN REPUBLIC:** La Vega, 10 km NE Jarabacoa, Hotel Montana, forest flight intercept trap, 550 m, 18.VII.4.VIII.95, S. and J. Peck (1–SBPC). **GRENADA:** Grand Etang Forest Reserve, N12°04.62', W61°42.16', 10–28.VIII.2010, 400 m, rainforest flight intercept trap, S. Peck (3–SBPC). **GUADELOUPE:** Basse-Terre: Rivière Sens, Sentier Houëlemont, N15°58.93, W61°42.62, 80 m, 19–31.V.2012, humid forest flight intercept trap, S. Peck (2–SBPC); Mne-Mazeau, Mae-Bois d'Inde aux battages, 3.III.1999, Deshaies (?), D. Roguet (1–CNCI); Basse-Terre: P. N. Guad., Maison de la Foret, N16°17.69, W61°69.39 / wet forest flight intercept trap, 250 m, 14–31.V.2012, S. Peck (2–SBPC); Basse-Terre: Malendure, Petite Trace, Fond Ravine, N16°10.44, W61°46.7 / streamside forest uv trap, 2 m, 21.V.2012, S. Peck (1–SBPC); Basse-Terre: Morne à Louis, 14.18644–61.74940 / wet cloud forest litter, 732 m, 23.V.2012, R. Anderson, collr. (1–CMNO); Basse-Terre: Soufriere, 17.V.2012, 16.03380, 61.67707, 821 m / old coffee forest litter, R. Anderson, collr. (1–CMNO). **MARTINIQUE:** 4 km N Ste-Luce, Forêt Montravail, 300 m, N14°29.9, 60°55.7, 11–28.VII.2012, humid forest flight intercept trap, S. Peck (1–SBPC); 12 mi. N Fort de France, August 23, 1986, C. W. and L. B. O'Brien (2–CNCI). **MONTSERRAT:** Big River, 1230 ft., 16°45.719'N, 62°11.34W, 07 Aug 2005, uv light, WIBF group (4–WIBF); Big River, 1160 ft., 16°45.72'N, 62°11.34W, 07–14 Aug 2005, uv light, WIBF group (3–WIBF); Cassava Ghaut, Beattie House, 16°45.91'N, 62°95'W, 23 Mar–03 Apr 2002, 632 ft., A. Krakower, uv light (1–WIBF); Fogerty, 16°46.24'N, 62°12.53W, 21 June 2002, 1224 ft., K. A. Marske, ex leaf litter (1–WIBF); Gun Hill, 16°45.45'N, 62°12.70W, 887 ft., 19 June–07 July 2002, K. A. Marske (1–WIBF); Jack Boy Hill, 16°45.77'N, 62°10.98W, 10 Aug 2005, I. A. Foley, (1–WIBF); trail to Katy Hill just below heli pad, 2300 ft., 11–14 Aug 2005, WIBF group, uv light trap (4–WIBF); Woodlands, Riverside House, 16°45.99'N, 62°13.34W, 21 July 2005, I. A. Foley colr (1–WIBF) and 03 Aug 2005, uv light, V. G. Martinson (11–WIBF). **NETHERLANDS ANTILLES:** **Saba:** Bud's Mountain Trail, 1415', 26.IV.2013 / *Cecropia* petioles, D. E. Bright and B. A. Barr (4–CNCI). **PUERTO RICO:** Cayey, Reserva Forestal Carite, 28.VII.1999: Kovarik and C. W. O'Brien, leaf litter (1–CNCI); Cayay, 24.II.1999, in *Calophyllum calaba* log and in *Ceiba pentandra* log, J. Torres (25–CNCI); El Verde Research Station, ridge top in forest, 02–03 Sept 1996, pitfall, F. Nazario (5–WIBF), 06 or 07 Sept 1999, leaf litter, F. Beard (5–WIBF); El Yunque, 6.IX.1989, *Sloanea berterana* log (CNCI); Guaynabo, 4.VIII.1994, *Mammea americana* seeds (CNCI); Luquillo, 13.VII.1989, *Pouteria multiflora* seeds (CNCI); Mayagüez, IX.27.1944, H. K. Plank, ex *Mammea americana* dry seeds (2–CNCI); Río Piedras, 3.VIII.1994, *Mangifera indica* seeds (CNCI); Mayagüez, Mayagüez, Site 10, EDRR, 18.21822, 67.14791, 20.VI.3.VII.2013, C. Torres and H. R. Torres (1–MSUC). **SAINT LUCIA:** Bordelais trap site, 185 m, 13.9689°N, 60.8859°W, 25–29 June 2009, flight intercept trap, E. A. Ivie and M. L. Gimmel (1–WIBF); Mon Repos, 6.5 km W Fox Grove Inn, 10–28.VII.2007, submontane forest flight intercept trap, 300 m S. and J. Peck (12–SBPC, CNCI); Piton Flores, 532 m, 13°96'N, 60°94'W, 3.VII.2009 / in broken branch, D. E. Bright (3–CNCI); same locality, date and collector / in *Cecropia* sp. leaf petiole (1–CNCI); La Porte Forest Trail, 13°84'N, 60°97'W, 11.VII.2009, 272 m / in *Cecropia* sp. leaf petiole, D. E. Bright (2–CNCI). **SAINT VINCENT AND THE GRENADINES:** **Saint Vincent,** Emerald Valley Hotel, east of Layon, 27–29.VIII.2006, streamside uv trap, S. and J. Peck (2–SBPC); Hermitage Forest, E of Spring Valley, N13°14.86', W61°12.77', 16–27.VIII.2006, forest edge Malaise, 340 m, S. and J. Peck (20–SBPC, CNCI). **VIRGIN ISLANDS (BRITISH):** **Tortola,** Mt. Sage National Park, north side Mt. Sage, 1550 ft., 10 Dec–07 Jan 1993, flight intercept trap, M. A. Ivie (1–WIBF); Mt. Sage, 1600–1700 ft., 6.X.01, B. and B. Valentine (1–WIBF). **VIRGIN ISLANDS (U. S.):** **Saint Croix,** Est. North Hall, Creque Gut., 100 ft., Jan–April 1993, flight intercept trap, J. Keularts (1–WIBF); Estate Fountain, 340 ft., 23 Mar–20 April 1993, flight intercept trap, J. Keularts (1–WIBF).

**Records from literature. JAMAICA:** Island record only (Barriga-Tuñón and Kirkendall 2015); **PUERTO RICO:** Rio Piedras, Sept. 22, 1952, from seeds of *Mammea americana* L., Wolcott (Schedl 1957 [as *Poecilips caribicus* Schedl]).

**Comments.** As noted below, adults of this species are very similar to those of *C. rhizophora* (see notes under *C. rhizophora*). I have distinguished the two based on locality, host and presumed elevation, e.g. *C. cyperi* is found in numerous hosts at localities well above sea level, while *C. rhizophora* is found in mangrove groves at or near sea level localities. In addition, adults of *C. cyperi* are generally slightly smaller than those of *C. rhizophora*, although the overlap in size is considerable.

***Coccotrypes dactyliperda* (Fabricius)**

Figure 174.

*Bostrichus dactyliperda* Fabricius 1801: 387.

*Coccotrypes dactyliperda*: Wood and Bright 1992: 599; Bright and Skidmore 1997: 131; Bright and Skidmore 2002: 92; Bright 2014: 137.

**Description (Female).** Length 1.8–2.5 mm, 2.3 times longer than wide; reddish-brown. Frons convex; surface shining, finely, convergently aciculate; epistoma broadly emarginate; vestiture consisting of inconspicuous, fine, scattered, hairlike setae, more conspicuous along epistomal margin. Pronotum slightly wider than long, widest just behind middle; sides distinctly arcuate, very slightly constricted on anterior third, anterior margin narrowly rounded, bearing several, acute, small asperities; entire surface finely asperate, the asperities scattered, more acute on anterior slope, becoming granulate behind summit; vestiture consisting of fine, moderately long, hairlike setae. Elytra 1.4 times longer than wide; sides slightly arcuate, broadly rounded at apex; striae (except 1), not impressed, punctured in regular rows, the punctures large, finely impressed; interstriae as wide as striae, each bearing a row of fine punctures. Declivity convex, beginning at middle of elytra; strial punctures slightly smaller than on disc and interstriae slightly narrower.

**Distribution.** This species is widespread throughout the temperate, tropical and subtropical areas of the world. It probably occurs throughout the West Indies.

**Specimens examined. BARBADOS:** Island record only (5–CNCI). **CAYMAN ISLANDS: Grand Cayman,** Georgetown, blacklight trap, 2 June 2008, Thomas and Turnbow (7–RHTC); same locality, flight intercept trap, 2–8 July 2013, R. Turnbow (2–RHTC). **CUBA:** Pinar d. Rio, Baker (2–CMNH); Havana, Baker (1–CMNH); Guantanamo Bay, Navy Base, Caravella Pt., 15.III.1973, Calhoun, blacklight trap (1–FSCA); Santiago Province, Gran Piedra, Segundo Chorroito, 7.XII.95, 600 m, km. 8, tree base litter, S. Peck (1–SBPC). **DOMINICAN REPUBLIC:** Province Pedernales, Cabo Rojo, 18–23 August 1988, in pool and at light, 0–10 m, M. Ivie, Philips and Johnson (1–WIBF). **GRENADA:** Saint Andrew, Mirabeau Agricultural School, 8.V.1990 (1–FSCA). **GUADELOUPE:** Basse-Terre: Pigeon Trace Poiriér, N16°08.83', W61°45.22' (3–SBPC). **JAMAICA:** Portland Parish, Paradise, 4.IV.1975, R. E. Woodruff, blacklight trap (1–FSCA); Saint James Parish, Montego Bay, 18 March 1911 (1–AMNH). **MONTSERRAT:** Cassava Ghaut, Beattie House, 16°5.91N, 62°12.95W, 21–30 June 2002, 632 ft., uv light, M. A. Ivie (5–WIBF); Hope Ghaut, Beattie House, 632 ft., 16°45.91N, 62°12.95W, 21–30 June 2002, uv light, M. A. Ivie (1–WIBF); Centre Hills, Hope Ghaut, E of Salem, 21 June 2000, 850 ft., under bark of standing dead tree, M. A. Ivie and K. A. Guerrero (2–WIBF,CNCI); Woodlands, Cassava Ghaut, Beatty's House, 13–14 Jan 2002, at light, M. A. Ivie and K. Marske (3–WIBF,CNCI). **NETHERLANDS ANTILLES: Saba:** Ecolodge on Mt. Scenery, 525 m, 17.62879°N, 63.23785°W, 01 Apr–1 May 2008, D. Sikes, J. Slowik, flight intercept trap w/pitfall (6–WIBF, CNCI); **Saba,** Mt. Scenery Trail, 17.63301°N, 63.23574°W, various dates and collectors, cloud forest, leaf/palm litter (24–WIBF, CNCI). **PUERTO RICO:** El Yunque, 17.VI.96 / light trap (1–CNCI); El Yunque, VIII.18.1961, Flint and Spangler / from Sierra Palm seeds (1–USNM); Hwy. 120, K13H8, Maricao For. Res., July 25, 1979, G. B. Marshall (1–CNCI); Orocavis Co., Orocavis, 18.18103–66.483 (Toro Negro State Forest), 19.VI–2.VII.2013, EDRR Site 7, J. Torres and H. Rivers (2–MSUC).

**Record from literature. BAHAMAS:** Island record only (Barriga-Tuñón and Kirkendall 2015).

**Comments.** This species is very common throughout most parts of the world. It is likely to be found in any city in imported nuts and seeds. Its origin is unknown and its distribution is not necessarily contigu-

ous over the wide range that has been recorded, since its dispersal depends on the transport of infested host material.

The species is well known for its destruction of date seeds, which are an important commodity in some parts of northern Africa. Additional hosts are *Areca*, *Attalea*, *Chamaedora*, *Howea*, *Phoenix*, *Pritchardia*, *Syagnis* and *Washingtonia*. It breeds in buttons of ivory nut and has been known to destroy large numbers of these buttons while in storage in Hong Kong and Singapore.

Besides the characters given in the key, adults of this species may be distinguished from those of the other representative of the genus in the West Indies by the weaker constriction on the anterior third of the pronotum and by the larger, somewhat deeper stria punctures on the elytra.

### ***Coccotrypes distinctus* (Motschulsky)**

Figure 175.

*Anodius distinctus* Motschulsky 1866: 403.

*Coccotrypes distinctus*: Wood and Bright 1992: 602; Bright and Skidmore 1997: 131; Bright and Skidmore 2002: 92; Bright 2014: 137.

**Description (Female).** Length 1.7–2.3 mm, 2.3 times longer than wide; reddish-brown. Frons convex; surface shining, convergently aciculate; vestiture consisting of scattered, fine, setae, more conspicuous along epistomal margin. Pronotum as long as wide, widest at middle; sides arcuate, distinctly constricted on anterior third, anterior margin narrowly rounded, bearing a few, low, blunt serrations; entire surface shining, bearing numerous, small, widely scattered, acute asperities, these twice as wide (transverse) as long (longitudinal), smaller and more widely separated than in *C. dactyliperda*, becoming granulate on sides and posterior portion; vestiture consisting of fine, widely scattered, hairlike setae. Elytra 1.3 times longer than wide; sides nearly parallel on anterior two-thirds, broadly rounded at apex; striae not impressed, punctures large, distinct, shallowly impressed, each bearing a short, semirecumbent seta, these setae slightly longer than diameter of stria puncture; interstriae smooth, shining, wider than striae, each bearing a row of fine, granulate punctures and a median row of long, erect, fine setae. Declivity convex, beginning at middle of elytra; striae 1 and 2 weakly impressed, other striae as on disc except punctures slightly smaller and interstriae slightly narrower.

**Distribution.** This species is widespread throughout the tropical and subtropical areas of the world. It probably occurs throughout the West Indies.

**Specimens examined.** **ANTIGUA:** Christian Valley, 26.VII.1991, blacklight trap, FAO Insect Survey (1–SBPC). **CUBA:** Camagüey Province, Reserva Ecológica Limones-Tuabaquey, canyon trail, 21.59214°N, 77.78833°W, 98 m, mercury vapor light, 16.V.2013, A. B. T. Smith, A. Deler-Hernández (5–CMNO, CNCI); Guantanamo Bay, Navy Base, Kittery Beach Housing Area, 11.VII.72, Samuel Calhoun, blacklight trap (1–CNCI); Santiago Province, Santiago, Jardín Botánico, 5–17.XII.95, 50 m, scrub forest flight intercept trap, S. Peck, 95–72 (1–CNCI). **DOMINICA:** Springfield Estate, Mt. Joy house, 31.V.16.VI.2004, 900', wet montane forest flight intercept trap, S. and J. Peck (2–SBPC). **DOMINICAN REPUBLIC:** Province Barahona, Larimar Mine, nr. Filipinas, 3300 ft., various dates in 1993 and 1995, blacklight trap, R. E. Woodruff (5–REWC); Province Pedernales, Cabo Rojo, 18–23 August 1988, at light, 0–10 m, M. Ivie, Philips and Johnson (1–CMNH); San Cristobal, Borbon Cuevas Pomier, 200 m, 13–28.VII.95, tropical deciduous forest flight intercept trap, S. and J. Peck (1–SBPC). **GRENADA:** Saint Andrew, Mirabeau Agriculture Laboratory, various dates in 1990, various collectors, light trap (17–CNCI, SBPC); Saint Andrew, Balthasar Dennis Noel farm, ca. 3 mi. SW Grenville, 25.II.1990, blacklight trap, R. E. Woodruff (1–SPBC); Saint Andrew, Pearls Beach area, 500 yds behind beach, 8.III.1990, white light trap, R. E. Woodruff et al. (1–SBPC); Saint George, Ministry of Agriculture Botanic Gardens, 6.II.1990, A. Thomas, light trap (1–CNCI); Point Salina, 27.VI.1987, R. E. Woodruff (1–CNCI). **GUADELOUPE:** Basse-Terre: Trace des Pitons du Sauts de Bouillante, 16.11735, 61.74291, 16.V.2012, 700 m / peak, montane forest litter, R. Anderson (2–CMNO, CNCI); Basse-Terre: Pigeon, Sous-Le-Vent, 12.V.2012, 16.15042, 61.76414, 194 m, dry tropical deciduous forest litter, R. Anderson (1–CMNO). **JAMAICA:** Clarendon Parish, Portland Ridge, 24 July 1958, at light, M. W. Sanderson (1–CNCI); Saint Ann Parish, 1500', Goshen, 25.XII.1972, S. and J. Peck, Ber. 257 (1–SBPC). **MONTSERRAT:** Brades, 27.IV.1993: Jeffers, blacklight trap (1–FSCA). **NETHERLANDS ANTILLES:** **Curaçao,** Piscadera, 0.5 km N Carmabi, 12°7'36.88"N, 68°58'1.14"W, 6.XI.2014, M. C. Thomas, blacklight trap (1–FSCA). **PUERTO RICO:** Barranquitas, *Pinus caribaea*, IV.16.2012 (1–PRDA); Cubuy Pine Forest, Canóvanas, multi-funnel Ips trap, *Pinus caribaea* (10–PRDA); El Verde Research Station, 250 m, Caribbean National Forest, Río Grande, 20.VII.1994, at night, M. A. Ivie (1–WIBF);

Guaynabo, 4.VIII.1994, in *Annona muricata* seeds (1–CNCI); Isabela, Bosque Estatal de Guajataca, Montanas Aymamon, 18–25–06N, 66–57–55W, forest / 210 m, 14–15 June 1996, J. Rawlins, W. Zanol, R. Davidson, C. Young, M. Klingler, S. Thompson (1–CMNH); Río Grande, 24.VII.1989, light trap (CNCI); El Yunque, 11.VII.1989, light trap (2–CNCI). **SAINT KITTS-NEVIS: Nevis**, Butler Village, 16.X.1992, blacklight trap, B. Brandy (1–FSCA). **SAINT LUCIA: Mon Repos**, Fox Grove Inn, 90 m, 20–28.VII.2007, uv light, S. and J. Peck (2–SBPC); Mon Repos, 6.5 km W Fox Grove Inn, 10–28.VII.2007, 300 m, submontane forest flight intercept trap, S. and J. Peck (1–SBPC). **SAINT VINCENT AND THE GRENADINES: Saint Vincent**, Emerald Valley Hotel, Buccament, 10–20.VI.2007, uv light, S. and J. Peck (2–SBPC). **VIRGIN ISLANDS (U. S.): Saint Croix**, Sprat Hall, 1–15 Jan. 1983, vane trap, J. A. Yntema (1–WIBF). **Saint John**, east end Europa Bay, 30 Jan. 1986, litter around rocks (1–WIBF); Hawksnest Bay, 15 June 1980, under old logs and bark, W. B. Muchmore (1–WIBF); Lameshur Bay, 12 March 1984 and 24 May 1979, at light, W. B. Muchmore (3–WIBF); Yawzi Point, 11 June 1980, under dead *Agave*, W. B. Muchmore (1–WIBF); various locations and dates 1981 (42–WIBF). **Saint Thomas**, E. Saint Enighed, Magen's Bay Arboretum, 1 Jan. 1933 (1–WIBF); International Airport, 18–29 Dec. 1958, J. Porter, light trap (1–WIBF); N. side, from wooden furniture, 15 JUN 1979, M. A. Ivie, colr (3–WIBF).

**Comments.** Adults of *C. distinctus* (despite its specific name) are difficult to distinguish from those of *C. carphophagus*. The characters referred to in the key to species are somewhat variable, but, in general, the pronotal asperities of *C. distinctus* are smaller and more widely spaced. Wood (2007) indicates that the interstitial setae have an acute apex and are twice as long as the distance between rows. This character is somewhat variable.

The lectotype of *C. floridensis* Schedl, a synonym of *C. distinctus*, was examined.

***Coccotrypes incertus* Bright, sp. nov.**

Figure 176, 400.

**Type Material. HOLOTYPE** (female) labeled: “WEST INDIES: **BARBADOS**: Welchmann Hall Gully, 26.V.2006, forest litter, 270 m, S. and J. Peck” / “HOLOTYPE *Coccotrypes incertus* Bright 2016” (SBPC [CNCI]). **PARATYPES** (34): 1 labeled with same data as holotype (SBPC); 7 labeled: “WEST INDIES: **DOMINICA**: Middleham Falls Trail, Cochrane, Forest litter, 11.VI.2004, S. and J. Peck” (CNCI, SBPC); 1 labeled: “WEST INDIES: **DOMINICA**: Middleham Falls Trail, Cochrane, N15°20.922', W61°20.747', 650 m, Forest litter Berlase, 11.VI.04, S. & J. Peck” (SBPC); 2 labeled: “WEST INDIES: **DOMINICA**: Syndicate Estate Trail, E. of Dublanc, N15°31.202', W61°25.015', 550 m, Montane rainforest, treebase litter, 13.VI.2004, S. and J. Peck” (SBPC); 1 labeled: “WEST INDIES: **DOMINICA**, Springfield Estate, 330–360 m, 30.V-16.VI.2004, N15°20.796', W61°22.142', Mature second forest FIT, S. and J. Peck” (SBPC); 1 labeled: “WEST INDIES: **DOMINICA**, Boiling Lake trailhead, 12.VI.2004, leaf, stick, tree-fern litter, S. and J. Peck” (SBPC); 1 labeled: “**DOMINICA**, W. I., Cochrane, West of Morne Macaque, 15°20.852' N, 61°25.015' W, 26.IV.2006, 2,300 ft., Z. Prusak” (FSCA); 2 labeled: “WEST INDIES: **DOMINICA**: Middleham Falls Trail, Cochrane, 11.VI.2004, 650 m, forest litter berlase, S. & J. Peck” (SBPC); 4 labeled: “W. I.: **GADELOUPE**: B. T., Trace des Pitons du Sauts de Bouillante, 16.11735, 61.74291, 16.V.2012, 700 m” / “peak, montane forest litter, R. Anderson, collr.” (CMNO, CNCI); 3 labeled: “W. I.: **GADELOUPE**: Morne Cadet Peak, 15.97675, 61.69234, 25.V.2012, 650 m” / “wet forest litter, R. Anderson” (CMNO, CNCI); 4 labeled: “W. I.: **GADELOUPE**: B. T., Pigeon Trace, Poirier, 13.V.2012, 16.14558, 61.75138” / “wet tropical forest litter, 340 m, R. Anderson” (CMNO, CNCI); 2 labeled: “W. I.: **GADELOUPE**: BT, Morne á Louis, Route de St. Leon, 16.18618, 61.75063” / “Wet cloud forest litter, 715 m, 14.V.2012, R. Anderson” (CMNO); 2 labeled: “W. I.: **GADELOUPE**: BT, Morne á Louis, 16.18644, 61.74940” / “Wet cloud forest litter, 732 m, 23.V.2012, R. Anderson” (CMNO); 1 labeled: “W. I.: **GADELOUPE**: BT, Soufrière 17.V.2012, 16.03380, 61.67707, 812 m” / “old coffee forest litter, R. Anderson” (CMNO); 1 labeled: “W. I.: **GADELOUPE**: B. T., Morne á Louis, 20.V.2012, 16.18644, 61.74940732 m” / “wet cloud forest litter, R. Anderson” (CMNO); 1 labeled: “W. I.: **GADELOUPE**: B. T., Sentier Boucle de Deville, 20.V.2012, 16.37806, 61.47815” / “tropical scrub forest litter, 16 m, R. Anderson (CMNO).

**Description (Female).** Length 1.4–1.6 mm, 2.4 times longer than wide; reddish-brown. Frons weakly convex from epistoma to above upper level of eyes; surface shining, densely convergently aciculate, with faint, shallow punctures. Antennal club 1.3 times longer than wide; basal half solid, distal half pubescent, with two obscure, transverse sutures. Pronotum 1.1 times longer than wide; sides weakly arcuate,

converging to narrowly rounded anterior margin; anterior margin without serrations; surface with numerous, small, weakly elevated, acute granules (asperities) over entire surface, surface between granules shining. Elytra 1.25 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae punctured in regular rows, punctures as wide as interstriae, without setae or, if setae visible, these extremely short and fine; discal interstriae each with a median row of long, erect, fine setae. Declivity evenly convex; striae and interstriae as on disc except some interstitial setae very slightly flattened.

**Distribution.** This species is known from the Barbados, Dominica and Guadeloupe.

**Etymology.** From *incertus*, Latin for doubtful.

**Comments.** Females of this species may be consistently distinguished from those of *C. precarius* by the very large striae punctures that are almost as wide as the discal interstriae and do not bear a seta, by the presence of abundant, very small, acute granules or asperities on the pronotal surface, by the shining pronotal surface between the granules and by the stout body shape.

***Coccotrypes precarius* Bright, sp. nov.**

Figure 177.

**Type Material. HOLOTYPE** (female) labeled: “WEST INDIES: **DOMINICA**: Springfield Estate, 30.V.16.VI.2004, 830–860 m, N15°20.796', W61°22.142', mature second forest FIT, S. and J. Peck” / “HOLOTYPE *Coccotrypes precarius* D. E. Bright 2016” (SBPC [CNCI]). **PARATYPES** (61): 4 labeled with same data as holotype (SBPC, CNCI); 4 labeled: “WEST INDIES: **DOMINICA**: Middleham Falls Trail, Cochrane, forest litter, 11.VI.2004, S. and J. Peck” (SBPC, CNCI); 2 labeled: “WEST INDIES: **DOMINICA**: Middleham Falls Trail, Cochrane, 11.VI.2004, 650 m, forest litter berlese, S. & J. Peck” (SBPC); 4 labeled: “WEST INDIES: **DOMINICA**: Boiling Lake trailhead, 12.VI.2004, S. and J. Peck, leaf, stick, tree fern litter” (SBPC, CNCI); 4 labeled: “**DOMINICA**: W. I.: Cochrane, West of Morne Macaque, 15°20.852N, 61°20.698W, 26.IV.2006, 2,300 ft., Z. Prusak” (FSCA); 1 labeled: “WEST INDIES: **BARBADOS**: Gregg Farm Gully, 240 m, 28.V.2006, forest litter, S. and J. Peck” (SBPC); 1 labeled: “WEST INDIES: **BARBADOS**: Welchmann Hall Gully, 26.V.2006, forest litter, 270 m, S. and J. Peck” (SBPC); 2 labeled: “WEST INDIES: **BARBADOS**: Jack-in-Box Gully, forest, 1.VI.06, leaf litter, 230 m, S. and J. Peck” (SBPC, CNCI); 7 labeled: “W. I.: **GADELOUPE**: B. T.: Sentier Boucle de Deville, 20.V.2012, 16.37806, 61.47815” / “tropical scrub forest litter, 16 m, R. Anderson, collr.” (CMNO, CNCI); 12 labeled: “W. I.: **GADELOUPE**: Morne à Louis, Route de Saint Leon, 16.18618, 61.75063” / “Wet cloud forest litter, 715 m, 14.V.2012, R. Anderson, collr.” (CMNO, CNCI); 2 labeled: “W. I.: **GADELOUPE**: B. T.: Trace des Pitons du Sauts de Brillante, 16.11735, 61.74291, 16.V.2012, 700 m” / “peak, montane forest litter, R. Anderson, collr.” (CMNO); 1 labeled: “W. I.: **GADELOUPE**: B. T.: Soufrière, 17.V.2012, 16.03380, 61.67707, 821 m” / “old coffee forest litter, R. Anderson, collr.” (CMNO); 4 labeled: “W. I.: **GADELOUPE**: B. T.: Chutes du Carbot, 19.V.2012. 16.04134, 61.04134, 486 m” / “wet rainforest litter, R. Anderson, collr.” (CNCI, CMNO); 5 labeled: “W. I.: **GADELOUPE**: B. T.: Morne à Louis, 20.V.2012, 16.18644, 61.74940, 732 m” / “wet cloud forest litter, R. Anderson, collr.” (CMNO); 2 labeled: “W. I.: **GADELOUPE**: B. T.: Pigeon Trace Poirier, 13.V.2012, 16.14558, 61.75338” / “wet tropical forest litter, 340 m, R. Anderson, collr.” (CMNO); 4 labeled: “W. I.: **GADELOUPE**: B. T.: Morne á Louis, 16.18496, 61.74964” / “Wet cloud forest litter, 728 m, 23.V.2012, R. Anderson, collr.” (CMNO, CNCI); 1 labeled: “W. I.: **GADELOUPE**: Morne Cadet Peak, 15.97675, 61.69234, 25.V.2012, 650 m” / “wet forest litter, R. Anderson, collr.” (CMNO); 1 labeled: “**PUERTO RICO**: Luquillo Forest, June 24, 1970, *Euterpe globosa*, D. H. Jansen” (CNCI).

**Description (Female).** Length 1.3–1.6 mm, 2.5 times longer than wide; light reddish-brown, occasionally dark reddish-black. Frons weakly convex from epistoma to above upper level of eyes; surface moderately shining, reticulate, densely convergently aciculate, with faint, shallow punctures. Antennal club as long as wide; basal half solid, distal half pubescent, sutures not visible or obscurely so. Pronotum as long as wide to very slightly longer than wide; sides broadly arcuate, converging to broadly rounded anterior

margin; anterior margin without serrations; anterior half to three-quarters with numerous, small, weakly elevated asperities, these absent on posterior one-quarter, surface between asperities moderately to brightly shining. Elytra 1.6 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae punctured in regular rows, punctures obscure or visible each narrower than interstitial width and not bearing a small seta; each discal interstriae bearing a median row of long, erect, fine setae, these 1.5–2.0 times longer than interstriae. Declivity evenly convex; striae and interstriae as on disc except some interstitial setae are slightly flattened.

**Distribution.** This species is known from Dominica, Puerto Rico, Barbados and Guadeloupe. It probably occurs throughout the West Indies.

**Etymology.** From *precarius*, Latin for doubtful or uncertain.

**Comments.** Adults of this species are very similar to those of *C. incertus*. Both were collected at the same localities at the same time, but both are consistently different in appearance. Females of this species may be distinguished by the very small, very weakly impressed to almost obsolete striae punctures which are much narrower than the interstitial width, by the very small, widely separated asperities on the anterior slope of the pronotum and by the smaller size of the body.

### ***Coccotrypes rhizophorae* (Hopkins)**

*Spermatoplex rhizophorae* Hopkins 1915a: 48.

*Coccotrypes rhizophorae*: Wood and Bright 1992: 609; Bright and Skidmore 1997: 132; Bright and Skidmore 2002: 93; Bright 2014: 138.

**Description (Female).** Length 2.2–2.5 mm, 2.4 times longer than wide. Frons as in *C. cyperi*. Pronotum as in *C. cyperi* except discal surface shining, densely asperate on anterior half, asperities on posterior half slightly smaller; vestiture consisting of fine, long, erect, scattered setae over surface. Elytra 1.5 times longer than wide; sides parallel on anterior half, apex broadly rounded; discal striae punctured in even rows, punctures small, obscurely impressed, each puncture with a very small seta shorter than puncture diameter or setae absent; discal interstriae as wide as striae, smooth, brightly shining, each with a median row of long, fine, erect setae, these as long as interstitial width to slightly longer than interstitial width, a few are narrowly flattened or spatulate at tip. Declivity broadly convex, surface as on disc.

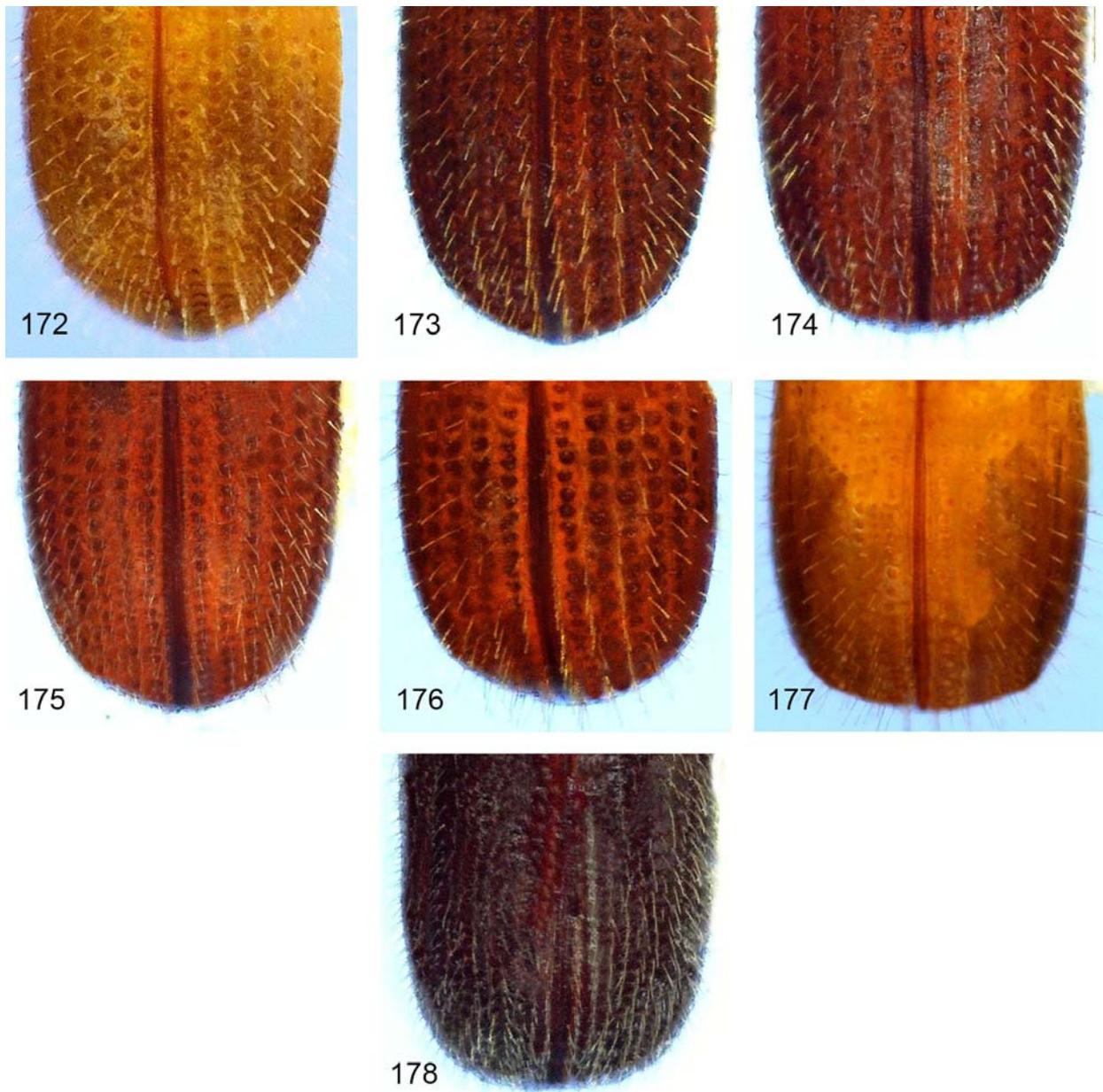
**Distribution.** This species occurs from southern Florida along the coastal areas of Mexico and West Indies to southern Brazil; occurs on the Galapagos Islands and in the Old World tropics. It probably occurs wherever mangrove (*Rhizophora mangle*) occurs.

**Specimens examined.** **BARBADOS:** Graeme Hall Nat. Sanct., N13°04'W, W59°34.83', 0.5 m, 26.V.06, red mangrove litter, S. and J. Peck (8–SBPC, CNCI). **SAINT LUCIA:** Mon Repos, Fox Grove Inn, 22.VII.2007, mangrove litter, S. and J. Peck, 2 m (19–SBPC, CNCI). **VIRGIN ISLANDS (U. S.): Saint Croix,** Est. North Hall, Creque Gut, 100 ft., 06 Jan–23 Feb 1993, J. Keularts, flight intercept trap #8 (2–WIBF) and same data except 23 Feb–17 Mar (2–WIBF).

**Record from literature.** **CUBA:** Island record only (Vázquez et al. 2003).

**Comments.** Females of this species are very similar to those of *C. cyperi* and distinction may be difficult if not impossible. Females of *C. rhizophorae* average slightly larger than those of *C. cyperi* (Wood 1982) but the overlap in size is considerable. The other characters used by Wood (1982) to distinguish the two are too variable to be consistent indicators of the species. The biology of the two may be different, but this is questionable. Individuals of *Coccotrypes rhizophorae* are known to occur in the seeds, fruits and seedlings of mangrove (Woodruff 1970), while those of *C. cyperi* are found in seeds or under the bark of numerous plants (Wood 1982). Most species of *Coccotrypes* are known to have multiple hosts.

For the purpose of this review, I have restricted the distribution of *C. rhizophora* to larger specimens from coastal localities.



**Figures 172–178.** Declivities of *Coccotrypes* spp. **172)** *C. advena*. **173)** *C. cyperi*. **174)** *C. dactyliperda*. **175)** *C. distinctus*. **176)** *C. incertus*. **177)** *C. precarius*. **178)** *C. robustus*.

***Coccotrypes robustus* Eichhoff**

Figure 178.

*Coccotrypes robustus* Eichhoff 1878b: 313; Wood and Bright 1992: 610; Bright and Skidmore 1997: 132; Bright and Skidmore 2002: 94; Bright 2014, 139.

*Coccotrypes cylindricus* Schedl 1949a: 116 (Cuba).

**Description (Female).** Length 1.3–1.7 mm, 2.5 times longer than wide; dark reddish-brown to black. Frons convex, distinctly convergently aciculate from epistoma to well above eyes, with a few, scattered, obscure punctures; vestiture sparse, consisting of fine, scattered setae. Pronotum circular in outline, 1.1

times longer than wide, widest at middle; sides broadly arcuate, anterior margin broadly rounded, with six large serrations; entire surface with numerous, large, close, acute asperities, these slightly smaller than serrations on anterior margin, surface between asperities shining; vestiture consisting of fine, widely scattered setae. Elytra 1.5 times longer than wide; sides nearly parallel on anterior two-thirds, broadly rounded at apex; discal striae not impressed, punctures small, distinct, shallowly impressed, each bearing a long, erect seta, these much longer than diameter of striae and almost as long as interstitial setae; interstriae smooth, shining, wider than striae, each bearing a row of long, fine, erect setae. Declivity convex, beginning at posterior third of elytra; surface as on disc.

**Distribution.** This species is known from southern Florida to the Bahamas and from Cuba to Puerto Rico.

**Specimens examined.** **ANTIGUA:** Christian Valley, 14–15.IX.1001, FAO Insect Survey, blacklight trap (1–CNCI). **BAHAMAS:** **Cat Island**, McQueen, Jan. 23, 1953 (1–AMNH). **Grand Bahama**, Freeport, 20–27 June 1997, W. E. Steiner, M. J. and R. Mollineaux / yellow pan trap in Caribbean pine and palmetto scrub (1–USNM). **CUBA:** Pinar del Rio Sierra del Rosario Rangel, ca 15 km S of Cinco Pecos, 30 June 1990, M. A. Ivie, dead log and leaf litter (1–WIBF); Santiago Province, 10 km NE Caney, Arroyo Grovert. 100 m, leaf and log litter, S. Peck (1–CNCI); Santiago Province, Gran Piedra, Segundo Chorroito, 7–17. XII.1995, 600 m, km. 8, forest stream flight intercept trap, S. Peck (1–CNCI). **DOMINICAN REPUBLIC:** Barahona, 7 km NW Paraiso, 200 m, rainforest remnant, 27.XI–4.XII.1991, intercept trap, Masner and Peck (6–CMNO, CNCI). **JAMAICA:** Saint Anne Parish, 1500', Goshen, 25.XII.1972, S. and J. Peck (1–CNCI). **PUERTO RICO:** Camuy, 10.VI.2009, ex seed of *Roystonea bonncana*, J. E. Mercado, collr. (3–CNCI); El Yunque, Aug. 5, 1935, *Euterpe globosa* nut, C. L. Horn, collector (4 [2 are homotypes] USNM, CNCI); Maricao Forest Reserve, Hwy. 120, K17 HO, 25.VII.1979, C. W. and L. B. O'Brien (1–CNCI).

**Comments.** Females of this species may be recognized by the elongate body and by the abundant striae setae that are slightly shorter than the interstitial setae

Two homotypes of *C. robustus*, compared to the types by Wood in 1972, were examined.

### ***Coccotrypes vulgaris* (Eggers)**

*Dendrurgus vulgaris* Eggers 1923:151.

*Coccotrypes vulgaris*: Wood and Bright 1992:614; Bright and Skidmore 1997:133; Bright and Skidmore 2002:94; Bright 2014:139.

This species is recorded from the Everglades National Park and Long Pine Key in Florida by Atkinson and Peck (1994). No specimens have been seen from the West Indies. It is a widely distributed species in the Old World and was introduced into Florida. It almost certainly will be found in the West Indies.

Adults breed in the seeds of many hosts and are distinguished from those of the other West Indian species by the slender, scalelike interstitial setae on the declivity and by the slender body.

It is not included in Appendix 2 nor in any count of the West Indian fauna.

### **Genus *Dendrocranulus* Schedl**

*Dendrocranulus* Schedl 1937: 165; Wood and Bright 1992: 550; Bright and Skidmore 2002: 341 (check-list); Bright 2014: 140.

Members of this genus may be characterized by the flattened antennal club with obscure, recurved sutures and by the presence of more than five socketed denticles on the lateral margin of the protibia.

Bright and Skidmore (2002) list 44 species in this genus; seven species are herein recorded from the West Indies.

Members of this genus may be found in cut, broken or dying vines of various species of Cucurbitaceae.

Key to the species of *Dendrocranulus* in the West Indies

1. Elytral declivity steeply, evenly convex; declivital striae distinctly impressed; declivital interstriae 1 slightly elevated, 2 and 3 convex, not impressed or elevated ..... **2**  
 — Elytral declivity slightly to distinctly impressed, flattened or concave with interstriae 2 weakly impressed or sulcate ..... **3**
- 2(1). Each declivital interstriae with a median row of small granules, general surface of declivity appearing minutely rugose; length 2.1 mm; Jamaica ..... ***D. convexus* Bright, sp. nov.** (p. 244)  
 — Declivital interstriae devoid of granules, general surface of declivity appearing smooth and shining; length 1.8–1.9 mm; Montserrat, Martinique ..... ***D. fulgens* Bright, sp. nov.** (p. 245)
- 3(1). Lateral margins of elytral declivity strongly, subacutely elevated from base of interstriae 3 to elytral apex; elytral declivity broadly concave, very deeply impressed; interstriae 1 without granules or granules minute; striae 1 not impressed on declivity; length 2.1–2.7 mm; Hispaniola ..... ***D. hispaniolus* Bright, sp. nov.** (p. 246)  
 — Elytral declivity weakly impressed or convex, lateral margins of impression not or slightly higher than interstriae 1 ..... **4**
- 4(3). Female frons convex on upper half, flattened to weakly impressed above epistoma, bearing a brush of long, yellowish setae just above epistomal margin, setae extending at least half the distance to tip of mandibles; male frons similar except long setae absent; elytral declivity slightly flattened to weakly impressed, interstriae 2 with a median row of small but distinct granules and setae in males, granules much smaller or absent in female; 2.2–2.5 mm; Grenada ..... ***D. barbatulus* Bright, sp. nov.** (p. 242)  
 — Female frons not bearing a conspicuous brush of setae above epistoma; elytral declivity more distinctly impressed, interstriae 2 not bearing a distinct row of granules ..... **5**
- 5(4). Elytral declivity weakly impressed, lateral margins unarmed, higher than interstriae 1; posterior area of pronotum smooth, shining, with deeply impressed punctures; length 2.2 mm; Haiti, Dominican Republic ..... ***D. ambiguus* Bright, sp. nov.** (p. 241)  
 — Elytral declivity convex, lateral margins very weakly elevated with fine granules or setae; posterior area of pronotum variable, with less deeply impressed punctures; length less than 2.0 mm . **6**
- 6(5). Elytral declivity very weakly impressed; striae and interstitial punctures on declivity large, deeply impressed; length 1.8–2.1 mm; Cayman Islands ..... ***D. caymanensis* Bright, sp. nov.** (p. 244)  
 — Elytral declivity convex, not impressed; striae punctures on declivity shallowly impressed to obscure; length 1.6–2.0 mm; widely distributed ..... ***D. carbonarius* (Ferrari)** (p. 243)

***Dendrocranulus ambiguus* Bright, sp. nov.**

Figure 179.

**Type Material.** **HOLOTYPE** (female?) labeled: “WEST INDIES, HAITI, Fermathe, Baptist Haiti Mission, 18.27’N, 72.18’W” / “4.IV.1985, pheromone trap *Pinus occidentalis*, R. Billings, collr.” / “HOLOTYPE *Dendrocranulus ambiguus* D. E. Bright 2016” (CNCI). **PARATYPES** (10): 7 labeled with same data as holotype (CNCI, WIBF); 1 labeled: “HAITI, Kenscoff, La Decouverte, 5000 ft.” / “III.10.1955, A. M. Nadler” (CNCI); 2 labeled: “DOMINICAN REPUBLIC: Province Barahona, nr. Filipinas, Larimar Mine, 20–26.VI.1992, R. E. Woodruff and P. E. Skelley, at light” (FSCA).

**Description (Female?).** Length 2.2 mm, 2.7 times longer than wide; light brown. Frons weakly convex, with an obscure, short, longitudinal, median line ending in a small, median impression at upper level of eye; surface shining, densely granulate-punctate, with dense, long setae; epistoma weakly, evenly arcu-

ate. Antennal club nearly circular, as long as wide, with one strongly procurved suture. Pronotum 1.1 times longer than wide, widest near base; sides weakly arcuate, anterior margin broadly rounded; discal surface evenly convex; anterior half with minute, very fine, abundant asperities; posterior portion with large, distinctly impressed punctures, these separated by a distance equal to or less than their diameters; interpuncture surface smooth, shining; vestiture consisting of abundant, fine, erect, inconspicuous, yellowish setae over entire surface. Elytra 1.7 times longer than wide, 1.6 times longer than pronotum; sides parallel, apex truncate and slightly recurved at suture; discal striae punctured in regular rows, punctures distinct, large, distinctly impressed, separated by a distance equal to or less than their diameter; discal interstriae 2.0–3.0 times wider than striae, smooth, shining, each with a median row of very fine punctures (specimen abraded, probably would have short, erect, yellowish setae). Declivity weakly impressed, with lateral margins rounded, unarmed, elevated higher than suture; striae 1 distinctly punctured, narrowly impressed, 2 distinctly punctured, not impressed, located at base of lateral margins, remaining interstriae punctured; interstriae 1 weakly elevated, impressed below level of lateral margin, with a median row of small granules; interstriae 2 flat, without granules; interstriae 3 forming summit of lateral margins, devoid of granules.

**Male.** Similar to female except frons is convex, very weakly, transversely impressed from epistoma to halfway to upper eye level with the surface shining, minutely punctured except on a narrow, longitudinal smooth line extending from epistoma to above upper eye level and with short, inconspicuous setae and the declivity evenly, steeply convex, weakly impressed with striae 1 distinctly punctured, narrowly impressed, 2 distinctly punctured, not impressed, located on inner slope of lateral convexity, remaining interstriae punctured; interstriae 1 weakly elevated, impressed below level of lateral convexities, with a median row of small granules; interstriae 2 flat, located on inner slope of lateral convexities, without granules; interstriae 3 forming summit of lateral convexities, devoid of granules.

**Distribution.** This species is known from Haiti and the Dominican Republic.

**Etymology.** From *ambiguus*, Latin for uncertain or doubtful.

**Comments.** Adults of this species may be recognized by the distinctly impressed elytral declivity in the female and by the characters mentioned in the key.

***Dendrocranulus barbatulus* Bright, sp. nov.**

Figures 180, 362, 401.

**Type Material.** **HOLOTYPE** (male) labeled: “WEST INDIES: GRENADA, St. Andrew, Mirabeau Agric. Lab., 26.I.1990, H. Harford, Light trap” / “HOLOTYPE *Dendrocranulus barbatulus* D. E. Bright 2016” (FSCA). **ALLOTYPE** with same data as holotype plus my allotype label (SBPC[CNCI]). **PARATYPES** (21): 11 with same data as holotype (CNCI, FSCA, SBPC); 8 with same data as holotype except collector is J. Telesford and with various dates in 1990 (CNCI, FSCA, SBPC); 1 with same data except collector is H. Thomas and date is 5.IV.1990 (SBPC) and 1 with same data except collector is A. Thomas and the date is 2.VI.1990.

**Description (Male).** Length 2.2–2.5 mm, 2.8 times longer than wide; reddish-brown. Frons weakly, transversely impressed from epistoma to half-way to upper eye level, convex above; surface shining, with scattered fine granules and punctures; epistoma fringed by a row of short, yellowish setae, a few longer setae scattered above epistomal fringe. Antennal club circular, with one obscure, strongly procurved suture. Pronotum 1.2 times longer than wide, widest just behind middle; sides broadly arcuate, anterior margin broadly rounded; anterior slope finely asperate; posterior portion densely punctured, punctures deeply impressed, close. Elytra 1.5 times longer than wide, 1.4 times longer than pronotum; sides parallel on anterior four-fifths, apex broadly rounded; discal striae punctured in regular rows, punctures distinct, impressed; discal interstriae smooth, flat, each with a median row of erect, yellowish setae, setae slightly longer than interstitial width. Declivity steeply convex; interstriae 2 very shallowly impressed below level of interstriae 1 and 3, as wide as discal width, bearing a median row of fine granules and setae; interstriae 1 weakly elevated, with a median row of extremely fine granules and fine setae; interstriae

3 slightly elevated, slightly higher than interstriae 1; remaining interstriae with a median row of fine setae.

**Female.** Similar to male except frons more evenly convex and densely, minutely punctured above epistoma and bearing a denser, longer brush of setae along epistomal margin and with longer setae at lateral margins of oral cavity near antennal insertions; elytral declivity more evenly convex with interstriae 3 equal in height to interstriae 1.

**Distribution.** This species is known from the type locality in Grenada.

**Etymology.** From *barbatus*, Latin for bearded, referring to the dense setae on the female frons.

**Comments.** The adults of this species were found in a large series of *D. carbonarius* collected in light traps at the Mirabeau Agricultural Station in Grenada. The adults *D. barbatulus* may be distinguished from those of *D. carbonarius* by their much larger size and by the dense fringe of long setae along the epistomal margin, especially evident on the females. The elytral declivity is more broadly and deeply impressed.

***Dendrocranulus carbonarius* (Ferrari)**

Figure 181.

*Xylocleptes carbonarius* Ferrari 1867: 41.

*Dendrocranulus carbonarius*: Wood and Bright 1992: 550; Bright and Skidmore 2002: 84; Bright 2014: 14.

*Xylocleptes floridensis* Hopkins 1915a: 43 (Florida).

*Xylocleptes anonae* Hopkins 1915a: 43 (Florida).

*Xylocleptes guatemalensis* Hopkins 1915a: 44 (Guatemala). **New Synonymy.**

*Dendrocranulus guatemalensis*: Wood and Bright 1992: 551.

*Dendrocranulus parallelus* Schedl 1938: 172 (Guadeloupe).

**Description (Male).** Length 1.6–2.0 mm, 2.8 times longer than wide; reddish-brown. Frons very weakly, transversely impressed from epistoma to half-way to upper eye level, convex above; surface shining, with scattered fine granules and punctures; epistoma with a few scattered setae, mostly concentrated at epistomal lobe. Antennal club circular, with one obscure, strongly procurved suture. Pronotum 1.2 times longer than wide, widest near base; sides weakly arcuate, anterior margin broadly rounded; anterior slope finely asperate; posterior portion densely punctured, punctures deeply impressed. Elytra 1.7 times longer than wide, 1.5 times longer than pronotum; sides parallel on anterior four-fifths, apex broadly rounded; discal striae punctured in regular rows, punctures distinct, impressed; discal interstriae smooth, flat, each with a median row of erect, yellowish setae, setae slightly longer than interstitial width. Declivity steeply convex; interstriae 2 shallowly impressed below level of interstriae 1 and 3; interstriae 1 weakly elevated, with a median row of extremely fine granules and fine setae; interstriae 3 slightly elevated, slightly higher than interstriae 1; remaining interstriae with a median row of fine setae.

**Female.** Similar to male except frons more evenly convex and bearing a brush of longer setae along epistomal margin and elytral declivity more evenly convex with interstriae 3 equal in height to interstriae 1.

**Distribution.** This species is known from southern Florida to Veracruz, Mexico, Guatemala and Honduras and in the West Indies from Cuba to Granada.

**Specimens examined.** **CUBA:** Cayamas, E. A. Schwarz (10–USNM, CNCI). **DOMINICAN REPUBLIC:** Colonia, 1000m, 21.4 / Rep. Dominic 1972, J. and S. Klapperich (3–CNCI). **GRENADA:** Saint Andrew, Mirabeau Agriculture Laboratory, various dates 1990, 1991, J. Telesford, A. Thomas, R. E. Woodruff or H. Harford, light trap (53–CNCI, SBPC); Saint Georges, Min. Agricultural Botanic Gardens, 6.II.1990, A. Thomas, light trap (1–CNCI). **GADELOUPE:** Trois Rivières (USNM). **HAITI:** Mariani, XI.11.1959, A. M. Nadler (2–CNCI). **JAMAICA:** Porus, February 23, 1937, Chapin and Blackwelder (1–USNM); Saint Catherine Parish, Worthy Park, 15.VI.1975, black-light trap, R. E. Woodruff (1–FSCA). **PUERTO RICO:** San Lorenzo, 1.VII.1989, J. Torres (8–CNCI); San Lorenzo,

1.VII.1989, in *Secchium edule* vine, J. Torres (11–CNCI); Guaynabo, various dates 1995–1999, light trap, J. Torres (16–CNCI); Mayagüez, Mayagüez, Site 10, EDRR, 18.21822, -67.14791, 20.VI-3.VII. 2013, C. Torres and H. R. Torres (1–MSUC). **VIRGIN ISLANDS (BRITISH): Guana Island**, Hotel area, 19 Oct 2002, on flowering vine, M. A. Ivie (8–WIBF, CNCI); Grand Ghut Trail, 17 Oct 2002, M. A. Ivie (4–WIBF). **Tortola**, Windy Hill, 24–29.XII.1993, 300–500', thorn-scrub forest, T. K. Philips, colr (1–WIBF). **VIRGIN ISLANDS (U. S.): Saint John**, Virgin Islands National Park, Lind Pt. Bio. Res. Ctr., 04 Nov 1992, beating, M. A. Ivie, (1–WIBF).

**Comments.** Adults of this species may be distinguished by the evenly convex to slightly impressed elytral declivity with interstriae 2 weakly impressed below the level of interstriae 1 and 3, by the shining pronotum, by the weakly transversely impressed male frons and by the larger size.

The holotype of *Xylocleptes guatemalensis* Hopkins was examined. The differences noted by Wood (1982) are considered to be variations within the normal range of variability of this species.

***Dendrocranulus caymanensis* Bright, sp. nov.**

**Type Material. HOLOTYPE** (male) labeled: “**CAYMAN BRAC:** The Creek, uv trap, 4–1–1996, C. R. Dilbert” / “**HOLOTYPE** *Dendrocranulus caymanensis* D. E. Bright 2016” (CNCI). **ALLOTYPE** labeled with same data as holotype plus my allotype label (CNCI). **PARATYPES** (9): 4 labeled with same data as holotype (CNCI); 5 labeled: “**CAYMAN ISLANDS: Grand Cayman**, 3 km W Colliers, 19°21'N, 81°07'W, 21 February 1993” / “At blacklight in cut-over forest near ponds, W. E. Steiner and J. M. Swearingen” (USNM).

**Description (Male).** Length 1.8–2.1 mm, 2.9 times longer than wide; light brown. Frons and antennal club as in *D. carbonarius*. Pronotum as in *D. carbonarius* except punctures on posterior portion closer and interpuncture space slightly less smooth. Elytra as in *D. carbonarius* except apex less deeply recurved at suture and discal interstriae with a median row of erect, yellowish setae. Declivity similar to that of *D. carbonarius* but more weakly impressed, lateral convexities very slightly higher than interstriae 1 and striae 1 less deeply impressed.

**Female.** Similar to male except elytral declivity steeply, evenly convex, not impressed and interstriae 1 without granules.

**Distribution.** This species is known from the Cayman Islands.

**Etymology.** This species is named for the type locality.

**Comments.** Adults of this species are similar to those of *D. carbonarius* but smaller and with a less deeply impressed male elytral declivity, with the lateral convexities very slightly higher than interstriae 1.

***Dendrocranulus convexus* Bright, sp. nov.**

Figure 182.

**Type Material. HOLOTYPE** (female?) labeled: “**JAMAICA:** Serge Is., XII.6.1988, J. A. McLean” / “trap, Ipsdienal + cis-verb.” / “**HOLOTYPE** *Dendrocranulus convexus* D. E. Bright 2016” (CNCI). **PARATYPE** (1) labeled with same data as holotype (CNCI).

**Description (Male).** Length 2.1 mm, 2.9 times longer than wide; light brown. Frons weakly, transversely impressed from epistoma to upper eye level; surface shining, minutely punctured and with short, inconspicuous setae; epistoma evenly arcuate. Antennal club nearly circular, 1.2 times longer than wide, with two obscure, arcuate sutures. Pronotum 1.2 times longer than wide, widest near base; sides weakly arcuate, anterior margin broadly rounded; discal surface evenly convex; anterior half with minute, very fine, scattered asperities; posterior portion with large, distinctly impressed punctures, these separated by a distance equal to or less than their diameters; interpuncture surface smooth, shining; vestiture consisting of abundant, fine, erect, inconspicuous, yellowish setae over entire surface. Elytra 1.8 times



**Figures 179–184.** Declivities of *Dendrocranulus* spp. **179)** *D. ambiguous*. **180)** *D. barbatulus*. **181)** *D. carbonarius*. **182)** *D. convexus*. **183)** *D. fulgens*. **184)** *D. hispaniolus*.

longer than wide, 1.6 times longer than pronotum; sides parallel, apex broadly rounded; discal striae punctured in regular rows, punctures small, weakly impressed; discal interstriae 3.0–4.0 times wider than striae, smooth, shining, each with a median row of erect, yellowish setae. Declivity evenly, steeply convex; all striae distinctly but weakly impressed, striae 1 more so than others; interstriae 1 weakly elevated, other interstriae weakly convex, all interstriae with a median row of small distinct granules.

**Female.** Unknown.

**Distribution.** This species is known from Jamaica.

**Etymology.** From *convexus*, Latin for arched outward, referring to shape of the declivity.

**Comments.** This species was previously recorded as *Dendrocranulus vicinialis* Wood (Bright and Skidmore 1997). Further examination showed that it was not conspecific with *D. vicinialis* and required a new name.

Adults of this species may be recognized by the evenly convex elytral declivity with all striae distinctly impressed and all interstriae bearing a median row of small granules.

***Dendrocranulus fulgens* Bright, sp. nov.**

Figure 183.

**Type Material. HOLOTYPE** (male) labeled: “MONTSERRAT: between Anne-Maries and Beattie house, 28 June 2002, M. A. Ivie colr.” / “HOLOTYPE *Dendrocranulus fulgens* D. E. Bright 2016” (WIBF [CNCI]).

**PARATYPES** (2): 1 labeled with same data as holotype (CNCI); 1 labeled: “W. I., MARTINIQUE: 4 mi SW Le Marin, Morne Aca, 260 m, N14°27.8, W60°53.9” / “Humid forest hilltop clearing FIT, S. Peck, 13–

28.VI.2012" (SBPC). One damaged specimen, possibly this species but not designated as a paratype, is labeled "GRENADA: Par. St. Andrews, Mirabeau Agric. Lab., 23.II.1990, uv light, R. E. Woodruff" (SBPC).

**Description (Male).** Length 1.8–1.9 mm, 3.0 times longer than wide; light yellowish-brown. Frons weakly, transversely impressed from epistoma to upper eye level; surface shining, minutely punctured and with short, inconspicuous setae; epistoma evenly arcuate. Antennal club nearly circular, 1.2 times longer than wide, with two obscure, strongly arcuate sutures. Pronotum as long as wide, widest at middle; sides broadly arcuate, anterior margin broadly rounded; discal surface evenly convex; anterior half with very small, fine, scattered asperities; posterior portion with large, distinctly impressed punctures, these separated by a distance less than their diameters; interpuncture surface smooth, shining; vestiture consisting of abundant, fine, erect, inconspicuous, yellowish setae over entire surface. Elytra 1.8–1.9 times longer than wide, 1.5 times longer than pronotum; sides parallel, apex broadly rounded; discal striae punctured in regular rows, punctures small, weakly impressed; discal interstriae 1.5–2.0 times wider than striae, smooth, shining, each with a median row of erect, yellowish setae. Declivity evenly, steeply convex; all striae distinctly but weakly impressed, striae 1 more so than others; interstriae 1 weakly elevated, other interstriae weakly convex, all interstriae smooth, shining, without granules.

**Female.** Unknown.

**Distribution.** This species is known from Montserrat and Martinique.

**Etymology.** From *fulgeo*, Latin for shining, referring to the elytral surface.

**Comments.** Adults of this species may be similar to those of *D. convexus*, but differ by their smaller, more slender body and by the absence of granules in the declivital interstriae.

***Dendrocranulus hispaniolus* Bright, sp. nov.**

Figure 184.

**Type Material.** **HOLOTYPE** (female) labeled: "WEST INDIES, HAITI, Fermathe, Baptist Haiti Mission, 18°27'N, 72°18'W" / "4.IV.1985, pheromone trap *Pinus occidentalis*, R. Billings, collr" / "HOLOTYPE *Dendrocranulus hispaniolus* D. E. Bright 2016" (CNCI). **PARATYPES** (4): 3 labeled with same data as holotype (CNCI); 1 labeled: "HAITI, Kenscoff, La Decouverte, 5000 ft" / "III.10.1955, A. M. Nader" (CNCI).

**Description (Female).** Length 2.1–2.7 mm, 2.8 times longer than wide; dark reddish-brown to black. Frons weakly convex; surface shining, densely granulate, with an obscure, longitudinal smooth line extending from epistoma to upper eye level and with abundant, erect, long setae; epistoma evenly arcuate. Antennal club nearly circular, 1.2 times longer than wide, with two obscure, procurved sutures. Pronotum 1.1 times longer than wide, widest near base; sides weakly arcuate, anterior margin broadly rounded; discal surface evenly convex; anterior half with minute, very fine, scattered asperities; posterior portion with large, distinctly impressed punctures, these separated by a distance equal to less than their diameters; interpuncture surface smooth, shining; vestiture consisting of abundant, fine, erect, inconspicuous, yellowish setae over entire surface. Elytra 2.4 times longer than wide, 2.4 times longer than pronotum; sides parallel, apex slightly emarginate; discal striae punctured in regular rows, punctures large, distinctly impressed; discal interstriae 2.0–3.0 times wider than striae, smooth, shining, each with a median row of large, impressed punctures, these very slightly smaller than strial punctures, resulting in the appearance of a randomly punctured elytral surface, each interstriae with a row of short, erect, yellowish setae. Declivity deeply sulcate; lateral margins of sulcus strongly, subacutely elevated, much higher than interstriae 1, with a weakly elevated swelling at base in line with interstriae 2 and 3, without granules; striae and interstriae deeply, randomly punctured; striae 1 weakly impressed; interstriae 1 with a row of extremely minute granules.

**Male.** Unknown.

**Distribution.** This species is known from Haiti.

**Etymology.** This species named for the island of Hispaniola.

**Comments.** Adults of this species may be recognized by their larger size, by the darker color and by the distinctly deeply impressed elytral declivity with the lateral margins strongly elevated and bearing a weakly elevated swelling at the base in line with interstriae 2 and 3. In addition, the frons of the female is weakly convex, densely granulate and bears abundant setae.

**Genus *Minyotrypetes* Bright, genus nov.**

With the usual character states of the Dryocoetini as given by Wood (2007) except antennal funicle 3-segmented (pedicel excluded); antennal club flat, without visible sutures but with an oblique, chitinized septum extending halfway across club (visible in cleared, microscopic preparations); body slender; pronotum longer than wide.

**Type species.** *Minyotrypetes primus* Bright, sp. nov., monotypic.

**Etymology.** From *minyō*, Greek for small plus *trypetes*, Greek for borer. Gender neuter

**Comments.** As with the next genus described below, this genus is established for one species from Curaçao that differs from all other species in the Dryocoetini and which cannot be placed in any previously described genus.

Prior to the description of this genus and the one following, the tribe Dryocoetini contained two genera in the West Indies and four genera (one introduced) in South America (Wood 2007). Species in two of the South America genera (*Coccotrypes* and *Dryocoetes*) have an obliquely truncate antennal club and a 4-segmented funicle (pedicel excluded) and species in the other two genera (*Dendrocranulus* and *Chiloxylon*) have a flattened antennal club with either arcuate sutures or the sutures are obscure and partly septate. The antennal club of adults of the one species in this genus is completely different, as outlined below.

***Minyotrypetes primus* Bright, sp. nov.**

Figures 556, 557.

**Type Material.** HOLOTYPE (sex?) labeled: “CURAÇAO: Christoffel Park, 12°20'29”N, 69°06'28”W, blacklight trap, 10 Nov. 2014, R. Turnbow” / “HOLOTYPE *Minyotrypetes primus* D. E Bright 2016” (RHTC [FSCA]).

**Description (sex?).** Length 1.3 mm, 3.3 times longer than wide; light reddish-brown. Frons slightly flattened and weakly concave from epistoma to slightly above upper level of eyes, with a short, fine, elevated, longitudinal carina extending from epistomal margin halfway to upper level of eyes; surface finely minutely reticulate with several, small, scattered granules, vestiture inconspicuous. Antennal scape as long as club; pedicel larger than funicle segments; club 1.4 times longer than wide; sutures not visible except for one oblique, chitinized septum on basal half extending from lateral margin halfway across club (visible in cleared, microscopic preparations). Pronotum 1.3 times longer than wide, widest at middle; sides parallel, very slightly arcuate; anterior margin broadly rounded, bearing a row of eight, very small serrations; anterior slope bearing numerous, very low, small asperities, surface between asperities weakly shining, minutely reticulate; summit not elevated; posterior area weakly shining, reticulate, with very faint granules and obscure punctures. Elytra 2.0 times longer than wide; sides parallel; apex broadly rounded; entire discal surface dull, minutely reticulate, striae and strial punctures not evident except striae 1 is very weakly impressed; strial punctures faintly visible on lateral portions. Declivity convex, unmodified; surface as on disc except for a row of three or four spatulate setae in interstriae 1, 3, 5 and 7, these shorter than distance between rows.

**Distribution.** This species is known from Curaçao in the Netherlands Antilles.

**Etymology.** From *primus*, Latin for first.

**Comments.** Adults of this species may be distinguished by the 3-segmented antennal funicle (pedicel excluded), by the oblique, partial septum in the antennal club, by the narrow body and by the characters of the elytra, frons and pronotum as noted above.

**Genus *Neocultus* Bright, genus nov.**

With the usual character states of the Dryocoetini as given by Wood (2007) except antennal funicle 3-segmented (pedicel excluded); antennal club flat, with two, transverse sutures, with an obscure third suture at extreme tip.

**Type species.** *Neocultus thomasi* Bright, sp. nov., monotypic

**Etymology.** From *neos*, Greek for new or recent plus *cultus*, Latin for inhabit. Gender masculine.

**Comments.** This genus is established for one species from Curaçao that differs significantly from other species in the Dryocoetini. For further comments, see notes for the preceding genus.

***Neocultus thomasi* Bright, sp. nov.**

Figures 461, 531.

**Type Material. HOLOTYPE** (female) labeled: “CURAÇAO: Christoffel Park, Copper Mine Tr., 12°20'10"N, 69°06'59"W, blacklight trap, 8 Nov. 2014, R. Turnbow” / “HOLOTYPE *Neocultus thomasi* D. E. Bright 2016” (RHTC [FSCA]). **ALLOTYPE** labeled with same data as holotype plus my allotype label (RHTC [FSCA]). **PARATYPES** (36): 35 labeled with same data as holotype (FSCA, RHTC, CNCD); 1 labeled “CURAÇAO: Christoffel N. P., South car route, dry wash across road, 12°20'51.89"N, 69°6'24.68"W, 9–XI-2014, M. C. Thomas, blacklight trap” (FSCA).

**Description (Female).** Length 1.9 mm, 2.8 times longer than wide; brown. Frons broadly, shallowly concave from epistomal margin to upper level of eyes; surface shining, densely, finely punctured, with abundant, short setae, with a row of these longer and slightly downward curved on periphery of concave area, extending one-third of distance to epistomal margin; epistomal margin straight, acutely elevated, bearing a row of short setae. Antennal scape 1.3 times longer than club; pedicel larger than funicle segments; club 1.1 times longer than wide, sutures chitinized, each marked by a row of distinct setae. Pronotum 1.1 times longer than wide, widest on posterior half; sides parallel on basal half, broadly rounded to anterior margin; anterior margin bearing an arcuate row of very low, acute serrations; anterior slope bearing numerous, low, shining asperities, surface between asperities dull, reticulate or very finely punctured; summit not elevated; posterior area moderately shining, with numerous, low granules or asperities. Elytra 1.5 times longer than wide; sides parallel; apex broadly rounded; discal striae (except 1) not impressed, punctured in regular rows, punctures large, closely placed, each with a short seta; discal interstriae narrower than striae, moderately shining, impunctate, each bearing a median row of erect, hairlike setae, these shorter than distance between rows. Declivity convex, surface moderately shining; striae very slightly impressed, punctures similar to those on disc, each with a very short seta; interstriae 1 very slightly elevated, remaining interstriae not elevated, each with a median row of very small granules and short setae, these shorter than interstitial width.

**Male.** Similar to female in all respects except frons slightly convex, densely punctured with very short setae, none of which are especially longer and serrations on anterior margin of pronotum slightly more obvious.

**Distribution.** This species is known from Curaçao in the Netherlands Antilles.

**Etymology.** Named for Dr. M. C. Thomas, collector of this species and many other West Indian specimens used in this monograph.

**Comments.** Adults of this species may be readily recognized by the flat antennal club which bears two transverse, straight sutures marked by a row of dense setae with a third row of setae sometimes visible at extreme apex, by the 3-segmented antennal funicle (pedicel excluded), by the characters of the female frons as described above and by the other characters mentioned above. Paratypes range in length from 1.5 mm to 1.9 mm.

## TRIBE PREMNOBIINI

### Genus *Premnobius* Eichhoff

*Premnobius* Eichhoff 1878b: 65, 404; Wood and Bright 1992: 651; Bright and Skidmore 2002: 415 (checklist); Cognato 2013; Bright 2014: 154.

Most previous authors have placed this genus in the tribe Xyleborini as an aberrant member. Cognato (2013) summarized the taxonomic history of this genus and tribe and provides a molecular phylogeny and a taxonomic review of the tribe. Wood (2007) comments on the intermediate position of the genus between the Ipini and Dryocoetini but retains the genus in the Xyleborini, mainly on the basis of authors' choice. Alonso-Zarazaga and Lyal (2009) place *Premnobius* in a tribe of its own, following the usage of Browne (1961), Bright and Torres (2006) and others. Cognato (2013) places this tribe in the Ipini as a sub-tribe. It is maintained here as a separate tribe in the subfamily Ipinae.

Adults (females) of *Premnobius* species may be distinguished from members of the Xyleborini by the flattened antennal club that is entirely pubescent except on a small, corneous basal portion, by the presence of tubercles on the posterior face of the protibia and by the preguila which is flush with the remainder of the head (impressed in all members of the Xyleborini, with a few exceptions).

All 25 species of *Premnobius* originally occurred in Africa. Three species have been introduced into North and South America (Wood 2007), one of which occurs in the West Indies.

Wood (2007) states that all species are xylomycetophagous (fungus feeding) and reproduce by inbreeding or consanguineous polygyny. Adult females bore a tunnel directly into the host material for three cm, then branch or radiate palmately. An ambrosia fungus is carried in by the female and grows along the tunnel walls. Larvae feed on the fungus and when mature, construct pupal chambers above and below the parental tunnel. Mating occurs with the flightless males in the parental gallery and emergence of the females occurs through the original entrance hole.

Males are rarely collected because they are flightless and rarely leave the brood tunnels. They are much smaller than the females and their morphological characters are poorly developed. The male elytral declivity is more gradual and less strongly impressed than in that in the female (Browne 1961).

### *Premnobius cavipennis* Eichhoff

Figures 462, 532.

*Premnobius cavipennis* Eichhoff 1878b: 404; Wood and Bright 1992: 651; Bright and Skidmore 1997: 141; Bright and Skidmore 2002: 101; Bright 2014: 154.

**Description (Female).** Length 2.8–3.1 mm, 3.2 times longer than wide; reddish-brown, darker near declivity. Frons convex, surface finely punctuate, sparsely granulate, vestiture sparse, consisting of short, yellowish setae. Antennal club flattened, 1.1 times longer than wide. Pronotum 1.2 times longer than wide; sides straight, anterior margin broadly rounded, unarmed; anterior slope with numerous, broad, slightly elevated asperities, extending as far back on disc as on sides; posterior portion smooth, brightly shining, punctures small, widely separated. Elytra 1.5 times longer than wide; sides parallel on basal three-fourths, truncate behind; striae not impressed, punctures large, shallow, in regular rows; interstriae smooth, shining, punctures numerous, often in two rows, much smaller than striae punctures.

tures. Declivity abrupt, concave, acutely margined on a complete circle; lateral margins with two (sometimes three) distinct granules, granules sometimes visible along suture; declivital face punctured.

**Male.** Not represented in material examined. See Browne (1961) for an illustration and discussion.

**Distribution.** Known from Florida, throughout Mexico to northern South America and probably occurs throughout the West Indies; widespread in Africa and Madagascar.

**Specimens examined.** **BAHAMAS: Andros Island,** BARC, pasture edge-blacklight (1–CNCI); Atala Coppice, blacklight trap, 8.VI.2004, R. Turnbow (3–RHTC); London Ridge, 2.7 mi N, 0.8 mi E. Forfar Field Station, 5 May 1994, R. S. Anderson, high interior coppice litter (1–CNCI); Maidenhair Coppice, BLT, 11.VI.2004, M. C. Thomas (4–FSCA), the same locality except 24–28.VII.2006, M. C. Thomas, T. R. Smith, uv trap in interior coppice (2–FSCA). **Grand Bahama Island,** Freeport (3–USNM). **New Providence Island,** Carmichael area, 25°01'N, 77°25'W, 14 April 2007 / at blacklight in Caribbean pine forest and scrub, W. E. Steiner and J. M. Swearingen (3–USNM). **BARBADOS:** Turner's Hall Woods, 200 m, 24.V-6.VI.2006, forest Malaise, S. and J. Peck (1–SBPC). **CUBA:** Holguin, Mayari: N. Mensura Piloto, 20.52917–75.76820, 747 m, 10.V.2013, R. Anderson, litter (1–CMNO); Camagüey Province, Reserva Ecológica Limones-Tuabaquey, canyon trail, 21.59214°N, 77.78833°W, 98 m, mercury vapor light, 16.V.2013, A. B. T. Smith, A. Deler-Hernández (1–CMNO); Cienfuegos Province, Jardín Botánico de Cienfuegos, 22.12179°N, 80.32646°W, 73 m, mercury vapor light, 21.V.2013, A. B. T. Smith, F. Cala-Riquelme, A. Deler-Hernández (3–CMNO). **DOMINICA:** Springfield Estate, Mt. Joy House, 400 m and 550 m, 31.V-16.VI.2004, S. and J. Peck (4–SBPC). **DOMINICAN REPUBLIC:** Duarte, Reserva Loma Quita Espuela, Canelo, 13.2 km NNE San Francisco de Macoris, 19–24–27N, 70–09–54W / 523 m, 6 Apr 2004, C. Young, R. Davidson, J. Rawlins, disturbed field near wet forest fragment, canopy trap, sample 11193 (2–CMNH); 1–2 km S Rio Baiqueta, Jarabacoa (2–USNM); La Estrelleta Province, 4 km SE of Rio Limpio (1–USNM); Province La Vega, La Ciénega, 1100 m, 29 July 1999, at light, M. A. Ivie and K. A. Guerrero (9–WIBF); Dajabon, Mariano Cestero, 13.VIII.1980, 650 m, A. Norrbom (3–CMNH); Sierra Prieta, Santo Domingo Province, 18°38.974'N, 69°58.408' W, 06.VIII.2011, D. Rerez, B. Hierro, R. Bastardo (1–USNM). **GRENADA:** Saint Andrew, Mirabeau Agriculture Laboratory, various dates in 1990, various collectors, light trap (15–SBPC); Saint James Parish, Black Bay, 26.II.1990, R. E. Woodruff, light trap (2–SBPC). **GADELOUPE:** Basse-Terre: Rivière Sens, Sentier Houëlemont, N15°58.93, W61°42.62, 80 m, 19–31.V.2012, humid forest flight intercept trap, S. Peck (4–SBPC, CNCI); Basse-Terre: Pigeon, Trace Poirier, N16°08.83, W61°45.22 / humid forest flight intercept trap, 14–31.V.2012, S. Peck (3–SBPC). **HAITI:** Manville, Feb. 18, 1922 (1–AMNH). **JAMAICA:** Manchester Parish, Kendal, 26 May 1950, J. A. Dale (1–IJCK); Saint Andrew Parish, Beverly Hills, August 1961, R. P. Bengry (1–IJCK); Collins Green, 10 July 1950, A. M. Wiles (1–IJCK); Irish Town, 24 August 1966, Howden and Becker (4–CNCI); Irish Town, 27 August 1966, Howden and Becker (2–CNCI); Irish Town, 28 August 1966, Howden and Becker (7–CNCI); Irish Town, August 1966, Howden and Becker (8–CNCI); Saint James Parish, Montego Bay, 1920, Coconut trunk, A. H. Ritchie (2–NHML); Trelawny Parish, Barbecue Bottom, 13 August 1966, A. F. Howden (1–CNCI); Saint Andrew Parish, Jack's Hill, Maya Campground, 22–31.VII.1985, C. B. and H. V. Weems Jr., G. B. Edwards, uv light (89–FSCA). **MARTINIQUE:** RF de Fond-Baron, 400 m., 02.VI.2006 / Piège vitre, En sous bois, J. Touroult (1–CNCI); Réserve Piton Carbet, RF de Fond-Baron, piège vitre, 5.II.2007, J. Touroult (1–CNCI); 4 km SW Le Marin, Morne Aca, 260 m, N14°27.8, W60°53.9 / humid forest hilltop clearing flight intercept trap, 13–28.VI.2012, S. Peck (6–SBPC, CNCI); 5 km SE Le Marin, Forêt Creve, Coeur, 35 m, N14°27.05, W60°50.91 / dry forest uv trap, 10–28.VII. 2012, S. Peck, collr. (1–SBPC). **MONTSERRAT:** Cassava Ghaut, Beattie House, various dates 2002 and 2003, K. Marske, colr, house lights, night or uv light (7–WIBF); Fogerty Ghaut, 15 May 2002, K. A. Marske, leaf litter (1–WIBF); Gunn Hill, 1106 ft., 16°45.56'N, 62°12.63'W, 20 June 2002, K. A. Marske, leaf litter (4–WIBF); Jack Boy Hill, 16°45.887'N, 62°10.830'W, 06 June 2003, black fungus galls, K. A. Marske (1–WIBF); Jubilee Heights, 16°45.393'N, 62°12.560'W, 1441 ft., July 2003, leaf litter, K. A. Marske (2–WIBF); Underwood Ghaut, 16°46.230'N, 62°11.693'W, 1427 ft., 04 June 2003, Berlese leaf litter, K. A. Marske (1–WIBF); Woodlands, Cassava Ghaut, Beattie House, 30 May-06 June 2002, uv light, M. A. Ivie (1–WIBF), same locality, 01–29 June 2003, K. A. Marske, flight intercept trap (1–WIBF). **PUERTO RICO:** Cayey, 24.II.1999 / in *Eucalyptus robusta* log, J. Torres (CNCI) and in *Calophyllum brasiliensis* log (CNCI); Sabana, Luquillo, 12.VI.1989, light trap (1–CNCI); Carite State Forest, at uv light, VII.28.1999, C. W. O'Brien: Kovarik (2–CNCI); Guánica, VII.1996, M. Canals, ex. light trap (2–CNCI); Guaynabo, 21.IV.1996, in *Terminalia catappa* log (CNCI); Río Grande, 20.II.1999, in *Manilkara bidentata* log (CNCI); Hwy. 120, km 16.2, Hdqt. Maricao Saint For., 8.8.1999, at uv light, C. W. O'Brien (1–CNCI); Guaynabo, 21.IV.96 / ex *Terminalia catappa* log (CNCI); Río Grande, 20.II.99 / in *Manilkara bidentata* log (CNCI). **SAINT KITTS-NEVIS: Saint Kitts,** Parish Saint Peters, Fountain Estates, 8–9.III.2006, R. E. Woodruff, blacklight trap (1–REWC). **SAINT LUCIA:** Barre de L'Isle, 13.934°N, 60.958°W, 320 m, 22–29 May 2009, Malaise, R. C. Winton (1–WIBF), same locality, A. R. Cline, S. D. Gaimari and R. Winton, 16–22 May 2009 (1–WIBF); La Porte Forest Trail, 13°84'N, 60°97'W, 13.VII.2009, 272 m / in dead fallen tree, D. E. Bright (1–CNCI); Quart Vieux Fort National For., Quilless, west side, cloud forest, 27.V.1987, R. E. Woodruff, blacklight trap (5–REWC). **VIRGIN ISLANDS (BRITISH): Tortola,** Windy Hill, 24–29 Dec. 1993, thorn shrub, T. K. Philips, Lindgren funnel trap (1–WIBF); Mt. Sage National Park, N side Mt. Sage, 1550 ft., 26 July-10 Oct. 1994, flight intercept trap

(3-WIBF). **VIRGIN ISLANDS (U. S.): Saint Croix**, Est. North Hall, Creque Gut, 100 ft., 23 Feb.-17 Mar. 1993, J. Keularts (1-WIBF); Est. Fountain, 350 ft., 23 Feb.-17 Mar. 1993, J. Keularts (8-WIBF). **Saint John**, Brown Bay, 4 March 1984, W. B. Muchmore (2-WIBF); Annaberg Ruins, 13 Jun 1980, along old walls, W. B. Muchmore, (2-WIBF); Estate Saint Hope, 980 ft., 03 Jan. 1993–July 06, 1994, flight intercept trap (1-WIBF); Lameshur Bay, Gray Gut, 12 Jun 1980 / under large Tamarind tree, W. B. Muchmore (1-WIBF); Little Lameshur Bay, 18 Jun 1980, W. B. Muchmore (1-WIBF). **Saint Thomas**, Est. Enighed, Magen's Bay Arboretum, light, 01 Jan. 1993 (2-WIBF).

**Record from literature. BAHAMAS: Andros Island**, Pigeon Cay (Turnbow and Thomas 2008).

**Comments.** The distinctive antennal club and features of the elytral declivity outlined above will immediately distinguish the females of this species.

## TRIBE XYLEBORINI

### Genus *Ambrosiodmus* Hopkins

*Ambrosiodmus* Hopkins 1915a: 55; Wood and Bright 1992: 670; Bright and Skidmore 2002: 295 (check-list); Bright 2014: 155.

The principal character that distinguishes members of *Ambrosiodmus* from other genera in the Xyleborini is the presence of numerous, low, transverse asperities or granules on the posterior half of the pronotal disc. Other distinctive characters are mentioned in the generic key.

Ninety-four species are recorded in this genus by Bright and Skidmore (2002); six are herein reported from the West Indies.

As with other genera of Xyleborini, all members of this genus are xylomycetophagous and polyphagous.

### Key to the species of *Ambrosiodmus* in the West Indies

(Females only)

1. Elytral declivity with two (sometimes three) coarse tubercles in interstriae 3, these as long as or longer than interstitial width; elytral declivity distinctly impressed near suture; length 2.5–3.2 mm; widely distributed ..... ***A. hagedorni* (Iglesias)** (p. 252)
- Elytral declivity without tubercles or with small granules much shorter than interstitial width ..... **2**
- 2(1). Declivital interstriae 1, 2 and 3 without granules, interstriae 3 may have one or two small granules at declivital base; length 1.9–2.1 mm; widely distributed ..... ***A. devexus* (Wood)** (p. 252)
- Declivital interstriae 3 and usually 1 and 2 with small but distinct granules ..... **3**
- 3(2). Declivital interstriae 2 wider than 1 and 3, bearing distinct granules, these larger than granules in interstriae 1 and 3; striae punctures large, deep; length 2.5–2.9 mm; Florida ..... ***A. opimus* (Wood)** (p. 257)
- Declivital interstriae 2 equal in width to 1 and 3, bearing very small granules or granules obsolete ..... **4**
- 4(3). Length 2.7 mm; elytral declivity broadly convex, interstriae 2 not impressed; body completely black; Dominican Republic ..... ***A. infidelis* Bright, sp. nov.** (p. 254)
- Length 1.9–2.4 mm; interstriae 2 slightly impressed below level of interstriae 1 and 3 on declivity; body reddish-brown ..... **5**
- 5(4). Length 2.4 mm; Jamaica ..... ***A. nuperus* (Bright)** (p. 255)
- Length 1.9–2.3 mm; widely distributed ..... ***A. obliquus* (LeConte)** (p. 255)

***Ambrosiodmus devexus* (Wood)**

Figures 185, 402.

*Xyleborus devexus* Wood 1977: 219 (Florida) (preoccupied by Schedl 1977).

*Xyleborus devexus* Wood 1978: 398 (replacement name).

*Ambrosiodmus devexus*: Wood and Bright 1992: 673; Bright and Skidmore 2002: 104; Bright 2014: 156.

**Description (Female).** Length 1.9–2.1 mm, 2.5 times longer than wide: light to dark reddish-brown. Frons convex, very weakly, transversely impressed above epistoma, with a very weak, median elevation at level of upper margin of eye; surface dull to moderately shining and finely, minutely reticulate, with scattered, shallow punctures, each of which bears a long, fine, erect seta. Antennal club large, as long as wide to slightly longer than wide, basal segment occupies one-third of total club length; sutures weakly arcuate, bordered by a row of short setae; posterior face with two, weak, arcuate sutures. Pronotum very slightly longer than wide, widest at middle; sides arcuate from base to broadly rounded anterior margin; anterior slope with numerous, erect, acute asperities, these becoming progressively smaller over posterior portion to base; surface between asperities on posterior portion smooth, dull, minutely reticulate, with minute, impressed punctures. Elytra 1.4 times longer than wide; sides parallel for almost entire length, apex very broadly rounded; discal striae punctured in regular rows, punctures large, close, deeply impressed, each bearing a very short seta; discal interstriae slightly wider than striae, weakly convex, with a median row of punctures, these slightly smaller and slightly less deeply impressed than those in striae, each puncture bearing a long, erect seta. Declivity convex, weakly impressed between interstriae 3; interstriae 1 and 3 not bearing granules.

**Male.** Unknown.

**Distribution.** Occurs from southern Florida, Dominica, Dominican Republic, Puerto Rico and St Croix in the U. S. Virgin Islands.

**Specimens examined. DOMINICAN REPUBLIC:** Barahona, 7 km NW Paraiso, 200 m, 27.XI.1991, rainforest remnant, sweeping, Masner and Peck (2–CMNO, CNCI) and 27.XI-4.XII.1991, intercept trap (1–CNCI); La Vega, 19 km E. El Rio, cloud forest, 3.VIII.1979, C. W. O'Brien (1–CNCI). **PUERTO RICO:** Adjuntar, 15.II.1934, R. G. Oakley, dead wood (10–USNM, CNCI); Guaynabo, 15.XII.1995, J. Torres (1–CNCI); 5 mi NE Jayuya, 22.VII.1969, H. and A. Howden (1–CNCI); Rio Grande, 26.IV.1940, *Cedrella mexicana*, D. DeLeon (15–USNM); San Juan, San Juan, Site 4 EDRR, 18.30471–66.07043, 15.VII.2013, C. Torres and H. Rivera (1–MSUC). **VIRGIN ISLANDS (U. S.): Saint Croix,** Estate North Star, 16 NOV-18 DEC 1992, 60 ft., flight intercept trap 7, J. Keularts (2–WIBF); Estate Fountain, 350 ft., 19 May-18 June 1993, J. Keularts, flight intercept trap 15 (1–WIBF).

**Records from literature. DOMINICA:** Island record only (Barriga-Tuñón and Kirkendall 2015); **MONTSERRAT:** Island record only (Ivie et al. 2008a); **PUERTO RICO:** Vega Alta (Wood 1982).

**Comments.** Females of this species are almost identical to those of *A. obliquus*, differing by the absence, in *A. devexus*, of small granules in declivital interstriae 1 and 3. Individuals of *A. devexus* are slightly smaller than those of *A. obliquus* but the overlap in length is considerable, evident when series are compared.

The holotype and most of the paratypes have been examined.

***Ambrosiodmus hagedorni* (Iglesias)**

Figures 463, 533.

*Xyleborus hagedorni* Iglesias 1914: 128.

*Ambrosiodmus hagedorni*: Wood and Bright 1992: 674; Bright and Skidmore 2002: 104; Bright 2014: 156.

*Ambrosiodmus lecontei* Hopkins 1915a: 56; Wood and Bright 1992: 675; Bright 2014: 156. **New Syn-**

**onymy.**

*Xyleborus gundlachi* Eggers 1931: 20 (Cuba).

**Description (Female).** Length 2.5–3.2 mm, 2.3 times longer than wide; light to dark brown. Frons convex, slightly protuberant above epistoma; surface dull, punctures shallow, widely separated; vestiture consisting of scattered, hairlike setae. Antennal club circular, slightly longer than wide. Pronotum slightly

wider than long, sides weakly arcuate, anterior margin broadly rounded, unarmed; asperities on anterior slope large, prominent; posterior portion finely asperate, asperities scarcely elevated, blunt, surface between asperities minutely reticulate. Elytra 1.4 times longer than wide; sides parallel on basal three-fourths, broadly rounded behind; striae not impressed; interstriae smooth, punctures smaller, slightly impressed, becoming granulate toward declivity. Declivity convex; interstriae 1 and striae 1 impressed; punctures in interstriae 1 large, deeply impressed; interstriae 3 slightly elevated, with two or three prominent granules, the largest of these as long as or slightly shorter than width of an interstriae; interstriae 4–6 distinctly granulate; ridge of interstriae 7 entire, smooth.

**Male.** Not present in material available. See Bright (1968) for a description.

**Distribution.** This species occurs from southern United States to southern Mexico and Brazil and probably occurs throughout the West Indies.

**Specimens examined.** **BAHAMAS:** Grand Bahama, V3.86 (1–CNCI). **BARBADOS:** Island record only, 5/15/23, B. A. Bourne, collector (2–USNM). **CAYMAN ISLANDS:** Grand Cayman, forest, 1.5 km S of Hutland, 18 February 1983 / at blacklight in forest near mangrove, W. E. Steiner, J. M. Swearingen, F. J. Burton (1–USNM); 17.VI.1990: Fitzgerald, blacklight trap (1–FSCA). **CUBA:** Cienfuegos Province, Jardín Botánico de Cienfuegos, 22.12179°N, 80.32646°W, 73 m, mercury vapor light, 21.V.2013, A. B. T. Smith, F. Cala-Riquelme, A. Deler-Hernández (1–CMNO); Gran Piedra nr. Santiago, Oriente Province, May 30–31, 1959, M. W. Sanderson (1–INHS); Holguín Province, Parque Nacional La Mensura, mixed pine forest, 20.48275°N, 75.80745°W, 716 m, mercury vapor light, 10.V.2013, A. B. T. Smith, F. Cala-Riquelme (1–CMNO); Soledad nr. Cienfuegos, 6.20.VIII (1–CNCI). **DOMINICA:** Portsmouth, Cabrits National Park, 30 m, tropical deciduous flight intercept trap, 2–13.VI.04, S. and J. Peck (1–CNCI); Springfield Estate, 29.V.16.VI.04, 375 m, forest edge Malaise trap, S. and J. Peck (1–CNCI); Saint Patrick Par., Grand Bay Agricultural Station, 24 June 2004, R. Turnbow (1–RHTC). **DOMINICAN REPUBLIC:** Barahona, 5 km SE Polo, slope of Loma La Torre (1–CMNH); Barahona, 7 km NW Paraiso, 200 m, rainforest remnant, 27.XI-4.XII.91, intercept trap, Masner and Peck (1–CNCI); Barahona, 6 miles NW Paraiso, Rio Nizao, 18.02N, 71.12W, 170 m, 25–26 July 1990, C. Young, J. E. Rawlins, S. A. Thompson (1–FMNH); Barahona, 9.2 km NW Paraiso, confluence of Rio Nizao and Rio Coltico, 18.03N, 71.12W, 230 m, 9–10 August 1990, J. Rawlins, S. Thompson (2–FMNH); Barahona, 2 km E Payoso, mercury vapor and blacklight, 13 July 1998, R. Turnbow (3–RHTC); Duarte, Reserva Loma Quita Espuela, El Cadillac, 6.7 km NE San Francisco de Macoris, 19.20.12N, 70.08.59W, 280 m, 5 Apr 2004, R. Davidson, J. Rawlins, C. Young, weedy regrowth with coffee, cacao, uv light (1–CMNH); El Sebo, Loma de Chivo, 7 mi. N. Pedro Sanchez, 5000 ft., 20.VI.1998, blacklight trap, R. E. Woodruff: H. Freytag (3–REWC); Hato Mayor, Parque Los Haitises, E of Trepada Alta, 12 km W El Valle, 18.59N, 69.30 W, 145 m / 6 July 1992, mesic forest on limestone, S. Thompson, C. Young, R. Davidson (1–CMNH); La Vega Province, Jarabacoa, 13 November 1984: Spangler and W. Faitoute / blacklight at Rio Jimenoa (1–USNM); Province Monsenor Nouel Bona, Hotel Jacaranda, 27–28.VI.1998, R. Woodruff, R. Baranowski, blacklight trap (1–REWC); Pedernales, 4 km W Oviedo, 10 m, arid thorn forest, 28.XI-4.XII.91, intercept trap, Masner and Peck (10–CNCI); Province Hato Mayor, 3 km S Sabana de la Mar, 21 m, 3.VIII.1999, M. A. Ivie (1–WIBF); Pedernales Province, 26 km N Cabo Rojo, 825 m, flight intercept trap, 21.VIII.1992, D. Sikes and J. Brodzinsky (1–WIBF); Pr. Puerto Plata, top of Pico Isabel de Torres, near Telefonico, 31 July 1999, at light, K. A. Guerro (2–WIBF); RD-207, Loma Novillero, Oficina de Foresta, San Cristobal Province, 70 m, 2.VI.2004, D. Perez, B. Hierro (5–USNM); Province Azua, Las Yayitas, 3.VIII.2008, D. Perez and S. Medrano (1–USNM); San Cristobal Province, ~3 km. N. La Colonia, Mano Mauey, 7.IX.2008, D. Perez, B. Hierro, R. Bastardo, S. Medrano (1–CNCI); Province Barahona, Larimar Mine, nr. Filpinas, various dates in 1993 and 1993, blacklight trap, R. E. Woodruff and P. E. Skelley (7–REWC, RHTC); Sierra Prieta, Santo Domingo Province, 18°38.974'N, 69°58.408' W, 06.VIII.2011, D. Perez, B. Hierro, R. Bastardo (8–USNM); Pedernales Province, Km. 1 Trail Fondo Paradí, 3 km S Oliedo, 17°49.085'W, 71°26.336 W, 120 m, 27.VIII.2011, D. Perez, S. Medrano, A. Hilario (1–USNM). **GRENADA:** Saint Andrew, Mirabeau Agriculture Laboratory, various dates in 1990, various collectors, light traps (2–SBPC). **GUADELOUPE:** Basse-Terre: Res. Fort de Duportall, Ste. Rose, 20 April 2003, J. Touroult, (1–WIBF); Basse-Terre: Grand Anse, Deshaies, 26 Dec 2002, J. Touroult (1–WIBF); Basse-Terre: Gourbeyre, Feb 2003, J. Touroult (1–WIBF); Basse-Terre: Rivière Sens, Sentier Houëlemont, N15°58.93, W61°42.62, 80 m, 19–31.V.2012, humid forest flight intercept trap, S. Peck (1–SBPC). **HAITI:** Montrouis, 5.VIII.1977, blacklight trap, J. H. Frank (3–RHTC). **JAMAICA:** Saint Andrew Parish, Hardwar Gap, 4000', 9 July 1966, Howden and Becker (1–CNCI); Saint James Parish, Montego Bay, 25 October 1950, H. B. Southby (1–IJCK). **MARTINIQUE:** Grande Rivière, Fond Marin, 21.VII.2001, Roguet/Marquet (1–CNCI); Gros-Morna, Route forest de Paloude, 20.VII.2001, 619 m-400 m, Roguet/Marquet (1–CNCI); Macouba Sentiér pedestre, 13.VII.2001, N 22, Roguet, Cauvin, M./Marquet, J. (1–CNCI); Morne Jacob, 450 m, 8.III.2011 / J. Touroult (1–CNCI); RF de Fond Baron, 400 m, 19.V.2006 / Piège vitre, en clairiere, J. Touroult (3–CNCI); Reserve Piton du Cabet, RF Fond Baron: vitre, 06.VII.2002 (3–CNCI); 4 km SW Le Marin, Morne Aca, 260 m, N14°27.8, W60°53.9 / humid forest hilltop clearing flight intercept trap, 13–28.VI.2012, S. Peck (9–SBPC, CNCI). **MONTSERRAT:** Centre Hills, Hope Ghaut, E of Salem, 21 June

2000, 850', M. A. Ivie and K. A. Guerrero, at uv light (1-WIBF); Gun Hill, 02 June 2002, K. A. Marske (1-WIBF). **NETHERLANDS ANTILLES: Saba**, Windwardside, Scout's Place Hotel at 402 m, 17.62773°N, 63.23122°W, pool, 12–15 Mar 2008, D. S. Sikes (1-WIBF); **Saba**: Bud's Mountain Trail, 1514', 24.IV.2013 / ex: rotten wood, D. E. Bright and B. A. Barr (6-CNCI). **PUERTO RICO: Bisley**, El Yunque, 16.IX.1989, on *Inga* logs (1-CNCI); Cayey, 5.XI.1992, in *Delonix regia* branch (CNCI); El Verde Field Station, Sonodora, 18 Feb. 1989, E. Mosteller (1-CNCI); El Yunque, Mt. Britton Trail, VIII.6.1999, C. W. O'Brien: Kovarik (1-CNCI); Guaynabo, 20.VI.1996 and VII.15–30.1996, light trap (5-CNCI); Hwy. 120, k11H8, Maricao Saint Res., 7.26.1979, O'Brien and Marshall (1-CNCI), same locality, km 15–16, VIII.10.1999 (1-CNCI); Isabela, Estación Experimental Agrícola, 15 enero 2011, E. Abreu (2-UPRC). **VIRGIN ISLANDS (BRITISH): Guana Island**, 9.V-9.VI.2000, W. P. Liao, Malaise trap (1-WIBF). **VIRGIN ISLANDS (U. S.): Saint John**, Lameshur Bay, 16–17.III.1984, uv light trap, W. B. Muchmore (2-WIBF); Lameshur-Europa Bay Rd., 17 Mar 1984, base of large tree (1-WIBF); nr. top Bordeaux Mt., 27 Feb 1984, ground litter, W. Muchmore (1-WIBF).

**Comments.** The two or three large distinct granules on declivital interstriae 3 of the female and its large size easily distinguishes this species.

Specimens have been taken in Florida from *Carya*, *Terminalia*, *Pleiogynum* and “Palm” (Bright 1968). Wolcott (1948) records this species, as *lecontei*, from Puerto Rico from El Verde Camp, Río Grande, in dying terminals of “cedro” (*Cedrela mexicana*) and in dead twigs of “aceitillo” (*Zanthoxylum flavum*) at Maricao. Vázquez et al. (2003) list *Coffea* as a host plant for this species in Cuba.

The treatment above is based on a large number of specimens from the West Indies, on the type of *A. lecontei* and on specimens compared to the type of *A. guatemalensis*, a synonym of *X. hagedorni*. In addition, numerous specimens from Florida, identified as *A. lecontei* by various authors, were examined. No distinct difference could be seen.

***Ambrosiodmus infidelis* Bright, sp. nov.**

Figure 186.

**Type Material.** **HOLOTYPE** (female) labeled: “DOMINICAN REPUBLIC, La Vega, Estacion Cabanito, 20 July 1996, R. Turnbow” / “Reserva Cietifica Ebano Verde” / “HOLOTYPE *Ambrosiodmus infidelis* D. E. Bright 2016” (RHTC [FSCA]). **PARATYPE** (1) labeled: “DOM. REP.: Pervia, 14 km. E. San Jose de Ocoa, August 8, 1978, C. W. O'Brien” (CNCI).

**Description (Female).** Length 2.7 mm, 2.1 times longer than wide; black. Frons convex, weakly, transversely impressed above epistoma; surface moderately shining, with a weakly elevated, longitudinal, flattened, median elevation and with irregular, scattered, low elevations. Antennal club 1.2 times longer than wide, shorter than scape. Pronotum 1.1 times wider than long, widest at base; sides evenly, broadly arcuate; anterior margin broadly rounded, unarmed; anterior slope steeply declivous, with numerous, close, moderately small asperities; summit well behind middle, not elevated; posterior third with numerous, small, shining rugosities, surface between asperities minutely reticulate, dull. Elytra 1.5 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae moderately impressed, with large, distinct punctures, these separated in a row by a distance less than their diameters; discal interstriae slightly convex, shining, as wide or slightly wider than striae, with a row of small punctures and long setae longer than interstitial width. Declivity evenly convex; striae slightly impressed; interstriae with a median row of small, equal-sized granules and long setae; interstriae 9 with an acute, unarmed, elevated ridge extending from declivital base to apex.

**Male.** Unknown.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** From *infidelis*, Latin for unbeliever or uncertain.

**Comments.** Females of this species may be distinguished by the completely black color, by the presence of a weakly impressed, transverse space just above the epistomal margin and by the larger size.



Figures 185–187. Declivities of *Ambrosiodmus* spp. 185) *A. devexus*. 186) *A. infidelis*. 187) *A. obliquus*.

### *Ambrosiodmus nuperus* (Bright), New Combination

*Xyleborus nuperus* Bright 1972: 76; Wood and Bright 1992: 755.

**Description (Female).** Length 2.4 mm. 2.4 times longer than wide; light reddish-brown except elytra much darker. Frons evenly convex, faintly impressed above epistoma; surface dull, minutely reticulate, punctures large, shallow; vestiture consisting of scattered, moderately long, hairlike setae. Antennal club 1.2 times longer than wide. Pronotum 1.1 times wider than long; sides slightly arcuate, anterior margin broadly rounded, unarmed; anterior slope bearing numerous, large, acute, erect asperities, these nearly reaching anterior margin, surface between asperities minutely reticulate; posterior area finely asperate, asperities low, blunt. Elytra 1.6 times longer than wide; sides parallel on basal three-fourths, broadly rounded behind; striae feebly impressed, punctures large, deeply impressed; interstriae slightly wider than striae, shining, punctures half the size of striae punctures, not as deeply impressed, becoming granulate toward declivity. Declivity convex; striae more deeply impressed than on disc; striae and interstitial punctures closer and somewhat deeper; all interstriae (except 1) with a median row of small granules, five granules in each interstriae; ridge of interstriae 7 acute, forming an elevated, ventral margin of declivity.

**Male.** Unknown.

**Distribution.** This species is known from Jamaica.

**Specimens examined. JAMAICA:** Saint Andrew Parish, Hardwar Gap, 4000', 1 July 1966, Howden and Becker (1–CNCI).

**Comments.** Females of this species closely resemble those of *A. tachygraphus* Zimmerman and *A. hagedorni*. Females of *A. nuperus* may be easily distinguished from the females of these species by their smaller size and by the much smaller and more numerous declivital granules.

### *Ambrosiodmus obliquus* (LeConte)

Figure 187.

*Pityophthorus obliquus* LeConte 1878: 432.

*Xyleborus obliquus*: Bright 1981a: 157.

*Ambrosiodmus obliquus*: Wood and Bright 1992: 677; Bright and Skidmore 2002: 105; Bright 2014: 157.

*Xyleborus pseudobrasiliensis* Eggers 1941: 101 (Guadeloupe).

*Ambrosiodmus klapperichi* Bright 1985: 178 (Dominican Republic). **New Synonymy.**

**Description (Female).** Length 1.9–2.3 mm, 2.4 times longer than wide. Frons convex, weakly, transversely impressed above epistoma, with a very weak, median elevation at level of upper margin of eye;

surface shining, finely, minutely reticulate, with scattered, shallow punctures, each of which bears a long, fine, erect seta. Antennal club large, as long as wide, basal segment occupies one-third of total club length; sutures weakly arcuate, bordered by a row of short setae; posterior face with two, weak, arcuate sutures. Pronotum very slightly longer than wide, widest at middle; sides arcuate from base to broadly rounded anterior margin; anterior slope with numerous, erect, acute asperities, these becoming progressively smaller over posterior portion to base; surface between asperities on posterior portion smooth, shining, with minute, impressed points. Elytra 1.4 times longer than wide; sides parallel for almost entire length, apex very broadly rounded; striae punctured in regular rows, punctures large, close, deeply impressed, each bearing a very short seta; interstriae slightly wider than striae, weakly convex, with a median row of punctures, these slightly smaller, slightly less deeply impressed than those in striae, each puncture bearing a long, erect seta. Declivity convex, very steep; interstriae 1 weakly elevated, with a median row of small granules; interstriae 2 weakly impressed, usually devoid of granules or sometimes with several granules equal in size to those in interstriae 1 and 3; interstriae 3 slightly elevated, as high as 1 and with a median row of very small granules; interstriae 7 acutely elevated to elytral apex, ridge smooth.

**Male.** Unknown.

**Distribution.** This species is known from the eastern United States, Mexico, Colombia and Brazil. It is generally distributed throughout the West Indies.

**Specimens examined. DOMINICA:** Clarke Hall, XII.1–6.1964: J. Spangler (1–USNM); Portsmouth, Cabrits National Park, 30 m, 2–13.VI.2004, tropical deciduous forest (1–CNCI); ca. 1500', 2 km NW Pt. Casse, 14 Aug. 1986, C. W. and L. B. O'Brien (1–CNCI); ca 1900', Pt. Casse, 18 Aug. 1986, C. W. and L. B. O'Brien (1–CNCI). **DOMINICAN REPUBLIC:** Colonia, 1000 m, J. and S. Klapperich (3–NHMB, CNCI); Cazabita, 1250 m, 23.12, J. and S. Klapperich (1–NHMB); La Vega, vic. La Cienaga, 18 July 1996, R. Turnbow (1–RHTC); Barahona, 7 km NW Paraiso, 200 m, rainforest remnant, 27.XI.1991, sweeping, Masner and Peck (1–CNCI); same locality, 27.XI.1991, intercept trap, Masner and Peck (1–CNCI); La Vega, 19 km E El Rio, cloud forest, Aug.3, 1979, C. W. O'Brien (1–CNCI); Pedernales Province, Km. 1 Trail Fondo Paradí, 3 km S Olliedo, 17°49.085'W, 71°26.336W, 120 m, 27/VIII/2011, D. Perez, S. Medrano, A. Hilario (3–USNM); Province Barahona, nr. Filipinas, Larimer Mine, 20–26.VI.1992, R. E. Woodruff and P. E. Skelley, at night (2–RHTC). **GRENADA:** Grand Etang National Park, Mt. Qua Qua Trail, IX.9.1991, C. W. and L. B. O'Brien (1–CNCI). **GUADELOUPE:** Basse-Terre: Pigeon, Trace Poirier, N16°08.83, W61°45.22 / humid forest flight intercept trap, 350 m, 14–31.V.2012, S. Peck (1–SBPC); Basse-Terre: Grand Anse, Dashales, 25 Dec 2002, J. Touroult (1–WIBF); Basse-Terre: Gourbeyre, Palmiste, 05–20 Jan 2003, J. Touroult (1–WIBF); Basse-Terre: Gourbeyre, Moscau, 31 Dec 2002, J. Touroult (1–WIBF); Basse-Terre: Petit Binro, 02 Jan 2003, J. Touroult (2–CNCI). **MARTINIQUE:** Morne Jacob, 450 m, 8.III.2011 / J. Touroult (1–CNCI); Macouba Maison du Moine, uv 180 W, 17.VII.2001, Poguet, Cauvin, M. Marquet (1–CNCI); 4 km SW Le Marin, Morne Aca, 260 m, N14°27.8, W60°53.9 / humid forest hilltop clearing flight intercept trap, 13–28.VI.2012, S. Peck (1–SBPC). **MONTSERRAT:** Gun Hill, 16°45.45N, 62°12.70W, 887 ft., 19 June–07 July 2002, K. A. Marske (2–WIBF). **PUERTO RICO:** 5 miles NE Jayuya, July 22, 1969, H. and A. Howden (1–CNCI); Adjuntas, dead wood / R. G. Oakley, Feb. 15, 1934, San Juan No. 5498 (1–USNM); Guaynabo, 15.XII.1995 (1–CNCI); 5 mi NE Jayuya, VII.22.1968, H. and A. Howden (1–CNCI); Island record only, EDRR Site 9, 9/17/[20]14 (1–MSUC). **SAINT LUCIA:** Barre de L'Isle Trail, 13°93'N, 60°96'W, 5.VII.2009 / in small dead branch, D. E. Bright (3–CNCI). **VIRGIN ISLANDS (U. S.): Saint Croix,** Estate North Star, 15 Nov–18 Dec 1992, 60 m, flight intercept trap, J. Keularts, (2–WIBF); EState Fountain, 350 ft., 19 May–18 Jun 1993, J. Keularts, flight intercept trap (1–WIBF).

**Record from literature. PUERTO RICO:** Rio Grande, Vega Alta (Wood 1982).

**Comments.** Females of *A. obliquus* may be distinguished from those of other species of *Ambrosiodmus* by having interstriae 1 and 3 on the declivity with small to minute granules, by the weakly sulcate interstriae 2 usually without, but often with, a few granules as large as those on interstriae 1 and by the discal interstriae which are 3.0–4.0 times wider than striae.

*Ambrosiodmus klapperichi* was described from series of specimens from the Dominican Republic which displayed a different set of declivital characters when compared to specimens of *A. obliquus*. When more specimens became available from different West Indies islands and South America, the differences became less distinct. The West Indies specimens (including the type of *A. klapperichi*) were compared to a homotype of *A. obliquus* and I decided that they were within the limits of variation for *A. obliquus*. I therefore have placed *A. klapperichi* in synonymy under *A. obliquus*.

***Ambrosiodmus opimus* (Wood)**

*Xyleborus opimus* Wood 1974: 37.

*Ambrosiodmus opimus*: Wood and Bright 1992: 678; Bright and Skidmore 2002: 105; Bright and Skidmore 2002: 105; Bright 2014: 157.

This species has not been collected or recorded from the West Indies but is included here because it may eventually be found in the region. The holotype is from Sebring, Florida and Wood (2007) records three specimens from Brazil. Wood (2007) notes that the “type was boring in a liana 3 cm in diameter”; however, the holotype bears a label “at light” in addition to the locality label. The Brazil specimens were collected in an ethanol trap in a *Eucalyptus grandis* stand. Wood (2007) states that this species is presumed to be an endemic species.

The female of this species may be recognized by the size, 2.5–2.9 mm, by the presence of two small, acute tubercles in declivital interstriae 2 and with two or three minute tubercles sometimes present and by the several minute tubercles in interstriae 3 on the declivity.

The holotype in the USNM was examined. This species is not included in Appendix 2 nor is it included in the number of species occurring in the West Indies.

**Genus *Cnestus* Sampson**

*Cnestus* Sampson 1911: 383; Wood and Bright 1992: 801; Bright and Skidmore 2002: 315 (checklist); Bright 2014: 163.

Members of this genus closely resemble those in *Xylosandrus* and most species have been described in either *Xyleborus* or *Xylosandrus*. Recent morphological and molecular studies by Hulcr et al. (2007) and Dole and Cognato (2010) have established the monophyletic condition of *Cnestus* and clarified its relationships.

Members of *Cnestus* and *Xylosandrus* may be distinguished from those in *Xyleborus* by the separated fore coxae and by the antennal characters. Those in *Cnestus* differ from those in *Xylosandrus* by the narrowly separated fore coxae and by the pronotal characters noted in the above key to genera.

Bright and Skidmore (2002) list 21 species in this genus, almost all from the Old World tropics; five species occur in the New World (Dole and Cognato 2010) one of which occurs in the West Indies.

***Cnestus lepidus* (Bright), New Combination**

*Xyleborus lepidus* Bright 1972: 74; Wood and Bright 1992: 748.

**Description (Female).** Length 2.9 mm, 2.1 times longer than wide; very dark reddish-brown, almost black. Frons evenly convex, faintly impressed above epistoma on each side of a faintly elevated, longitudinal, median line; surface shining, minutely reticulated, punctures shallow, fairly large and widely scattered, somewhat closer just above epistoma; vestiture consisting of a few, scattered, hairlike setae, more prominent just above epistoma and along epistomal margin. Antennal club circular, slightly longer than wide. Pronotum circular in outline, 1.1 times wider than long; sides strongly arcuate, anterior margin slightly produced over head in median area, bearing fine asperities; anterior slope with numerous, scattered asperities, surface between asperities dull, minutely reticulate; posterior area smooth, dull, with very faint, widely scattered punctures. Anterior coxae narrowly separated by a complete intercoxal piece, separation equal to much less than half coxal diameter. Elytra 1.1 times longer than wide; sides parallel on basal two-thirds, broadly rounded behind; striae not impressed, punctures very fine, shallow; interstriae much wider than striae, smooth, dull, impunctate. Declivity beginning mid-point of elytra, abrupt, steep; interstriae as on elytra except for a few small granules at upper level; striae punctures somewhat larger than on disc; striae 2 diverging toward, then away from suture at mid-point of declivity causing interstriae 3 to be wider at this point.

**Male.** Unknown.

**Distribution.** This species is known from Jamaica.

**Specimen examined. JAMAICA:** Saint Andrew Parish, Irish Town, 25 August 1966, Howden and Becker (1–CNCI).

**Comments.** This species was described in *Xyleborus* and is only known from the holotype. Based on the presence of subcontiguous procoxae and the slightly prolonged, slightly descending and weakly serrate anterior margin of the pronotum, this species is here transferred to *Cnestus*.

### Genus *Coptoborus* Hopkins

*Coptoborus* Hopkins 1915a: 53; Wood and Bright 1992: 662; Bright and Skidmore 2002: 321 (checklist); Bright 2014: 165.

This genus is difficult to adequately characterize. Numerous species, currently placed in this genus, probably do not belong there, thereby increasing the difficulties in defining the genus. The type species of the genus is *Coptoborus emarginatus* Hopkins [preoccupied by *Xyleborus emarginatus* Eichhoff while in *Xyleborus*] (= *Xyleborus vespatorius* Schedl), the female of which has the posterior third of the elytra deeply excavated, with acutely elevated lateral margins and a deeply emarginate or notched apex. Most of the species listed in *Coptoborus* in Wood and Bright (1992) and those treated in Wood (2007) do not share these characters and almost certainly are not congeneric. Two species, *C. pseudotenuis* Schedl and *C. bellus* Bright and Torres, are herein removed from the genus and placed either in *Xyleborus* or *Theoborus* respectively. In addition, *C. exilis* Schedl, previously listed in *Coptoborus* is moved to *Xyleborus*. The only West Indian species now included in *Coptoborus* is *C. vespatorius*.

### *Coptoborus vespatorius* (Schedl)

Figures 188, 465, 534.

*Coptoborus emarginatus* Hopkins 1915a: 53 (preoccupied).

*Xyleborus vespatorius* Schedl 1931: 342; Wood and Bright 1992: 665; Bright 2014: 166.

**Description (Female).** Length 2.3–2.5 mm, 3.4 times longer than wide; yellowish-brown. Frons evenly convex, with a faint median elevation just below upper eye level, surface dull, densely, minutely reticulate, with scattered, moderately large punctures and a few, scattered, long setae, these more abundant along epistomal margin. Antennal club as long as wide; basal segment corneous, glabrous, occupying basal one-quarter of club; remainder of club pubescent with two indistinct, transverse sutures marked by rows of short setae; posterior face with one arcuate suture at apex. Pronotum 1.3 times longer than wide, widest on anterior third; sides parallel on posterior two-thirds; anterior margin narrowly rounded, with a row of very small serrations on margin; anterior slope steeply declivous with numerous, small, low, shining asperities, space between asperities minutely reticulate, shining; summit not, located well in front of middle; posterior two-thirds shining, smooth, with widely scattered, minute points. Elytra (measured along suture) 2.0 times longer than wide; sides subparallel on basal two-thirds; apex with a distinct sutural notch, each elytron separately, broadly rounded, each apex acutely margined; discal striae not impressed, punctured in regular rows, punctures small; discal interstriae flat, 4.0–5.0 times wider than striae, surface smooth, brightly shining, with a median row of very fine points and a few small, erect setae. Declivity broadly sloping, deeply sulcate, lateral margins elevated, bearing two moderately large granules and several much smaller granules; striae 1 and 2 distinctly punctured in even rows.

**Male.** Unknown.

**Distribution.** This species is known from southern Mexico and Trinidad to Argentina and in the Lesser Antilles.

**Specimens examined. GRENADA:** Saint John Parish, Concord Falls, 20.II.1990, R. E. Woodruff, light trap (1–SBPC). **SAINT LUCIA:** Barre de L'Isle, 13.93682°N, 60.95936°W, 340 m, 29 June–03 July 2009, uv light trap, C. A. Maier and M. L. Gimmel (1–WIBF); Mon Repos, 6.5 km W Fox Grove Inn, 10–28.VI.2007, submontane forest

flight intercept trap, 300 m, S. and J. Peck (1–SBPC); Millet Forest Trail, 10.VII.2009, boring in dead fallen tree, D. E. Bright (2–CNCI).

**Comments.** Females of this species may be easily recognized by their narrow, elongate body, by the deeply sulcate elytral declivity with the lateral margins elevated and bearing two or three large, acutely pointed spines or granules and by the separately rounded elytral apices.

### Genus *Dryocoetoides* Hopkins

*Dryocoetoides* Hopkins 1915a: 52; Wood and Bright 1992: 656; Bright and Skidmore 2002: 347 (check-list); Bright 2014: 175.

Members of this genus may be distinguished from those in the other genera of the Xyleborini by the inflated anterior tibiae which bear numerous granules on the posterior surface. In addition, the posterior face of the antennal club is marked by two arcuate sutures.

All species (25) of this genus occur in the New World tropics (Wood and Bright 1992), except for one species introduced into Africa. Three species are herein recognized from the West Indies.

### Key to the species of *Dryocoetoides* in the West Indies

(Females only)

1. Body black to dark reddish-brown; basal portion of elytral disc with small, randomly placed dense punctures; declivital interstriae bearing closely placed, randomly distributed granules; body stout, 2.3 times longer than wide; length 2.5–2.8 mm; widely distributed ..... *D. capucinus* (Eichhoff) (p. 259)
- Body reddish to reddish-brown; basal portion of elytral disc with striae punctures in even rows; granules in declivital interstriae placed in even rows; body more slender, 2.5 times longer than wide ..... **2**
- 2(1). Declivital interstriae 2 weakly impressed near middle, sulcate; declivital granules larger; length 2.7–3.2 mm; widely distributed ..... *D. cristatus* (Fabricius) (p. 260)
- Declivital interstriae 2 not distinctly impressed, as high as interstriae 1; declivital granules very small; length 2.4–2.7 mm; Dominican Republic, Guadeloupe, Saint Lucia ..... *D. pseudosolitarius* (Eggers) (p. 262)

### *Dryocoetoides capucinus* (Eichhoff)

Figures 363, 403, 464, 535.

*Xyleborus capucinus* Eichhoff 1869: 281.

*Dryocoetoides capucinus*: Wood and Bright 1992: 656; Bright and Skidmore 1997: 142; Bright 2014: 176.

*Xyleborus capucinoides* Eggers 1941: 104 (Guadeloupe).

**Description (Female).** Length 2.5–2.8 mm, 2.4 times longer than wide; black to dark reddish-brown. Frons convex; surface dull, minutely reticulate, with scattered, abundant, shining granules. Pronotum less than 1.1 times longer than wide; sides on basal half straight, parallel, converging to narrowly rounded anterior margin; anterior margin bearing four serrations, median pair larger; summit slightly behind middle; anterior slope convex, bearing numerous, small asperities, these becoming larger toward anterior margin; posterior area shining, with numerous, close, small punctures. Elytra 1.4 times longer than wide; sides parallel on basal three-fourths, converging to narrowly rounded apex; basal portion of discal surface shining, randomly punctured with no evidence of striae rows, striae marked by rows of very short setae; discal interstriae very wide, each interstriae with three or four indefinite rows of longer, erect, fine setae. Declivity occupying posterior 60% of elytral length, evenly convex; entire surface dull,

densely reticulate; striae very weakly impressed, stria punctures not evident; interstriae very weakly convex, with dense, scattered, small, shining granules and long, fine setae.

**Male.** Unknown.

**Distribution.** This species occurs from central Mexico to northern South America and in the West Indies from the Dominican Republic to Saint Vincent.

**Specimens examined. DOMINICA:** Colonia, 1000 m, June 21, 1972, J. and S. Klapperich (1–NHMB); Pont Casse, 1900', 6–19–2004, C. W. and L. B. O'Brien (1–CNCI); Springfield Estate, 330–360 m, 30.V-16.VI.2004, S. and J. Peck, mature second forest flight intercept trap (7–SBPC). **DOMINICAN REPUBLIC:** Province Barahona, nr. Filipinas Larimar Mine, 26.Vi-7.VII.1992, R. Woodruff and P. Skelley, at light (2–RHTC). **GADELOUPE:** Basse-Terre: Pigeon, Trace Poirier, N16°08.83, W61°45.22 / humid forest flight intercept trap, 350 m, 14–31.V.2012, S. Peck (1–SBPC); Basse-Terre: Gourbeyre, Foret de Moscou, 20–26 Feb 2003, J. Touroult (27–WIBF, CNCI). **MARTINIQUE:** 4 mi SW Le Marin, Morne Aca, 260 m, N14°27.8, W60°53.19 / humid forest hilltop clearing flight intercept trap, 13–28.VI.2012, S. Peck (2–SBPC); Macouba Sentiér pedestre, 19.VII.2001, N 22, Roguet, Cauvin, M./Marquet, J. (1–CNCI). **NETHERLANDS ANTILLES:** Saba, Sandy Cruz Trailhead nr. Hell's Gate, 30.IV.2013 / ex. dead branch, D. E. Bright and B. A. Barr (6–CNCI). **PUERTO RICO:** Mayagüez, XII.30.1913 / borer in *Inga vera* (2–AMNH); Rd.155 Bo, Perchas, Morovis, multi-funnel Ips trap (1–PRDA). **SAINT LUCIA:** Barre de L'Isle, 13.9326°N, 60.9582°W, 285 m, 19–25 June 2009, canopy Malaise, E. A. Ivie and C. A. Maier (2–WIBF); same locality, 10–19 June 2009, canopy Malaise, C. A. Maier and E. A. Ivie (1–WIBF), same locality, 22 May 2009, A. R. Cline, S. D. Gaimari and R. Winton, canopy Malasia (1–WIBF); Grande Anse trap site, 38 m, 14.0052°N, 60.8973°W, various dates in May or June 2009, R. C. Winton and E. A. Ivie or C. A. Maier (5–WIBF); Mon Repos, 6.5 km W Fox Grove Inn, 10–28.VI.2007, submontane forest flight intercept trap, 300 m, S. and J. Peck (10–SBPC); Piton Flores, 532 m, 13°96'N, 60°94'W, 6.VII.2009 / in broken branch, D. E. Bright (1–CNCI); La Porte Forest Trail, 13°84'N, 60°97'W, 4.VII.2009 / in dead fallen tree, D. E. Bright (1–CNCI). **SAINT VINCENT AND THE GRENADINES:** Saint Vincent, Hermitage Forest, E of Spring Village, 15–27.VIII.2006, forest edge flight intercept trap and Malaise trap, 348 m, S. and J. Peck (2–SBPC); Saint Vincent, Vermont Nature Trail, 7 km E Buccament, 11–20.VI.2007 / rainforest uv trap, S. and J. Peck (2–SBPC).

**Record from literature. JAMAICA,** island record only (Wood and Bright 1992).

**Comments.** Females of this species may be recognized by the dark reddish to black color, by the randomly placed stria and interstria punctures on the basal portion of the elytra and by the convex elytral declivity on which the interstriae are not impressed and each bears numerous, small, randomly placed granules and by the very weakly impressed declivital striae.

The holotype of *Xyleborus capucinoides* Eggers was examined.

### ***Dryocoetoides cristatus* (Fabricius)**

Figure 189.

*Bostrichus cristatus* Fabricius 1801: 389.

*Dryocoetoides cristatus*: Wood and Bright 1992: 657; Bright and Skidmore 2002: 102; Bright 2014: 176.

**Description (Female).** Length 2.7–3.2 mm, 2.7 times longer than wide; light to dark reddish-brown, apical half of elytra darker. Frons evenly convex; surface dull, minutely reticulate, with scattered, abundant, shining granules. Pronotum less than 1.1 times longer than wide; sides on basal half straight, parallel, converging to narrowly rounded anterior margin; anterior margin usually bearing six serrations, median pair larger; summit at middle; anterior slope convex, bearing numerous, small asperities, these becoming larger toward anterior margin; posterior area shining, with numerous, close, small punctures. Elytra 1.4 times longer than wide; sides parallel on basal three-fourths, converging to narrowly rounded apex; basal portion of discal surface shining, with stria rows distinctly evident, stria punctures large, shallowly impressed, each often with a minute seta; discal interstriae very wide, each interstriae with 2 or 3 randomly placed rows of longer, erect, fine setae. Declivity occupying posterior 50% of elytral length, evenly convex; entire surface dull, densely reticulate; interstriae 1 shallowly impressed at middle with a median row of closely placed, shining, small granules near suture; interstriae 2 weakly impressed at middle, with a median row of small, shining granules lateral to impression; remaining interstriae each with a similar row of small shining granules and with fine setae.

**Male.** Unknown.



**Figures 188–195.** Declivities of various Xyleborini. **188)** *Coptoborus vespatorius*. **189)** *Dryocoetoides cristatus*. **190)** *D. pseudosolitarius*. **191)** *Theoborus atlanticus*. **192)** *T. bellus*. **193)** *T. crinitulus*. **194)** *T. puertorichensis*. **195)** *T. ricini*.

**Distribution.** This species is known from northern South America and in the West Indies, introduced into tropical Africa. It probably occurs in southern Florida.

**Specimens examined.** **DOMINICAN REPUBLIC:** La Vega Province, Jarabacoa, 440 m, 24.VII-4.VIII.95, riverside uv light, S. and J. Peck (1–SBPC); La Vega, 1 km W Manabao, 6 June 1994, R. Turnbow (1–RHTC); Province Monsenor Nouel Bonao, Hotel Jacaranda, 27–28.VI.1998, R. Woodruff, R. Baranowski, blacklight trap (1–REWC). **GRENADA:** Saint Andrew, Mirabeau Agricultural Laboratory, 2.IV.1990, A. Thomas, light trap (1–SBPC). **JAMAICA:** Santa Cruz, Feb. 24, 1937 / Sta 421, Chapin and Blackwelder (1–CNCI). **MARTINIQUE:** Brevette, 23.VI.1997, D. Roguet (1–CNCI). **MONTSERRAT:** Dyers, 17.IV.1993 (2) and 16.IV.1993 (1); Jeffers, blacklight trap (3–FSCA). **PUERTO RICO:** Carite Forest, at uv light, VII.28.1999, C. W. O'Brien and P. Kovarik (1–CNCI); Guaynabo, various dates 1995–1999, light trap, J. Torres (31–CNCI); Bisley, El Yunque, 10.IX.1989, light trap (1–CNCI). **SAINT LUCIA:** Chassin trap site, 94 m, 13.9965°N, 60.9195°W, 17–23 May 2009, uv light, R. C. Winton and

E. A. Ivie (1-WIBF); nr. Micoud, trail towards Fond Bay, 13°49'48"N, 60°53'42"W, 15 m, A. R. Cline and S. D. Gaimari, 16-22-May-2009, ex blacklight trap (1-WIBF); Mon Repos, Fox Grove Inn, 90 m, 8-18.VII.2007 / uv light, S. and J. Peck (3-SBPC); Piton Flores, 532 m, 13°96'N, 60°94'W, 6.VII.2009 / in broken branch, D. E. Bright (1-CNCI); La Porte Forest Trail, 13°84'N, 60°97'W, 4.VII.2009, 272 m / in dead fallen tree, D. E. Bright (3-CNCI). **VIRGIN ISLANDS (U. S.): Saint Thomas**, Est. Saint Peter, ca 1400 ft., North Star, 04 Jan-30 Jun 1993, Carol Mayes, uv light (2-WIBF).

**Comments.** Females of this species may be recognized by the reticulate and dull elytral declivity with a median row of distinct granules in each interstriae, by the basal portion of elytral disc with obscure striae punctures in even rows and by declivital interstriae 2 which is weakly impressed near the middle.

*Dryocoetoides reticulatus* Atkinson (2009), from the Florida Keys, is probably this species.

### *Dryocoetoides pseudosolitarius* (Eggers)

Figure 190.

*Xyleborus pseudosolitarius* Eggers 1933: 28.

*Dryocoetoides pseudosolitarius*: Wood and Bright 1992: 658; Bright 2014: 177.

**Description (Female).** Length 2.4–2.7 mm, 2.7 times longer than wide; dark reddish-brown, apical half of elytra occasionally darker. Frons as in *D. cristatus*. Pronotum as in *D. cristatus* except anterior margin usually bearing four serrations, the median pair slightly larger. Elytra as in *D. cristatus* except discal striae less evident with smaller punctures and interstitial setae slightly shorter. Declivity basically as in *D. cristatus*, except declivital interstriae 2 is weakly impressed or not impressed, striae very weakly impressed with obscure shining punctures, interstriae very weakly convex, with smaller, shining granules and shorter setae.

**Male.** Unknown.

**Distribution.** This species is known from northern South America and the West Indies.

**Specimens examined. DOMINICAN REPUBLIC:** Barahona, Barahona, uv trap, 8–29–30.1997, R. Baranowski and C. W. O'Brien (1-CNCI); Colonia, 1000 m, June 21, 1972, J. and S. Klapperich (1-NHMB); La Vega Province, Jarabacoa, 440 m, 24.VII-4.VIII.1995, riverside uv light, S. and J. Peck (3-SBPC); Province Monsenor Nouel Bonao, Hotel Jacaranda, 27–28.VI.98, R. Woodruff, R. Baranowski, blacklight trap (1-REWC). **GADELOUPE:** Basse T., Petit Binro, 02 Jan 2003, J. Tourout (2-WIBF); Basse T., Gourbeyre, Palmiste, 05–20 Jan 2003, J. Tourout (4-WIBF); Basse T., Grand Anse, Deshaies, 25 Dec 2003, J. Tourout (1-WIBF). **SAINT LUCIA:** La Porte Forest Trail, 13°85'N, 60°97'W, 4.VII.2009, 172 m / in dead fallen tree, D. E. Bright (2-CNCI).

**Records from literature. DOMINICA:** Samana Province (Wood 2007). **PUERTO RICO:** Mayagoza (Wood 2007).

**Comments.** Females of this species are similar to those of *D. cristatus* but differ by the smaller average size and by declivital interstriae 2 not distinctly impressed, as high as interstriae 1 and bearing small granules.

### Genus *Euwallacea* Hopkins

*Euwallacea* Hopkins 1915a: 54; Wood and Bright 1992: 685; Bright and Skidmore 1997: 149; Bright and Skidmore 2002: 349 (checklist); Hulcr and Cognato 2013: 88; Bright 2014: 178.

The status of this genus has been uncertain since its establishment by Hopkins in 1915. Various authors have treated this taxon in a variety of combinations, often as a synonym of *Xyleborus* (Wood 1982), but as a separate genus very similar to *Xyleborus* (Wood and Bright 1992; Hulcr and Cognato 2013). Of the 53 species listed in the Wood and Bright 1992 catalog, all but three were originally described in *Xyleborus*. Because of recent introductions of several injurious species, the genus has received additional attention (Storer, Breinholt and Hulcr 2015). Several species were transferred into the genus, its

relationships to other genera in the Xyleborini have been examined and the morphological characters that define the genus were clarified and updated.

Because of these studies, a reorganization of the treatment of the West Indian species of *Xyleborus* and *Euwallacea* was required. A very cursory examination of related South American species was performed. As a result, the following West Indian species are herein transferred into *Euwallacea*: *X. beckeri* Bright, *X. caribicus* Eggers, *X. elevatus* Eggers, *X. jamaicensis* Bright and *X. simulatus* Bright. *Xyleborus posticus* Eichhoff was transferred into *Euwallacea* by Storer, Breinholt and Hulcr (2015). *Xyleborus novagranadensis* Eggers is here placed in synonymy under *X. caribicus* Eggers.

About 56 species, most in the Old World tropics, are assigned to this genus in Bright and Skidmore (2002) but the actual number will be much greater when all species currently placed in *Xyleborus* have been examined. Wood (2007) records two species in this genus introduced into South America; one of these, *E. validus* (Eichhoff), is mentioned from Jamaica in the key to species but Wood adds the contradictory statement in the discussion “Not yet reported from South America, but should arrive soon ...” with no comment on the Jamaican occurrence. No specimens of this species have been seen from Jamaica, or from any other West Indian island, and the species is omitted in this treatment.

Members of *Euwallacea* closely resemble those in *Xyleborus* but differ by having the postero-lateral margin of the declivity subacutely elevated from the sutural apex to interstriae 7 and usually crenulate and bearing a few small granules or tubercles (Fig. 201) and by the quadrate to sub-rectangular pronotum with a very broadly rounded to truncate anterior margin (Fig. 202). Additional morphological and genetic characters are discussed by Storer, Breinholt and Hulcr (2015). Eight West Indian species are included in this genus.

#### Key to the species of *Euwallacea* in the West Indies

(Females only)

1. Declivital interstriae 1, 2 and 3 bearing a median row of small granules and a row of short to long, erect setae ..... **2**
- Declivital interstriae 1 and 3 variously armed, 2 unarmed and glabrous ..... **6**
- 2(1). Elytral declivity slightly, transversely impressed above apex, impression extending from interstriae 2 to lateral margin; length 2.7 mm; Jamaica, at high elevations ..... ***E. jamaicensis* (Bright)** (p. 267)
- Elytral declivity evenly convex, not transversely impressed above apex ..... **3**
- 3(2). Length 3.3–3.8 mm; anterior margin of pronotum truncate; discal striae shallowly impressed; Dominica, Guadeloupe, Saint Lucia ..... ***E. caribicus* (Eggers)** (p. 264)
- Length less than 3.0 mm; anterior margin of pronotum very broadly rounded to nearly truncate; discal striae not impressed ..... **4**
- 4(3). Elytral declivity dull, minutely reticulate, granules in declivital interstriae very small; length 2.4–2.7 mm; Cuba, Puerto Rico ..... ***E. posticus* (Eichhoff)** (p. 268)
- Elytral declivity smooth, shining, declivital granules variable; declivital striae weakly but distinctly impressed ..... **5**
- 5(4). Body slightly larger and stouter, length 2.2–2.5 mm, 2.8 times longer than wide; granules in declivital interstriae slightly larger; Dominica ..... ***E. fulgidus* Bright, sp. nov.** (p. 266)
- Body smaller and more slender, length 2.3 mm, 2.7 times longer than wide; declivital granules minute; Saint Lucia ..... ***E. innovatus* Bright sp. nov.** (p. 267)
- 6(1). Length less than 3.5 mm ..... **7**
- Length 4.4–4.7 mm; declivital interstriae 2 slightly impressed, unarmed, 1 and 3 slightly elevated, each bearing two or three distinct tubercles; declivital interstriae weakly to not widened at apex; Dominican Republic, Puerto Rico ..... ***E. elevatus* (Eggers)** (p. 265)

- 7(6) Declivital interstriae 1 distinctly widened at lower portion, each bearing a large tubercle; striae 1 curving laterad around this large tubercle; interstriae 3 bearing one smaller tubercle; length 2.9 mm; Dominican Republic, Jamaica, Puerto Rico ..... *E. simulatus* (Bright) (p. 270)
- Declivital interstriae 2 not widened, equal in width to interstriae 1 and 3, bearing one or two small tubercles; length 2.7–3.2 mm; Jamaica ..... *E. beckeri* (Bright) (p. 264)

***Euwallacea beckeri* (Bright), New Combination**

Figure 213 (as *Xyleborus*).

*Xyleborus beckeri* Bright 1972: 84; Wood and Bright 1992: 714.

**Description (Female).** Length 2.7–3.2 mm, 2.8 times longer than wide; very dark reddish-brown to almost black. Frons convex, faintly impressed above epistomal margin, faintly elevated between eyes; surface minutely reticulate, shining, punctures moderate in size, deeply impressed; vestiture consisting of sparse, long, hairlike setae arising from each puncture, these more conspicuous along epistomal margin. Antennal club 1.2 times longer than wide. Pronotum 1.1 times longer than wide; sides slightly arcuate, anterior margin broadly rounded, unarmed; anterior slope with numerous, small asperities, surface between asperities dull, opaque; posterior and lateral portions smooth, moderately shining, punctures fine, widely separated. Elytra 1.8 times longer than wide; sides parallel on basal three-fourths, narrowly rounded behind; striae weakly but distinctly impressed, punctures large, close, moderately impressed; interstriae convex, twice as wide as striae, punctures smaller, more shallowly impressed and less numerous than striae punctures; vestiture consisting of long, stout, interstitial setae and very fine, short, striae setae. Declivity convex, steep, appearing faintly concave in central and lateral portions; surface shining; interstriae 1 and 3 each with two to four acute tubercles, these as long as a distance equal to width of interstriae; interstriae 4, 5 and 6 each with several smaller granules; striae punctures somewhat larger than on disc.

**Male.** Unknown.

**Distribution.** This species is known from Jamaica.

**Specimens examined. JAMAICA:** Saint Andrew Parish, Hardwar Gap, 4000', 6 July 1966, Howden and Becker (36–CNCI); Saint Andrew Parish, Hardwar Gap, 4–4500 ft., 6–7.I.73, S. and J. Peck (1–SPBC); Saint Ann Parish, Mt. Diablo, 13.III.1966, S. S. and W. D. Duckworth (5–USNM, 1–CNCI); Silver Hill, C-12, 14.V.1981, sticky board (10–SLWC); Saint Thomas Parish, Portland Gap, 1550 m, 25.VIII.1980, A. Norrbom (1–CNCI); 6 mi. N Mavis Bank, June 1, 1966 / B. K. Dozier, (1–CNCI).

**Comments.** Adults of this species may be recognized by the size as given above and by declivital interstriae 2 is equal in width to interstriae 1 and 3 and bears one or two small tubercles.

This species may be endemic to Jamaica since no specimens have been seen from other islands.

After the photographs were taken and the plates assembled, it was recognized that this species should be placed in *Euwallacea*. To move the photo to its proper place in the *Euwallacea* plate would have required extensive changes in the manuscript, therefore the photo was left as originally intended.

***Euwallacea caraibicus* (Eggers), New Combination**

Figures 404, 468, 536.

*Xyleborus caraibicus* Eggers 1941: 103; Wood and Bright 1992: 717; Bright and Skidmore 1997: 154; Bright 2014: 195.

*Xyleborus novagrenadensis* Eggers 1941: 103 (Venezuela). **New Synonymy**

*Xyleborus trinidadensis* Schedl 1961b: 530 (Trinidad).

**Description (Female).** Length 3.3–3.8 mm, 2.8 times longer than wide; very dark reddish-brown to almost black. Frons convex, with a distinct carina extending from epistoma margin to above upper eye level; surface dull, minutely reticulate, punctures moderate in size, deeply impressed, close. Antennal club 1.1 times longer than wide. Pronotum 1.1 times longer than wide; sides slightly arcuate, anterior

margin very slightly rounded, almost truncate, unarmed; anterior slope with numerous, small asperities, surface between asperities shining; posterior and lateral portions smooth, moderately shining, punctures fine, widely separated; summit at middle. Elytra 1.6–1.7 times longer than wide; sides parallel on basal three-fourths, narrowly rounded at apex; discal striae weakly impressed, punctures small, close, moderately impressed; discal interstriae weakly convex, 3.0–4.0 times wider than striae, punctures smaller, more shallowly impressed and less numerous than striae punctures; vestiture consisting of long interstitial setae, striae setae absent. Declivity convex, steep; surface shining; each interstriae with a median row of very small granules and long setae; postero-lateral margins acute, slightly elevated.

**Male.** Not present in material examined.

**Distribution.** This species is known from Costa Rica to northern South America and in the West Indies from Dominica to Saint Vincent.

**Specimens examined.** **DOMINICA:** Springfield Estate, 330–360 m, 30.V-16.VI.2004, S. and J. Peck, mature second forest flight intercept trap (7–SBPC); Trafalagar Falls, March 15, 1964, D. F. Bray, under bark of log (2–USNM); 1.5 miles N Pont Casse, 1200 ft., February 12–25, 1965, H. E. Evans (1–USNM); Fortune, July 1964, T. J. Spilman (1–USNM); 2.5 to 3.5 km W Freshwater Lake, Morne Tres Potin N. P., 6–23–2004 / C. W. and L. B. O'Brien (1–CNCI). **GUADELOUPE:** Gourbeyre (6–AMNH); Trois-Rivières (2–MNHN). **MARTINIQUE:** Ste Anne, Anse Maurier, 7.III.2011 / J. Touroult (1–CNCI); Réserve Piton Carbet, RF de Fond-Baron, various dates 2007, J. Touroult (20–CNCI). **SAINT LUCIA:** ca. 2000', Edmond Forest Res., Aug. 10, 1986, C. W. and L. B. O'Brien / under dead wood with fungus (1–CNCI); Mon Repos, 6.5 km W Fox Grove Inn, 10–28.VI.2007, submontane forest flight intercept trap, 300 m, S. and J. Peck (11–SBPC); Quilles F. R., LaPorte Trail, 13.8404°N, 60.9740°W, 04 May 2009, I. A. Foley (5–WIBF); same locality, 272 m, 10–15 May 2009, uv light, R. C. Winton and I. A. Foley (1–WIBF). **SAINT VINCENT AND THE GRENADINES:** **Saint Vincent,** Hermitage Forest, E of Spring Valley, 348 m, 15–27.VIII.2006, forest edge flight intercept trap, S. and J. Peck (33–SBPC, CNCI); **Saint Vincent,** Vermont Nature Trail, 7 km E Buccament, 11–20.VI.2007 / rainforest uv light, S. and J. Peck (9–SBPC).

**Comments.** Females of *E. caraibicus* may be distinguished by the quadrate pronotum with an almost straight anterior margin, by the evenly sloping elytral declivity which bears, in each interstriae, a median row of very small granules and by the larger size.

This species is almost certainly a synonym of *X. adelographus* Eichhoff from Brazil. Most of the type material of *X. adelographus* was destroyed in 1944 in the destruction of the Hamburg Museum during World War II. Only one supposed syntype (labeled “type”) remains in the Chapuis collection in Brussels and it was designated a lectotype by Wood in 2007. Specimens compared to this lectotype have been compared to specimens compared to the holotype of *E. caraibicus* and no distinct differences were detected. Wood (2007) further states that specimens of *X. adelographus* are 2.8 mm in length, while specimens of *E. caraibicus* are larger, measuring 3.2–3.8 mm. Specimens of *X. adelographus* in Wood's collection (USNM) are exactly the same size as those of *E. caraibicus* in my collection (CNCI). In the absence of any distinct differences, I suggest that the two names are synonymous; however, I am retaining *X. caraibicus* as the name for the West Indian specimens until further studies can be conducted.

*Xyleborus novagrenadensis* was described by Eggers (1941) from four specimens, two of which, a male and a female, were described from Guadeloupe. The female holotype, from Venezuela, was examined. It is very similar to specimens of *X. caraibicus* and the species name is here placed in synonymy.

### ***Euwallacea elevatus* (Eggers), New Combination**

Figure 196.

*Xyleborus elevatus* Eggers 1931: 21; Wood and Bright 1992: 732; Bright 2014: 197.

**Description (Female).** Length 4.4–4.7 mm, 3.3 times longer than wide; light to dark reddish-brown to almost black. Frons convex, with a weakly elevated, broad carina or smooth space extending from epistomal margin to upper level of eyes; surface dull, minutely reticulate, punctures moderate in size, deeply impressed, close. Antennal club as long as wide. Pronotum 1.1 times longer than wide; sides slightly arcuate, anterior margin almost truncate, unarmed; anterior slope with numerous, small asperities, surface between asperities shining; posterior and lateral portions smooth, moderately shining, punctures fine, widely separated; summit at middle. Elytra 2.1 times longer than wide; sides parallel on basal three-fourths, broadly rounded at apex; discal striae (except 1) not impressed, punctures large, close, shallowly impressed; discal interstriae flat, as wide as striae, punctures much smaller, more shallowly impressed

than strial punctures; discal surface mostly glabrous with a few, scattered, long, interstitial setae. Declivity commencing on posterior third, steeply sloping; striae slightly impressed, punctures slightly larger than those on disc; interstriae 1 widened on lower half, interstriae 2 and 3 slightly curved toward apex; interstriae 1 with two distinct tubercles, one on upper level one-third of elytral length from base, another larger tubercle slightly above apex, several very small granules may occur at declivital base; interstriae 2 unarmed except for a few, very small granules; interstriae 3 similar to 1 except tubercles smaller; posterior and lateral margins acute, slightly elevated; surface glabrous except for a long seta at base of major tubercles and a few setae scattered along margin.

**Male.** Unknown.

**Distribution.** This species is known from the Dominican Republic and Puerto Rico to Venezuela.

**Specimens examined. DOMINICAN REPUBLIC:** La Vega Province, Bermudez, Cienga, 19.VII.-2.VIII.95, 1000 m, tropical evergreen forest flight intercept trap, S. Peck, 95-32 (7-SBPC); La Cienega, 1100 m, 29 July 1999, at light, M. A. Ivie and K. A. Guerro (2-WIBF); Pr. El Seibo, Loma de Chivo, 7 mi. N Pedro Sanchez, 5000 ft., 20.VI.1998, blacklight trap, R. E. Woodruff and P. H. Freytag (1-REWC); Pr. La Vega, La Cienega de Manabao, 3000 ft., blacklight trap, 20-21.VI.2000, National Park Headquarters, R. E. Woodruff, T. J. Henry (1-REWC); HDR-010 Arroyazo, Reserva Científica Ebanó Verde, La Vega Province, 1090m, 20-21.VII.2015, D. Perez, J. Sanchez Borbón, day and uv (1-USNM). **PUERTO RICO:** Bisley, El Yunque, light trap, 10.IX.1989, in *Sloanea berteriana* trunk (1-CNCI), same locality, 16.IX.1989, on *Inga* logs (2-CNCI); Caribbean National Forest, Mt. Britton trailhead, 28.V.1994, mercury vapor and blacklight trap, R. Turnbow (2-RHTC); El Yunque Stn., Luquillo Forest, 2-5.VII.1969 and VII.10-16.1969, H. and A. Howden (5-CNCI); El Yunque, 17.VI.1996, light trap; Rio Grande, 12.II.1999, in *Miconia prasina* log (1-CNCI), same locality, 17.II.1999, in *Ocotea conacea* log (1-CNCI).

**Comments.** Females of this species may be readily recognized by their elongate, narrow shape, by their large size and by the declivital characters as outlined in the description above.

Wood (2007) comments that he has seen a cotype of this species in the USNM and that the locality label on that specimen "appears to say Gotorico, Moritz". I have seen this specimen and the first locality label, mostly illegible, says "48541, then an illegible word, possibly Puertorico, K. Moritz, elevatus (followed by another illegible word)". A second label, below the one quoted above, clearly says "Puerto Rico, leg Moritz, Mus. Z. Berlin". This information is quoted by Eggers (1931) in his original description.

***Euwallacea fulgidus* Bright, sp. nov.**

Figure 197.

**Type Material. HOLOTYPE** (female) labeled: "WEST INDIES: **DOMINICA**, Springfield Estate, 330-360 m, 30.V-16.VI.2004, S. and J. Peck, N15.20.796, W61.22.142, Mature second forest FIT" / "HOLOTYPE *Euwallacea fulgidus* D. E. Bright 2016" (SBPC [CNCI]). **PARATYPES** (5): 2 labeled same as holotype (CNCI, SBPC); 1 labeled "**DOMINICA**: St. Paul, Springfield Estate, 2.6 km ENE Canefield, 15-21N, 61-22W, 480 m" / "13 June 1991, J. E. Rawlins, S. A. Thompson" / "Carnegie Museum Specimen Number CMNH-360.650" (CMNH); 1 labeled "**DOMINICA**: Trafalger Falls, ca 1200', Aug. 12. 1986, C. W. & L. B. O'Brien" (CNCI) and 1 labeled: "**DOMINICA**: Springfield Estate, 16.34634N, 61.36877W, 24-31.MAY 2011, 350 m, M. & L. Ivie & TAMU student, at lights around building" (WIBF)

**Description (Female).** Length 2.2-2.5 mm, 2.8 times longer than wide; light to dark reddish-brown. Frons and pronotum as in *E. posticus*. Elytra 1.7 times longer than wide; sides parallel on basal three-fourths, narrowly rounded at apex; discal striae weakly impressed, punctures large, close, moderately deeply impressed; discal interstriae weakly convex, 2.0 times wider than striae, each with a median row of punctures equal in size to strial punctures, more shallowly impressed and less numerous; vestiture consisting of long interstitial setae, strial setae absent. Declivity convex, steep; surface smooth, brightly shining; each interstriae with a median row of small granules and long setae; posterior and lateral margins acute, slightly elevated, weakly serrate.

**Male.** Not present in material examined. Probably very similar to *E. posticus*.

**Distribution.** This species is known from Dominica.

**Etymology.** From *fulgidus*, Latin for shining, referring to the shining declivital surface.

**Comments.** Adults of this species closely resemble those of *E. posticus* but differ by the strongly shining declivital surface.

***Euwallacea innovatus* Bright, sp. nov.**

Figure 198.

**Type Material. HOLOTYPE** (female) labeled: “**ST. LUCIA:** Barre de L’Isle, 13.9341°N, 60.9586°W, 320 m, 22 MAY 2009, in rotting log, R. C. Winton” / “**HOLOTYPE** *Euwallacea innovatus* D. E. Bright 2016” (WIBF [CNCI]). **PARATYPE** (1) labeled: “**ST. LUCIA:** Piton Troumasse, 13.8547°N, 60.0127°W, 646 m, ex. rotting log, C. A. Maier” (CNCI).

**Description (Female).** Length 2.3 mm, 2.7 times longer than wide; dark reddish-brown. Frons evenly convex; surface moderately shining, finely minutely reticulate, with widely separated, weakly impressed punctures; vestiture consisting of sparse, fine, hairlike setae arising from each puncture, these on epistomal margin longer, extending almost to tip of mandibles. Antennal club very slightly wider than long. Pronotum very slightly longer than wide; sides very weakly arcuate, sub-parallel on basal three-quarters, anterior margin very broadly rounded, unarmed; anterior slope bearing numerous, small asperities, surface between asperities finely reticulate; summit weakly elevated; posterior and lateral area reticulate, opaque, punctures very faint and hardly visible; vestiture consisting of sparse, hairlike setae scattered over surface. Elytra 1.6 times longer than wide; sides parallel on basal three-fourths, narrowly rounded behind; striae not impressed, punctures shallow, close; discal interstriae reticulate, weakly shining, weakly convex, punctures small, inconspicuous; vestiture consisting of erect, hairlike interstitial setae, these longer than interstitial width and inconspicuous striae setae. Declivity sloping, evenly convex, shining; striae weakly impressed, punctures slightly larger than those on disc; interstriae 1 and 3 very weakly elevated, each with a median row of small, acute, equal-sized granules and erect setae; interstriae 2 weakly impressed, bearing a median row of very fine granules and setae; lateral ridge of interstriae 7 acute.

**Male.** Unknown.

**Distribution.** This species is known from Saint Lucia.

**Etymology.** From *innovo*, Latin for new in an established system.

**Comments.** Females of this species resemble those of *E. posticus* and *E. fulgidus*. Females of *E. innovatus* are slightly smaller and more slender than those of both previously mentioned species; they differ by the presence of minute declivital interstitial granules. The elytral declivity of *E. innovatus* is brightly shining in contrast to the dull declivity of *E. posticus* and the declivital granules are much smaller than those of *E. fulgidus*.

***Euwallacea jamaicensis* (Bright), Resurrected Name and New Combination**

*Xyleborus jamaicensis* Bright 1972: 79; Wood and Bright 1992: 770 (as synonym of *Xyleborus scaber* Schedl).

**Description (Female).** Length 2.7 mm, 3.0 times longer than wide; reddish-brown. Frons convex, faintly, narrowly impressed over epistoma; faintly longitudinally elevated from impression to above upper level of eyes; surface minutely reticulate, moderately shining, punctures large, shallow, widely placed; vestiture consisting of sparse, hairlike setae arising from each puncture, more obvious along epistomal margin. Antennal club as long as wide. Pronotum 1.2 times longer than wide; sides slightly converging on posterior half, anterior margin broadly rounded, unarmed; anterior slope bearing numerous, small asperities, surface between asperities faintly reticulate; posterior and lateral area finely rugose, reticulate, opaque, punctures very faint and hardly visible; vestiture consisting of sparse, hairlike setae scattered over

surface. Elytra 2.0 times longer than wide; sides parallel on basal three-fourths, narrowly rounded behind; striae not impressed, punctures shallow, close, moderate in size; interstriae smooth, shining, weakly convex, punctures small, inconspicuous; vestiture consisting of erect, sparse, hairlike interstitial setae and inconspicuous striae setae. Declivity sloping, slightly transversely concave from interstriae 2 to lateral margin; striae weakly impressed, diverging away from suture, then back to apex, punctures a little larger than on disc; interstriae 1–4 with a median row of small, acute, equal-sized granules; lateral ridge of interstriae 7 acute.

**Male.** Unknown.

**Distribution.** This species is known from Jamaica.

**Specimen examined. JAMAICA:** Saint Andrew Parish, Hardwar Gap, 4000', 6 July 1966, A. T. Howden (1–CNCI).

**Comments.** This species was placed in synonymy under *X. scaber* by me in 1985. After reexamination of the types of both species I here re-instate *X. jamaicensis* as a distinct species. Females of *X. jamaicensis* are larger than those of *X. scaber* and the elytral declivity is slightly transversely concave and bears setae in the striae punctures. In addition, *X. jamaicensis* was described from a high elevation locality on Jamaica while Wood (2007) records *X. scaber* from southern Brazil.

### *Euwallacea posticus* (Eichhoff)

Figure 199.

*Xyleborus posticus* Eichhoff 1869: 281; Wood and Bright 1992: 764; Bright and Skidmore 1997: 163; Bright and Skidmore 2002: 117; Bright 2014: 204.

*Euwallacea posticus*: Storer et al. 2015: 396.

**Description (Female).** Length 2.4–2.7 mm, slightly less than 3.0 times longer than wide; very dark reddish-brown to almost black. Frons convex, with a very indistinct carina or smooth space extending from epistoma margin to above upper eye level; surface dull, minutely reticulate, punctures moderate in size, deeply impressed, close. Antennal club as long as wide. Pronotum 1.1 times longer than wide; sides slightly arcuate, anterior margin very slightly rounded, almost truncate, unarmed; anterior slope with numerous, small asperities, surface between asperities shining; posterior portions smooth, moderately shining, punctures fine, widely separated; summit at middle. Elytra 1.7 times longer than wide; sides parallel on basal three-fourths, narrowly rounded at apex; discal striae weakly impressed, punctures large, close, moderately deeply impressed; discal interstriae weakly convex, 2.0 times wider than striae, each with a median row of punctures equal in size to striae punctures, more shallowly impressed and less numerous; vestiture consisting of long interstitial setae, striae setae absent. Declivity convex, steep; surface minutely reticulate, dull; each interstriae with a median row of very small granules and long setae; posterior and lateral margins acute, slightly elevated, weakly serrate.

**Male.** Not present in material examined. See Wood (2007) for a description.

**Distribution.** This species is known from southern Mexico to Bolivia and Brazil and probably occurs throughout the West Indies.

**Specimens examined. CUBA:** Cienfuegos, Rio Cabagan, 21.93123–80.08461, 651 m, 20.V.2013, R. Anderson, gallery forest litter, 2013–026 (1–CMNO); Sancti Spiritus Province, Sierra Escombray, Topes de Collantes, 13 Feb. 1981: J. Spangler and A. Vega (1–USNM). **DOMINICA:** Trafalger Falls, ca. 1200', Aug. 12, 1986, C. W. and L. B. O'Brien (1–CNCI); Saint Paul, Springfield Estate, 2.6 km ENE Canefield, 15–21N, 61–22W, 480 m / 13 June 1991, J. E. Rawlins, S. A. Thompson (1–CMNH); Springfield Estate, Mt. Joy, 31.V-16.VI.2004 / ridge-top forest flight intercept trap, 550 m, S. and J. Peck (1–SBPC); Springfield Estate, 330–360 m, 30.V-16.VI.2004, S. and J. Peck, mature second forest flight intercept trap (2–SBPC). **PUERTO RICO:** Bisley, El Yunque, 10.IX.1989, on *Inga* sp. (1–CNCI); El Yunque Station, Loquillo Forest, VII.6–9.1969, H. and A. Howden (2–CNCI); El Yunque, 17.VII.1989, in *Cyrtilla racemiflora* log (1–CNCI); San Juan, San Juan, Site 4, EDRR, 18.30471, -66.07043, 19.VI-1.VII.2013, C. Torres and H. Rivera (1–MSUC); EDRR Site 7, 16.VII. 2014 (2–MSUC). **SAINT LUCIA:** Barre de L'Isle, 13.9341°N, 60.9586°W, 320 m, 22 May 2009, in rotting log, R. C. Winton (1–WIBF); Piton Troumasse, 13.8547°N, 61.0127°W,



**Figures 196–202.** Declivities of *Ewallacea* spp. **196)** *E. elevatus*. **197)** *E. fulgidus*. **198)** *E. innovatus*. **199)** *E. posticus*. **200)** *E. simulatus*, dorsal. **201)** *E. simulatus*, lateral. **Figure 202.** Pronotum of *E. simulatus*.

646 m, 27 May 2009, ex. rotting log, C. A. Maier (1–WIBF); Millet Forest Trail, 13°90'N, 60°99'W, 10.VII.2009 / ex. large fallen tree, D. E. Bright (1–CNCI).

**Record from literature.** GUADELOUPE, island record only (Wood and Bright 1992).

**Comments.** Females of this species may be recognized by the steeply sloping elytral declivity on which the striae are weakly impressed and each interstriae bears a median row of small granules and a row of fine, slender setae. The declivital surface is dull and densely minutely reticulate.

***Euwallacea simulatus* (Bright), New Combination**

Figures 200, 201, 202.

*Xyleborus simulatus* Bright 1972: 80; Wood and Bright 1992: 774; Bright 2014: 206.

**Description (Female).** Length 2.9 mm, 3.2 times longer than wide; very dark reddish-brown. Frons evenly convex, very faintly, transversely impressed below middle; surface shining, minutely reticulate except for a very slightly elevated spot below middle, punctures fairly large, shallow and widely separated. Antennal club as long as wide. Pronotum 1.2 times longer than wide; sides parallel, anterior margin broadly rounded, unarmed; summit prominent; anterior margin bearing numerous, small asperities, surface between asperities moderately shining, faintly, minutely reticulate; posterior and lateral region weakly sculptured, punctures fine, shallow and widely separated; vestiture consisting of moderately long, hairlike setae on anterior slope and along lateral margins. Elytra 1.9 times longer than wide; sides parallel on anterior three-fourths, broadly rounded behind; striae not impressed, punctures moderately fine, slightly impressed; interstriae shining, very finely punctured; vestiture consisting of a few scattered, erect, stout, interstitial setae. Declivity sloping; striae as on disc except 1 and 2 strongly diverging from the suture making interstriae 1 much broader below midpoint of declivity; a large, acute granule is located in widened area of interstriae 1 and a smaller granule is located at the top of the declivity; interstriae 2 unarmed; interstriae 3 bearing one or two small, acute granules; ventral margin acute.

**Male.** Unknown.

**Distribution.** This species is known from the West Indies in Jamaica, Puerto Rico and the Dominican Republic.

**Specimens examined. DOMINICAN REPUBLIC:** Province Santiago, Par. Nac. A. Bermudez, Los Tablones, 1290 m, M. A. and R. O. Ivie, flight intercept trap (1-WIBF); Pr. Independencia, Sierra de Neibe, 1515 m, 18°39.680'N, 71°46.418'W, 25 July 1999, cloud forest, M. A. Ivie and K. A. Guerrero (1-WIBF); La Vega Province, PN. A. Bermudez, Cienaga, 19.VII-2.VIII.1995, 1000 m, tropical evergreen forest flight intercept trap, S. and J. Peck (2-SBPC). **JAMAICA:** Saint Andrew Parish, Hardwar Gap, 4000', 16 July 1966, Howden and Becker (8-CNCI); Saint Andrew Parish, Holywell Forest Camp, 16.VIII.1971, 4000 ft., M. Winegar, blacklight trap (2-FSCA); Silver Hill, 12-14.V.1981, stickyboard (1-WIBF). **PUERTO RICO:** El Yunque Station, Luquillo Forest, 6-9.VII.1969, H. and A. Howden (1-CNCI); Orocavis Co., Orocavis, 18.18103-66.483 (Toro Negro State Forest), 19.VI-2.VII.2013, EDRR Site 7, J. Torres and H. Rivers (5-MSUC).

**Comments.** Females of this species may be recognized by the presence of a pair of moderately large, acute granules on the lower portion of declivital interstriae 2. Declivital striae 2 curves laterally around base of this large granule. In addition, the elevated ridge extending from the sutural apex to interstriae 7 is strongly elevated, acute and bears several distinct serrations.

Females of this species resemble those of *E. similis* (Ferrari), a species now known as *E. denticulus* (Motschulsky) (Mandelstam and Nikitsky 2010) from the Old World tropics. This species was introduced into the eastern United States (Rabaglia et al. 2006) and was transferred to *Euwallacea* by Storer et al. (2015). Adults of *E. simulatus* differ by the much larger tubercle in the widened declivital interstriae 1 and by the larger body size. Females of *E. simulatus* display the characters of *Euwallacea* as outlined by Storer et al. (2015) and the species is therefore transferred to that genus.

**Genus *Sampsonius* Eggers**

*Sampsonius* Eggers 1935: 157; Wood and Bright 1992: 655; Bright and Skidmore 1997: 141; Bright and Skidmore 2002: 422 (checklist); Bright 2014: 184.

Members of *Sampsonius* may be distinguished from other members of the Xyleborini by the very slender body shape, by the flat antennal club with two slightly procurved sutures on the anterior face, by

the gradually sloping elytral declivity that is generally as long as the discal portion of the elytra and bearing unusual armature.

Petrov and Flechtmann (2013) record 22 species in this genus, all from the New World tropics. One species occurs in the West Indies.

All species are considered “domicile parasites”, e. g. the female forces entry into the tunnel of another species of ambrosia beetle, usually a species of *Xyleborus*, evicts the original occupant of the gallery system along with its eggs, larvae and pupae and then establishes her own brood in the occupied tunnel. All species are xylomycetophagous and are rarely encountered.

### ***Sampsonius dampfi* Schedl**

Figures 466, 537.

*Sampsonius dampfi* Schedl 1940: 359; Wood and Bright 1992: 655; Bright and Skidmore 1997: 141; Bright and Skidmore 2002: 102; Petrov and Flechtmann 2013: 174; Bright 2014: 184.

**Description (Female).** Length 3.3 mm, 3.5 times longer than wide; light brown. Frons broadly convex; surface reticulate, with scattered, fine granules. Pronotum 1.6 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded with two large, acute serrations; anterior slope finely asperate; posterior portion smooth, shining, with widely scattered, very fine, weakly impressed points. Elytra 2.5 times longer than wide; discal striae not impressed, punctured in regular rows, punctures large, each bearing a fine, erect seta; discal interstriae narrower than striae, smooth, each with a median row of long, fine setae, these at least twice as long as interstitial width; apical 38 percent distinctly sloping, lateral margin of slope bearing numerous, small serrations; surface of slope dull, minutely reticulate, interstriae 1 slightly elevated, with a median row of fine granules and terminating in a large, triangular, basally contiguous process, interstriae 2 slightly impressed; interstriae 3 slightly elevated, bearing a median row of fine granules; vestiture consisting of very long, fine setae, these longer than terminal process.

**Male.** Dwarfed, flightless; 2.5–2.7 mm in length, 3.3–3.5 times longer than wide (complete description and illustration in Petrov and Flechtmann (2013).

**Distribution.** This species is known from southern Mexico to Venezuela and Brazil and in the West Indies from Jamaica.

**Specimens examined. JAMAICA:** Saint Ann Parish, 2 mi. W Discovery Bay, Runaway Caves, 25.III-1.IV.1991, dry limestone woods, Lindgren trap, T. K. Philips and L. Gerfsky (1–WIBF); Westmoreland Parish, Bluefields, Calden Est., 8.XII.1969, 1800 ft., E. G. Farnworth, blacklight trap (2–FSCA).

**Comments.** Females of this species may be readily distinguished by the very narrow, elongate body shape, by the presence of two large serrations on the anterior margin of the pronotum and by the basally contiguous, strongly elevated processes on the apex of the elytral declivity.

Wood and Bright (1992) record *Ochroma* sp., *Qualea wittrockii*, *Theobroma cacao* and *Vismia* sp. and further state that this species is a “domicile parasite” of *Dryocoetoides capucinus*.

Wood (2007, plate 79) provides good photographs of the female of this species. Petrov and Flechtmann (2013) provide excellent photographs of male, female and aedeagus.

### **Genus *Theoborus* Hopkins**

*Theoborus* Hopkins 1915a: 57; Wood and Bright 1992: 660; Bright and Skidmore 2002: 443 (checklist); Bright 2014: 187.

Members of this genus may be distinguished from those in the other genera of the Xyleborini by the presence of one or two arcuate sutures on the posterior face of the antennal club and by the flat, unarmed, posterior face of the anterior tibia.

All species of *Theoborus* occur in the New World, with the exception of one species introduced into Africa (Wood and Bright 1992). Bright and Skidmore (2002) list eight species in the genus. Six species are herein recognized from the West Indies.

### Key to the species of *Theoborus* in the West Indies

(Females only)

1. Postero-lateral margin of declivity acutely elevated and crenulate from sutural apex to interstriae 7; elytral declivity steeply, evenly convex, not impressed along suture, with moderate to large granules in all interstriae; length 2.5 mm; Saint Lucia ..... ***T. crinitulus* (Wood)** (p. 274)
- Postero-lateral margin of declivity rounded and devoid of crenulations, may be weakly elevated from suture to interstriae 3; elytral declivity without granules in all interstriae ..... **2**
  
- 2(1). Declivital apex sharply acuminate, tips acute, slightly divaricate; declivital surface dull, with minute granules in interstriae 1 and 3; anterior margin of pronotum with two large serrations; length 2.1–2.3 mm, 2.6 times longer than wide; Puerto Rico, Grenada ..... ***T. bellus* (Bright and Torres)** (p. 273)
- Declivital apex broadly to narrowly rounded; declivital surface dull or shining; anterior margin of pronotum usually with more than two serrations ..... **3**
  
- 3(2). Elytral declivity evenly, broadly convex, not impressed or granulate; each elytral interstriae bearing a median row of long setae, these longer than interstitial width; elytral apex broadly rounded; length 1.8–2.2 mm; widely distributed ..... ***T. theobromae* Hopkins** (p. 276)
- Elytral declivity convex to sloping with interstriae 2 weakly to distinctly impressed ..... **4**
  
- 4(3). Elytral declivity steep, interstriae 2 slightly impressed, striae 1 deeply impressed, all interstriae bearing a median row of erect setae and very small granules; length 2.3–2.5 mm; Greater Antilles ..... ***T. ricini* (Eggers)** (p. 275)
- Elytral declivity sloping with striae distinctly, weakly impressed or declivity steep with interstriae 2 impressed; elytral apex narrowly rounded; declivital interstriae 3 curving toward sutural apex and joining interstriae 1 at apex ..... **5**
  
- 5(4). Elytral declivity shining, interstriae 2 distinctly impressed, 1 and 3 slightly elevated, each bearing a few, moderately large granules; anterior margin of pronotum bearing a row of four, equal sized serrations; length 1.9 mm; Puerto Rico ... ***T. atlanticus* (Bright and Torres)** (p. 272)
- Elytral declivity completely dull, minutely reticulate, interstriae 2 not impressed, 1 and 3 weakly elevated, each with a median row of very small granules; anterior margin of pronotum with two larger serrations; length 2.2 mm; Puerto Rico, Dominican Republic ..... ***T. puertoricensis* Bright and Torres** (p. 274)

### ***Theoborus atlanticus* (Bright and Torres), New Combination**

Figure 191.

*Xyleborus atlanticus* Bright and Torres 2006: 417.

**Description (Female).** Length 1.9 mm, 2.7 times longer than wide; dark reddish-brown. Frons evenly convex, surface dull, densely, minutely reticulate, with a few, scattered setae, these more abundant along epistomal margin. Antennal club as long as wide; basal segment corneous, glabrous, occupying basal one-quarter of club; remainder of club pubescent with two indistinct, transverse sutures marked by rows of short setae. Pronotum less than 1.1 times longer than wide; sides very weakly arcuate to subparallel; anterior margin narrowly rounded, with two distinct, median serrations on margin, flanked on each side by one smaller serration; anterior slope steeply declivous with numerous, small, low, shining asperities, space between asperities densely, minutely reticulate, weakly shining; summit distinct, elevated, located slightly behind middle; posterior half moderately shining, densely, minutely reticulate, without obvious

punctures. Elytra 1.6 times longer than wide, sides parallel on basal two-thirds, then arcuately converging to narrowly rounded apex; apex with a very small sutural notch, each elytron vaguely separately rounded; discal striae not impressed, punctured in regular rows, each puncture with a very short seta; discal interstriae flat, 2.0–3.0 times wider than striae, surface brightly shining, each interstriae with a median row of long, erect setae, each seta as long as interstitial width, striae row extends from base to apex. Declivity basically evenly convex; interstriae 1 and 3 weakly elevated, each with a median row of small granules, those in interstriae 3 slightly larger than those in interstriae 1, interstriae 3 ends at junction with interstriae 9 which then continues as a weakly elevated ridge to elytral apex at junction with interstriae 1; interstriae 2 weakly impressed, with a median row of extremely small granules; interstriae 9 at apex with several very small serrations; entire surface shining, very minutely-rugose; vestiture of abundant, erect, scattered setae, these more abundant than on elytral disc.

**Male.** Unknown.

**Distribution.** This species is known from Puerto Rico and the Dominican Republic.

**Specimens examined.** DOMINICAN REPUBLIC: Province Pedernales, ca. 35 km N. Cabo Rojo, 1250 m, Las Abejas, 26 Aug-09 Sep 1988, flight intercept trap, M. Ivie, Philips and Johnson (1–WIBF). PUERTO RICO: Guaynabo, various dates in 1995 to 1999, J. Torres (7–CNCI).

**Comments.** Females of this species may be easily recognized by the very dull surface of the pronotum, by the slightly prolonged median portion of the anterior pronotal margin which bears a pair of distinct serrations and by the features of the elytral declivity as described above.

In the original description, I stated that the holotype and most of the paratypes would be deposited in the USNM. However, since all of the type material was collected by J. A. Torres and was deposited in the CNCI, the CNCI is the proper depository of the holotype and the paratypes.

### ***Theoborus bellus* (Bright and Torres), New Combination**

Figure 192.

*Coptoborus bellus* Bright and Torres 2006: 415; Bright 2014: 166.

**Description (Female).** Length 2.1–2.3 mm, 2.6 times longer than wide; dark reddish-brown. Frons evenly convex, surface shining, densely, minutely reticulate, with a few, scattered setae, these more abundant along epistomal margin. Antennal club as long as wide; basal segment corneous, glabrous, occupying basal one-quarter of club; remainder of club pubescent with two indistinct, transverse sutures marked by rows of short setae; posterior face with one arcuate suture at apex. Pronotum 1.5 times longer than wide, widest on anterior third; sides very weakly arcuate; anterior margin narrowly rounded, with two distinct, median serrations on margin, flanked on each side by one much smaller serration; anterior slope steeply declivous with numerous, small, low, shining asperities, space between asperities densely, minutely reticulate, weakly shining; summit distinct, elevated, located at middle; posterior half dull, densely minutely reticulate, without punctures. Elytra 1.5 times longer than wide, sides subparallel on basal half, then arcuately converging to narrowly rounded, attenuate apex; apex with a small, distinct sutural notch, each elytron separately rounded; discal striae not impressed, punctured in regular rows, punctures moderately large, each with a minute seta; discal interstriae flat, 2.0–3.0 times wider than striae, surface smooth, brightly shining, with a median row of very fine points and a few small, erect setae. Declivity evenly convex; interstriae not elevated, 1 and 3 with a median row of very small granules, interstriae 3 ends at apex and continues as a weakly elevated ridge to elytral apex at junction with interstriae 1; interstriae 2 with a median row of very small granules, these much smaller than those on 1 or 3; entire surface dull, densely, minutely reticulate, contrasting sharply with the brightly shining discal surface; vestiture of very short, scattered setae.

**Male.** Unknown.

**Distribution.** This species is known from Puerto Rico and Grenada.

**Specimens examined. GRENADA:** Saint Andrew, Mirabeau Agriculture Laboratory, 2.IV.1990, A. Thomas (1-SBPC). **PUERTO RICO:** 12 mi. E Mayagüez, II.8.1969, L. and C. W. O'Brien (2-CNCI); Guaynabo, VIII.1-30.1999, ex: light trap, J. Torres (3-CNCI); Island record only, Site 10, EDRR, 2.ix.2014 (1-MSUC).

**Comments.** Females of this species may be easily recognized by the dull surface of the pronotum and elytral declivity, by the presence of two large serrations on the anterior margin of the pronotum and by the attenuate, narrowly rounded elytral apex.

In the original description of this species, I mentioned that the holotype and one paratype would be returned to C. W. O'Brien, one paratype would be deposited in the USNM and two paratypes would be deposited in the CNCI. However, Wood, in personal correspondence, claimed that the O'Brien specimens should be returned to him. Accordingly, the holotype and one paratype were sent to Wood and eventually became part of the USNM collection. Three paratypes are in the CNCI.

***Theoborus crinitulus* (Wood)**

Figure 193.

*Xyleborus crinitulus* Wood 1974: 34; Wood and Bright 1992: 721; Bright and Skidmore 1997: 155.

*Theoborus crinitulus*: Bright 2014: 187.

**Description (Female).** Length 2.5 mm, 2.5 times longer than wide; dark reddish-brown. Frons convex, with a weakly elevated, longitudinal carina extending from mid-point of surface to above upper level of eyes; surface moderately shining, minutely reticulate, with coarse, obscure punctures. Pronotum 1.1 times longer than wide, widest at middle; sides weakly arcuate; anterior margin broadly bounded, bearing four moderately large serrations; anterior slope with numerous asperities, these small than median pair of serrations on anterior margin; summit at middle; posterior half smooth, shining, with dense, weakly impressed punctures. Elytra 1.3 times longer than wide, widest at base of declivity; sides slightly diverging, apex broadly rounded, slightly sub-acuminate at suture; discal striae very weakly impressed, slightly more so toward declivital base, punctures obscure, close; discal interstriae shining, with numerous, scattered, very small punctures, these marked by erect, moderately long setae, each seta as long as or slightly longer than interstitial width. Declivity steeply sloping, broadly convex; striae not impressed, punctures obscure, larger than those in discal striae; all interstriae with a median row of moderately large, pointed tubercles; suture slightly projecting at apex; postero-lateral margin acute, subcrenulate, extending from suture to interstriae 8 (or 9?).

**Male.** Unknown.

**Distribution.** This species is known from Venezuela and Panama and in the West Indies from Saint Lucia.

**Specimen examined. SAINT LUCIA:** Barre de L'Isle, 13.9326°N, 60.9577°W, 285 m, 27 June-03 July 2009, canopy Malaise, C. A. Maier and M. L. Gimmel (1-WIBF).

**Comments.** The Saint Lucia specimen was compared to the type material of *T. crinitulus* (Wood). It differs slightly from the type specimens, mainly in the smaller, more obscure striae punctures on the elytral disc. However, the specimen appears to be a minor variant and I prefer to refer it to Wood's species.

Females may be recognized by the steeply declivous and broadly convex elytral declivity which bears distinct tubercles on all interstriae, by the acutely elevated, subcrenulate postero-lateral margin of the declivity and by the slightly acuminate elytral apex.

This species was described by Wood (1974) in *Xyleborus*. It is treated in *Theoborus*, without a new combination indication, in Wood (1982) but is listed in *Xyleborus* in Wood and Bright (1992). Wood (2007) treated the species again in *Theoborus* but this time with a new combination designation.

***Theoborus puertoricensis* Bright and Torres**

Figures 194, 405.

*Theoborus puertoricensis* Bright and Torres 2006: 414.

“*Coptoborus puertoricensis* Bright”: Wood 2007: 398 (wrong author, wrong date, wrong type locality); Bright 2014:166.

**Description (Female).** Length 2.2 mm, 2.6 times longer than wide; dark reddish-brown. Frons evenly convex, surface dull, densely, minutely reticulate, with a few, scattered setae, these more abundant along epistomal margin. Pronotum 1.1 times longer than wide; sides very weakly arcuate; anterior margin very narrowly rounded, sharply extended at center with two distinct, median serrations on margin, flanked on each side by one very small serration; anterior slope steeply declivous with numerous, small, low, shining asperities, space between asperities densely, minutely reticulate, weakly shining; posterior half moderately shining, densely, minutely reticulate, with very obscure, very weakly impressed, widely scattered, small points, these sometimes barely visible. Elytra 1.6 times longer than wide; sides parallel on basal half, then arcuately converging to narrowly rounded apex; discal striae not impressed, punctured in regular rows; discal interstriae flat, 2.0–3.0 times wider than striae, surface minutely reticulate, more brightly shining than posterior portion of pronotum. Declivity basically evenly convex; interstriae 1 and 3 weakly elevated, each with a median row of small granules, interstriae 3 ends at junction with weakly elevated interstriae 9 which then continues as a weakly elevated ridge to elytral apex at junction with interstriae 1; interstriae 2 weakly impressed, with a median row of very small granules; interstriae 9 at apex with several acute granules; entire surface dull, minutely reticulate; vestiture of very short, scattered setae.

**Male.** Unknown.

**Distribution.** This species is known from Puerto Rico and the Dominican Republic.

**Specimens examined. DOMINICAN REPUBLIC:** Colonia Ramfis, Cordillera Central, J. Klapperich (1–CNCI?), San Cristobal Province, Borbon Cuevas Pomier, tropical deciduous forest flight intercept trap, 13–28.VII.95, S. and J. Peck, 200 m (1–SBPC); Pr. El Selbo, Loma de Chivo, 7 mi. N Pedro Sanchez, 5000 ft., 20.VI.1998, blacklight trap, R. E. Woodruff: H. Freytag (1–FSCA); Province Pedernales, km. 24 N Cabo Rojo, 11.VI.1998, 3000 ft., blacklight trap, R. E. Woodruff: Freytag (1–FSCA). **PUERTO RICO:** Cubuy Pine Forest, Canóvanas, multi-funnel Ips trap, *Pinus caribaea* (1–PRDA); Guaynabo, various dates from 1995 to 2000, J. Torres (59–CNCI); Carite Forest, at uv light, VII.28.1999, C. W. O’Brien and P. Kovarik (10–CNCI); 12 mi. E. Mayagüez, II.8.1969 / L. and C. W. O’Brien (4–CNCI); Caribbean National Forest, Catalina Field Sta., mercury vapor and blacklight, 24 May 1994, R. Turnbow (1–RHTC); Caribbean National Forest, Sierra Palm Center, mercury vapor and blacklight, 29.V.1004, R. Turnbow (1–RHTC); Caribbean National Forest, Hwy.186, El Verde Field Sta., 26.V.1994, M. C. Thomas, blacklight trap (1–RHTC); San Germán, San Germán, Site 9, EDRR, 18.15118, -66.99364, 3–30.VII.2013, C. Torres and H. Rivera (1–MSUC); El Yunque National Forest, near Palo Colorado picnic area, at La Mina Trail, 2090 ft. elev., III.21.2011, S. Seybold, collector / Ex. leaf stalks *Cecropia schreberiana* (1–CNCI).

**Comments.** Females of this species may be easily recognized by the very dull surface of the pronotum and elytral declivity, by the slightly prolonged median portion of the anterior pronotal margin which bears a pair of distinct serrations and by the features of the elytral declivity as described above.

This species was treated in *Coptoborus* by Wood (2007). Although the species displays some characteristics that might be construed to represent *Coptoborus*, I prefer to treat it in *Theoborus*.

In the original description, I stated that the holotype and most of the paratypes would be deposited in the USNM. However, most of the type material was collected by J. A. Torres and deposited in the CNCI; therefore, the CNCI is the proper depository of most of the type material. Several paratypes will be deposited in the USNM. The type locality of this species is Guaynabo, Puerto Rico; the original publication date and authors is as given above. The holotype, in the CNCI, has been examined.

### ***Theoborus ricini* (Eggers)**

Figure 195.

*Xyleborus ricini* Eggers 1932b: 298.

*Theoborus ricini*: Wood and Bright 1992: 661; Bright 2014: 187.

*Xyleborus solitariceps* Schedl 1954: 45 (Brazil).

**Description (Female).** Length 2.3–2.5 mm, 2.5 times longer than wide; reddish-brown. Frons evenly convex, surface dull, smooth to minutely reticulate, with scattered, shallow punctures and a few, scattered setae, these more abundant along epistomal margin. Pronotum 1.1 times longer than wide, widest just before middle; sides very weakly arcuate; anterior margin broadly rounded, anterior margin broadly rounded with four to six low serrations, median pair slightly larger; anterior slope steeply declivous with numerous, small, low, shining asperities, space between asperities minutely reticulate, dull to weakly shining; posterior half dull, minutely reticulate, with very obscure, very weakly impressed, widely scattered, small punctures. Elytra 1.5 times longer than wide; sides parallel on basal half, then arcuately converging to broadly rounded apex; discal striae not impressed, punctured in even rows, punctures small, slightly impressed; discal interstriae 3.0–4.0 times wider than striae, each with a median row of small punctures and short, erect setae (often abraded), these as long or slightly longer than interstitial width. Declivity steeply convex; striae 1 slightly impressed, deeper than on disc; remaining striae very shallowly impressed; interstriae 2 moderately impressed; interstriae 1 and 3 weakly elevated; all interstriae with a median row of erect setae, 3 with a few, very small granules; posteriolateral margin acutely elevated from suture to level of base of declivity.

**Male.** Unknown.

**Distribution.** This species is known from Southern Mexico to Colombia and Brazil and in the West Indies from the Dominican Republic, Jamaica and Puerto Rico. It was introduced from Africa.

**Specimens examined. PUERTO RICO:** Isabela, Road #2, km. 114.7 / Lindgren funnel trap with Manuka oil (1-PRDA, 1-CNCI); Isabella, PR #1, km. 96.2 / VIII.14.13 / Lindgren funnel trap with Manuka oil (1-PRDA); San Juan Co., San Juan, Site 1, EDRR [Convention Center], 18.45106, 66.09306, 2.VII-1.VIII.2013, C. Torres and Rivera (5-MSUC); San Juan Co., San Juan, Site 2, EDRR [Botanical Garden], 18.38911, 66.05533, 18.VI-2.VII.2013, funnel trap with ETOH, C. Torres and Rivera (4-MSUC).

**Records from literature. DOMINICAN REPUBLIC:** Island record only (Wood and Bright 1992); **JAMAICA:** Island record only (Wood 2007).

**Comments.** Females of this species may be recognized by the steeply flattened elytral declivity on which interstriae 2 is shallowly impressed and by the rows of short setae in all interstriae.

Rabaglia et al. (2006) record this species in the New World from Florida, Mexico, Costa Rica and South America; they do not mention the Dominican Republic although recorded from there in Wood and Bright (1992). The source of that record was not recorded and was not determined during this study. Wood (2007) stated that he saw two specimens from Jamaica; the actual locality was not recorded. The Puerto Rico specimens reported above were all collected in traps as part of the USDA EDRR program.

The holotype, in the Eggers collection in the USNM, was examined.

### ***Theoborus theobromae* Hopkins**

Figures 467, 538.

*Theoborus theobromae* Hopkins 1915a: 57; Wood and Bright 1992: 661; Bright 2014: 187.

*Xyleborus hirtellus* Schedl 1949b: 271 (Saint Vincent, Trinidad).

**Description (Female).** Length 1.8–2.2 mm, 2.4–2.5 times longer than wide; light brown to dark reddish-brown. Frons evenly convex, surface dull, densely, minutely reticulate, with scattered, shallow punctures and a few, scattered setae, these more abundant along epistomal margin. Pronotum as long as wide; sides very weakly arcuate; anterior margin broadly rounded, very weakly extended at center with four to six low serrations, median pair slightly larger; anterior slope steeply declivous with numerous, small, low, shining asperities, space between asperities densely, minutely reticulate, dull to weakly shining; posterior half dull, densely, minutely reticulate, with very obscure, very weakly impressed, widely scattered, small points. Elytra 1.2–1.3 times longer than wide; sides parallel on basal half, then arcuately converging to broadly rounded apex; discal surface randomly punctured, striae and interstriae not clearly evident, striae marked by rows of very short setae, striae and interstitial punctures similar in size and depth. Declivity basically evenly convex; interstriae 1 very weakly elevated; entire declivital surface

appearing randomly punctured, similar to disc with minute granules in interstriae 1–3; vestiture consisting of long interstitial setae, these longer than interstitial width and very short striae setae.

**Male.** Not present in material examined. See Wood (2007) for description.

**Distribution.** This species is known from southern Mexico to northern South America and occurs throughout the West Indies.

**Specimens examined. CUBA:** Camaguey, Sierra de Cubitas, Res. Ecol. Limones-Tuabaquey, Hojo de Bonet, 21.61027–77.78371, 11.V.2013, 143 m, A. Deler-Hernandez, sinkhole forest litter, 2013–010 (1–CMNO). **DOMINICA:** Clark Hall (1–USNM); D’Leau Gommier (1–USNM); 1250', 5 mi. E of Dublanc, 16 Aug 1986, C. W. and L. B. O’Brien (1–CNCI); Pont Cassé, 1900', 6.24.2004, C. and L. O’Brien (2–CNCI); Springfield Estate, 330–360 m, 30.V–16.VI.2004, S. and J. Peck, mature second forest flight intercept trap (4–SBPC); Saint George Parish, 1.5–3.5 km W Freshwater Lake, 23 June 2004, R. Turnbow (1–RHTC); Saint George Parish, Middleham Falls Trail, 29 June 2004, R. Turnbow (1–RHTC) Saint David Parish, Emerald Pool Trail, 20 June 2004, R. Turnbow (1–RHTC); Saint Paul Parish, Springfield Plantation, 22 June 2004, R. Turnbow (1–RHTC). **DOMINICAN REPUBLIC:** Province Hato Mayor, Par. Nac. Los Haitises, west of Sabana de la Mar, bosque humido, 01–02 Apr. 1992, M. A. Ivie and D. Sikes (1–WIBF); Barahona, 4 km N Paraiso, 150 m, 22.III.1991, L. Masner (1–CNCI); Barahona, 7 mi NW Paraiso, 200 m, rainforest remnant, 27.XI–4.XII.1991, intercept trap, Masner and Peck (1–CNCI). **GRENADA:** Grand Etang National Park, Mt. Qua Qua Trail, IX.9.1999, C. W. and L. B. O’Brien (1–CNCI); Saint Andrew, Mirabeau Agriculture Laboratory, 11.IV.1990, J. Telesford, light trap (1–CNCI). **GUADELOUPE:** Basse-Terre, Gourbeyre, Palmiste, 05–20 Jan 2003, J. Touroult colr (1–WIBF); Basse-Terre, Gourbeyre, Foret de Moscou, 20–26 Feb 2003, J. Touroult (1–WIBF); Basse-Terre, Petit Binro, 02 Jan 2002, J. Touroult (3–WIBF); Gourbeyre, various dates 2002, 2003, J. Touroult (9–WIBF); Basse-Terre: Bains Jaunes to 1.5 km W, 25 May 2012, R. Turnbow (1–RHTC). **MARTINIQUE:** Bellefontaine, 350 m, 25.III.2011 / J. Touroult (6–CNCI). **MONTserrat:** Gunn Hill, 8–23 May 2002, K. Marske, flight intercept trap/pitfall (1–WIBF). **NETHERLANDS ANTILLES: Saba,** 525 m, Ecolodge on Mt. Scenery, 17.62879°N, 63.23785°W, 01 Apr–1 May 2008, D. Sikes, J. Slowik, flight intercept trap w/ pitfall (1–WIBF). **SAINT LUCIA:** 1250', Petite Monier Radio Stn., east side, Aug. 7, 1986, C. W. and L. B. O’Brien (1–CNCI); Piton Flore, 25.III.2011, J. Touroult (14–CNCI); Piton Flore, 13.9646°N, 60.9448°W, 31 May 2009, 532 m, S. M. Clark et al., sweeping (1–WIBF); Quilles F. R., LaPorte Trail, 13.8404°N, 60.9740°W, 04 May 2009, I. A. Foley (1–WIBF).

**Records from literature. BAHAMAS and SAINT VINCENT:** Island records only (Barriga-Tuñón and Kirkendall 2015).

**Comments.** Females of this species may be distinguished by the randomly punctured elytra with striae and interstitial punctures similar in size and depth and by the evenly convex elytral declivity.

### Genus *Xyleborinus* Reitter

*Xyleborinus* Reitter 1913: 79, 83; Wood and Bright 1992: 803; Bright and Skidmore 1997: 170; Bright and Skidmore 2002: 448 (checklist); Bright 2014: 189.

Members of this genus may be readily recognized by the conical scutellum which is usually surrounded by setae. The scutellum of species in all other genera of the Xyleborini is either not visible or is a flat, triangular structure between the elytral bases.

Bright and Skidmore (2002) list 79 species in this genus from tropical and subtropical regions of the world. Two additional species were recently described by Bright and Torres (2006) and Wood (2007). Eight species are herein treated from the West Indies.

All members of this genus are xylomycetophagous and polyphagous. Females bore deeply into the wood of host plants and introduce an ambrosial fungus which grows on the tunnel walls and upon which the larvae feed. Males are rare and flightless. Mating, if it occurs, takes place either with sibling sisters or mother-son.

### Key to the species of *Xyleborinus* in the West Indies

(Females only)

1. Elytral declivity very steep, interstriae 3 armed with two large, distinct spines or granules, a large spine on lower margin of declivity at apex of interstriae 3 and a smaller spine in interstriae 3 at base of declivity ..... **2**
- Elytral declivity sloping to convex and impressed, armed with granules or small to moderately large spines, exceptionally large spines absent; declivital face shining ..... **3**
- 2(1). Declivital face dull, minutely reticulate, with small punctures forming vague striae rows; major spine at apex of declivital interstriae 3 1.5 times longer than basal width, supplementary granules on interstriae 4 very small; length 2.3 mm; Puerto Rico ..... ***X. insulosus* Bright and Torres** (p. 282)
- Declivital face shining, striae punctures obsolete; major spine at apex of declivital interstriae 3 much longer, at least 3.0 times longer than basal width, supplementary spines on interstriae 4 much larger, acute; length 2.3 mm; Saint Lucia ..... ***X. echinatus* Bright, sp. nov.** (p. 280)
- 3(1). Elytral apex very narrowly rounded and strongly acuminate; length 1.8–1.9 mm; Cuba, Jamaica ..... ***X. andrewesi* (Blandford)** (p. 279)
- Elytral apex broadly rounded to truncate; length 1.6–2.7 mm ..... **4**
- 4(3). Length 2.7 mm; declivity abrupt, steep, all interstriae with small, acute tubercles, these less numerous on interstriae 2; Jamaica ..... ***X. howdenae* (Bright)** (p. 282)
- Length less than 2.5 mm; declivity evenly convex or weakly impressed, with or without small granules or tubercles ..... **5**
- 5(4). Declivital interstriae 3 bearing a row of eight large, acute tubercles; declivital interstriae 1 and 2 unarmed except for one or two small tubercles at base; lateral portions of declivity bearing 20 smaller granules; length 2.0–2.2 mm; Saint Lucia ..... ***X. reconditus* (Schedl)** (p. 284)
- Declivital interstriae 3 not bearing a row of large, acute granules; declivital interstriae 1 and 2 bearing small granules; lateral portions of declivity not bearing granules ..... **6**
- 6(5). Declivity occupying posterior one-third of elytra, weakly impressed between interstriae 3, bearing a large granule on lower portion of interstriae 3 and several, slightly smaller granules on postero-lateral area; length 1.6–2.2 mm; widely distributed ..... ***X. gracilis* (Eichhoff)** (p. 281)
- Declivity convex, interstriae 1–3 equally flattened or weakly elevated, each with a row of small granules and without a large tooth on lower portion of interstriae 3 ..... **7**
- 7(6). Declivital interstriae 1 and 3 weakly elevated, bearing small tubercles, interstriae 2 not bearing tubercles; Florida, widespread in New World ..... ***X. saxesenii* (Ratzeburg)** (p. 284)
- Declivital interstriae 1, 2, and 3 evenly convex, each bearing a row of small tubercles ..... **8**
- 8(7). Declivital interstriae 1, 2 and 3 each with a row of small granules, these equal in size to granules on postero-lateral area; remaining interstriae each with a row of fine, acute tubercles; length 2.1–2.3 mm; Dominican Republic, Martinique ..... ***X. intersetosus* (Blandford)** (p. 283)
- Declivital interstriae 1, 2 and 3 each with a row of minute granules, these conspicuously smaller than granules on postero-lateral area; remaining interstriae each with a row of minute granules; length 1.7–2.1 mm; Lesser Antilles ..... ***X. buscki* (Hopkins)** (p. 279)

***Xyleborinus andrewesi* (Blandford)**

*Xyleborus andrewesi* Blandford 1896b: 227.

*Xyleborinus andrewesi*: Wood and Bright 1992: 804; Bright and Skidmore 2002: 122; Bright 2014: 190.

*Xyleborus insolitus* Bright 1972: 77 (Jamaica).

**Description (Female).** Length 1.8–1.9 mm, 2.8 times longer than wide; light brown. Frons convex, slightly impressed above epistomal margin; surface minutely reticulate, punctures large, faintly impressed, widely scattered; vestiture consisting of scattered, erect, hairlike setae. Antennal club 1.1 times longer than wide. Pronotum 1.2 times longer than wide; sides parallel, anterior margin broadly rounded, unarmed; anterior slope bearing numerous, low, small asperities; posterior portion dull, minutely reticulate, punctures small and very faint, more prominent near median line. Elytra 1.8 times longer than wide; sides parallel on anterior half, then narrowing gradually to the apex; striae feebly impressed, punctures of moderate size, slightly impressed; interstriae as wide as striae, interstriae 1, 3, 5 and 7 with acute, backward pointing granules, becoming large and prominent toward declivity, those on interstriae 1 extending nearly to base, progressively shorter on alternate interstriae; vestiture consisting of long, interstitial, hairlike setae and much shorter, recumbent, striae setae, interstitial setae longer than a distance equal to width of an interstriae. Declivity broadly sloping; striae more distinctly impressed than on disc, punctures obsolete; interstriae 1, 3 and 7 slightly elevated, 3 more so than others, all with numerous, acute granules, those on interstriae 3 and 7 larger; interstriae 2 bearing a few smaller granules in median portion.

**Male.** Unknown.

**Distribution.** This species occurs throughout the Old World tropics and subtropics. It was introduced into Hawaii and Florida (Cognato and Rubinoff 2008 and Okins and Thomas 2010) and was collected in Jamaica in 1966.

**Specimens examined. CUBA:** Santiago Province, Gran Piedra, Met. Radar, 6–17.XII.95, 1100 m, elfin forest flight intercept trap, S. Peck (1–CNCI); Guanma, Parque Nacional Pico Turquino, Aguada de Joachin, 1370 m, 20.015–76.840, 3.II.2012, R. Anderson, dry mixed forest litter, 2012–023 (1–CMNO). **JAMAICA:** Saint Andrew Parish, Irish Town, 24 August 1966, Howden and Becker (1–CNCI).

**Comments.** This species is introduced and may not be established in the West Indies, although the records from Jamaica and Cuba should confirm establishment. This species was recently recorded from southern Florida boring into sugar apple (*Annona squamosa*) (Okins and Thomas 2010).

Females of this species may be easily recognized by the distinctly tapered and narrowly rounded elytral apex and the gradually sloping elytral declivity. Cognato and Rubinoff (2008) and Okins and Thomas (2010) provide good photographs of the female of this species.

***Xyleborinus buscki* (Hopkins)**

Figures 203, 406, 469, 539.

*Xyleborus buscki* Hopkins 1915a: 63.

*Xyleborinus buscki*: Wood and Bright 1992: 806; Bright 2014: 190.

*Xyleborus longulus* Schedl 1966: 117 (Guadeloupe).

**Description (Female).** Length 1.7–2.1 mm, 2.8 times longer than wide; dark to light brown. Frons similar to *X. intersetosus* but without a faint, longitudinal line. Antennal club as in *X. intersetosus*. Pronotum as in *X. intersetosus*. Elytra 2.0 times longer than wide; sides parallel on anterior three-fourths, apex very broadly rounded; discal striae not impressed, punctures of moderate size, slightly impressed, each with a short seta as long as striae puncture; discal interstriae as twice as wide as striae, each with a median row of long, fine setae, these as long as or longer than width of interstriae. Declivity evenly convex, not impressed; interstriae 1–3 with a median row of minute granules; posterolateral portion not elevated, armed with numerous, small, randomly placed granules, these distinctly smaller than granules in interstriae 1–3.

**Male.** Length 1.2–1.3 mm, 2.7 times longer than wide; light brown. Frons convex, surface brightly shining, minutely reticulate, with scattered, fine punctures. Antennal funicle, at 200 $\times$ , appears 2- or 3-segmented (pedicel excluded); club as long as wide. Pronotum 1.2 times longer than wide; sides straight on basal two-thirds; anterior margin moderately rounded, unarmed; dorsal surface broadly sloping and somewhat flattened from mid-point to anterior margin, anterior slope bearing numerous, very small, inconspicuous asperities; summit not elevated; posterior portion moderately shining, minutely reticulate, with widely scattered, extremely faint, weakly impressed points. Elytra 1.6 times longer than wide; sides weakly arcuate on anterior three-fourths, apex narrowly rounded; discal striae not impressed, punctures obscure, slightly impressed, each with a short seta as long as striae puncture; discal interstriae twice as wide as striae, each with a median row of long, fine setae, these as long as or longer than width of interstriae. Declivity sloping, convex, interstriae 2 very weakly impressed; striae weakly impressed; interstriae without granules or other modifications; vestiture as on disc; posterolateral portion not elevated, unarmed.

**Distribution.** This species is known from the Lesser Antilles from Guadeloupe to Saint Lucia.

**Specimens examined. DOMINICA:** D'Leau Gommier, 1400', II.15 and III.2, 1965, H. E. Evans (2-USNM); 1.7 mi. E Pont Casse, III.4–11, 1965, O. S. Flint Jr. (1-USNM); Middleham Falls Trail, Cochrane, 31.V-11.VI.2004, N15°20.922', W61°20.74, 650 m, forest flight intercept trap, S. and J. Peck (2-CNCI); 2.5–3.5 km W Freshwater Lake, Morne Tres Piton National Park, 6–23–2004 (1-CNCI); S. Chiltern Est., 2 Feb 1965, W. W. Wirth (1-USNM). **GADELOUPE:** Gourbeyre (1-CNCI); Basse T., Gourbeyre, Palmiste, 05–20 Jan 2003, J. Touroult (11-WIBF); Basse-Terre: Gourbeyre, Champfleury, 31 Dec 2002, on *Inga*, J. Touroult (1-WIBF); Basse-Terre: Gourbeyre, FEB 2003, J. Touroult (6-WIBF). **MARTINIQUE:** 400 m, RF de Fond-Baron, 02.VI.2006 / Piegue vitre, en sous bois, ONF J. Touroult (1-CNCI). **SAINT LUCIA:** Mon Repos, 6.5 km W Fox Grove Inn, 10–28.VI.2007, submontane forest flight intercept trap, 300 m, S. and J. Peck (1-CNCI); Piton Flores, 13°96'N, 60°94'W, 3.VII.2009 / in broken branch, D. E. Bright (21-CNCI).

**Comments.** Wood (2007, in key) gives the size range of this species as 2.6–2.8 mm. This must be a transcription error and probably should be 1.6–1.8 mm. A large series from Guadeloupe, examined during this study, measures between 1.7–1.8 mm in length and the holotype is reported as 1.7 mm in length (Hopkins 1915a).

This species very closely resembles *X. intersetosus* and, in the earlier stages of this study, the two were considered synonymous. However, after examining many specimens of both species, I have decided to recognize both as distinct. Specimens of *X. buscki* may be distinguished by the granules in declivital interstriae 1, 2 and 3 are smaller than the granules on the posterolateral margin.

The long series from Piton Flores on Saint Lucia contained six males.

### ***Xyleborinus echinatus* Bright, sp. nov.**

Figure 204.

**Type Material. HOLOTYPE** (female) labeled: “**SAINT LUCIA:** Barre de L'Isle, 13.9326°N, 60.9582°W, 285 m, 19–25 June 2009, canopy Malaise, E. A. Ivie, C. Maier, S. Lesmond” / “**HOLOTYPE** *Xyleborinus echinatus* D. E. Bright 2016” (WIBF [CNCI]). **PARATYPES** (2): both labeled: “**SAINT LUCIA:** Barre de L'Isle, 13.9326°N, 60.9582°W, 340 m, 08–14 July 2009, canopy FIT, C. Maier, M. L. Gimmel” (CNCI, WIBF).

**Description (Female).** Length 2.3 mm, 3.0 times longer than wide; dark reddish-brown. Frons slightly convex; surface very dull, densely minutely reticulate, with weakly impressed, very vague, scattered punctures; epistoma slightly elevated, dull, with a fringe of long, yellowish setae. Antennal club as long as wide, basal corneous portion occupying one-third of club length. Pronotum 1.1 times longer than wide; sides evenly arcuate; anterior margin broadly rounded, unarmed, but several, low serrations are very near margin; anterior half steeply declivous, with numerous, scattered, erect asperities, surface between asperities weakly shining, minutely reticulate; summit elevated, located slightly anterior of middle; surface of posterior half dull, minutely reticulate, without distinct punctures and with scattered, long, erect setae. Elytra 1.8 times longer than wide, measured from base to apex of interstriae 1; striae very weakly impressed, punctured in even rows, each puncture with a moderately long seta, these longer

than diameter of puncture; interstriae weakly convex, brightly shining, as wide as striae, each with a median row of long, erect setae, these as long as or longer than interstitial width. Declivity occupying one-fifth of elytral length, steep, broadly, shallowly sulcate; face moderately shining, striae punctures obsolete; interstriae 1 very weakly elevated, with one, extremely small, acute granule at base of declivity; interstriae 2 unarmed; interstriae 3 with two larger, acute spines, one smaller spine at commencement of declivity and one large spine at apex, this spine 3.0 times longer than basal width, an additional smaller acute granule just below large spine; interstriae 5, 7 and 9 each with a row of large, acute spines, these shorter than major spine at apex on 3.

**Male.** Unknown.

**Distribution.** This species is known from Saint Lucia.

**Etymology.** From *echinatus*, Latin for prickly, referring to the larger major spine on the declivity.

**Comments.** Females of this species resemble those of *X. insulosus* from Puerto Rico but differ in the absence of a median carina on the convex, dull, reticulate frons, by the longer striae setae on the elytral disc, by the brightly shining face of the declivity with vague punctures in the equally vague striae and by the longer major spine at the base on declivital interstriae 3.

***Xyleborinus gracilis* (Eichhoff)**

Figure 205.

*Xyleborus gracilis* Eichhoff 1868b: 145.

*Xyleborinus gracilis*: Wood and Bright 1992: 808; Bright and Skidmore 1997: 171; Bright and Skidmore 2002: 122; Bright 2014: 191.

*Xyleborus aspericauda* Eggers 1941: 106 (Guadeloupe).

**Description (Female).** Length 1.6–2.2 mm, 2.3 times longer than wide; dark to light brown. Frons convex, with a very faint, longitudinal line; surface dull, minutely reticulate, punctures small, faintly impressed, widely scattered; vestiture consisting of scattered, erect, hairlike setae. Antennal club circular, as long as wide. Pronotum 1.2 times longer than wide; sides parallel, anterior margin broadly rounded, unarmed; anterior slope bearing numerous, low, small asperities; posterior portion dull, minutely reticulate, with widely scattered, very faint, weakly impressed points. Elytra 1.8 times longer than wide; sides parallel on anterior three-fourths, apex very broadly rounded, almost truncate; discal striae not impressed, punctures of moderate size, slightly impressed, each with a short seta as long as striae puncture; discal interstriae as twice as wide as striae, each with a median row of long, fine setae, these as long as or longer than width of interstriae. Declivity steeply convex, somewhat flattened, slightly impressed between interstriae 3; interstriae 1 and 2 with a median row of very small granules; interstriae 3 with a median row of slightly larger granules; posterolateral portion not elevated, armed with numerous, small, randomly placed granules; interstriae 3 with an acute granule at apex.

**Male.** Unknown.

**Distribution.** This species is known from the southeastern United States to Colombia and Argentina and probably throughout the West Indies.

**Specimens examined.** **DOMINICA:** St. Paul Parish, Springfield Est., 15.3463N, 61.3678W, 29 May–11 June 2011, elev. 357 m, L. L. Ivie: Lin. fnl (1–WIBF). **DOMINICAN REPUBLIC:** Province Hato Mayor, Par. Nac. Los Haitises, W of Sabana de la Mar, 01–16 Apr 1992, 10 m, M. A. Ivie, flight intercept trap (1–WIBF); Province Barahona, nr. Filipinas, Larimar Mine, 26.VI–7.VII.1992, R. E. Woodruff: Skelley, at light (1–RHTC). **GRENADA:** Saint Andrew, Mirabeau Agriculture Laboratory, 19.III.1990, A. Thomas, light trap (1–CNCI). **GADELOUPE:** Basse-Terre: Sofaia, 6 km SW of Ste. Rose, V.26.1985, C. W. and L. B. O'Brien (1–CNCI); Basse-Terre: Rivière Sens, Sentier Houëlemont, N15°58.93, W61°42.62, 80 m, 19–31.V.2012, humid forest flight intercept trap, S. Peck (2–SBPC). **MONTSERRAT:** Woodlands, Cassava Ghaut, Beattie House, 01–29 June 2003, K. A. Marske, flight intercept trap (1–WIBF). **PUERTO RICO:** Guaynabo, 23.III.1996, J. Torres, ex: light trap (1–CNCI); San Jose Co., San Jose, Site 4 EDRR, 18.30471, -66.07043, 15.VIII.2013, C. Torres and H. Rivera (1–MSUC); San Juan Co., San Juan,

Site 2, EDRR [Botanical Garden], 18.38911, -66.05533, 18.VI-2.VII.2013, funnel trap with ETOH, C. Torres and H. Rivera (1-MSUC).

**Comments.** Females of this species may be distinguished from other species of *Xyleborinus* by the declivity which is restricted to the posterior one-third of the elytra and is weakly impressed between each interstriae 3 and bears a larger spine on the lower portion of interstriae 3 and several, slightly smaller spines on the postero-lateral area.

Wood and Bright (1992) and Wood (2007) report this species from various species of *Cedrela*, *Couma*, *Eucalyptus*, *Maregravidia*, *Ochroma*, *Pinus*, *Pouteria*, *Terminalia* and *Theobroma*.

Wood (2007, Plate 134) provides a decent photograph of the female of this species.

### ***Xyleborinus howdenae* (Bright), New Combination**

Figure 206.

*Xyleborus novus* Bright 1972: 78 (preoccupied).

*Xyleborus howdenae* Bright 1973: 18; Wood and Bright 1992: 743.

*Xyleborus brighti* Schedl 1974: 335.

**Description (Female).** Length 2.7 mm, 3.0 times longer than wide; light brown. Frons somewhat flattened, faintly impressed on each side of median, longitudinal elevation, transversely impressed above epistoma; surface moderately shining, minutely reticulate, punctures large and deep, separated by a distance equal to more than their own diameter; vestiture consisting of moderately long, fine, hairlike setae, each of these arising from a puncture. Antennal club 1.1 times wider than long. Pronotum 1.1 times longer than wide; sides parallel, anterior margin broadly rounded, unarmed; anterior slope bearing numerous, small asperities, surface between asperities smooth, shining; posterior and lateral half duller, minutely reticulate, punctures very small, shallow, widely separated; vestiture consisting of short, hairlike setae arising from each puncture. Scutellum conical, acute, hidden by dense, short setae. Elytra 1.9 times longer than wide; sides parallel on anterior four-fifths, nearly truncate behind; striae not impressed, punctures of moderate size, shallowly impressed, close together; interstriae smooth, faintly punctate, punctures very fine, shallow, much smaller than striae punctures; vestiture consisting of long, hairlike interstitial setae and much shorter, striae setae. Declivity abrupt, steep; striae shallowly impressed, punctures smaller than on disc; all interstriae with acute tubercles, less numerous on interstriae 2, these tubercles larger, more prominent on lateral margins; declivital face duller than surface of disc.

**Male.** Unknown.

**Distribution.** This species is known from Jamaica.

**Specimens examined. JAMAICA:** Saint Andrew Parish, Hardwar Gap, 4000', 6 July 1966, Howden and Becker (1-CNCI); Silver Hill, C-12, 14.V.1981, sticky board (1-CNCI).

**Comments.** The female of this species may be distinguished by the abrupt, steep, impressed declivity with all the interstriae bearing small, acute tubercles, these less numerous on interstriae 2.

No host plant is known.

### ***Xyleborinus insulosus* Bright and Torres**

Figure 207.

*Xyleborinus insulosus* Bright and Torres 2006: 420.

**Description (Female).** Length 2.3 mm, 2.9 times longer than wide; light brown on the legs, antenna and elytra, darker reddish-brown on pronotum and head. Frons slightly convex, with a faint, longitudinal, median carina extending from epistoma to vertex of head; surface dull, densely minutely reticulate, with weakly impressed, scattered punctures; epistoma slightly elevated, brightly shining, with a fringe of long, yellowish setae. Antennal club as long as wide, basal corneous portion occupying one-third of club length. Pronotum 1.1 times longer than wide; sides evenly arcuate; anterior margin broadly rounded,

unarmed, but several serrations are very near margin; anterior half steeply declivous, with numerous, scattered erect asperities, surface between asperities shining, smooth; summit elevated, located slightly anterior of middle; surface of posterior half dull, minutely reticulate, without distinct punctures and with scattered, long, erect setae. Elytra 1.8 times longer than wide, measured from base to apex of interstriae 1; striae not impressed, punctured in even rows, each puncture with a minute seta, these shorter than diameter of puncture; interstriae flat, brightly shining, as wide as striae, each with a median row of long, erect setae, these as long as or longer than interstitial width. Declivity occupying one-fifth of elytral length, broadly, shallowly sulcate; face moderately dull, with large, deeply impressed, scattered punctures, these arranged in vague striae rows; interstriae 1 very weakly elevated, with one small, acute granule at base; interstriae 2 with one larger, acute granule at base, this granule slightly larger than the one in interstriae 1; interstriae 3 with two larger, acute granules at base, as in interstriae 2 but slightly larger and a larger spine at apex, this spine 1.5 times longer than basal width; interstriae 5, 7 and 9 with several small, blunt granules, these forming lateral margin of declivity.

**Male.** Unknown.

**Distribution.** This species is known from Puerto Rico.

**Specimens examined. PUERTO RICO:** Valle de Icacos, El Yunque, 17.VII.1989, in *Cyrtilla racemiflora* log, J. Torres (1-CNCI); El Yunque, Mt. Britton Trail, VIII.11.1999, ex. fallen spathe *Prestoea montana*, C. W. O'Brien and P. Kovarik (1-CNCI); Island record only, EDRR, Site 9, 15.VII.2014 (1-MSUC).

**Comments.** Females of this species may be recognized by the steep, slightly, but distinctly, concave elytral declivity which bears one large spine at the apex of interstriae 3 and several, small, acute granules on the declivital base in line with interstriae 1, 2 and 3. Seven or eight small, acute granules in interstriae 4 form the lateral margin of the declivity. The frons bears a faint, longitudinal carina which extends from the epistomal margin to the vertex of the head. Females resemble those of *X. echinatus* but may be distinguished by the characters mentioned in the key and in the comments under *X. echinatus*.

In the original description, I stated that the holotype would be deposited in the USNM. However, since the holotype was collected by J. A. Torres, the CNCI is the proper depository of the holotype.

### ***Xyleborinus intersetosus* (Blandford)**

Figure 208.

*Xyleborus intersetosus* Blandford 1898: 211.

*Xyleborinus intersetosus*: Wood and Bright 1992: 808; Bright and Skidmore 1997: 171; Bright 2014: 191.

**Description (Female).** Length 2.1–2.3 mm, 3.2 times longer than wide; dark to light brown. Frons convex, surface reticulate, without a faint, longitudinal line. Antennal club 1.4–1.5 times longer than wide. Pronotum 1.2–1.3 times longer than wide; sides parallel, anterior margin broadly rounded, unarmed; anterior slope bearing numerous, low, small asperities; posterior portion dull, minutely reticulate, with widely scattered, very faint, weakly impressed, fine punctures. Elytra 2.0 times longer than wide; sides parallel on anterior three-fourths, apex very broadly rounded; discal striae not impressed, punctures of moderate size, slightly impressed, each with a short seta as long as striae puncture; discal interstriae twice as wide as striae, each with a median row of long, fine setae, these as long as or longer than width of interstriae. Declivity evenly convex, not impressed; interstriae 1–3 with a median row of small granules; posterolateral portion not elevated, armed with numerous, small, randomly placed granules, these equal in size to the granules in interstriae 1–3.

**Male.** Unknown.

**Distribution.** This species was previously known from southern Mexico to Colombia and Brazil. It probably occurs throughout the West Indies.

**Specimens examined. DOMINICAN REPUBLIC:** Province Pedernales, ca 35 km N Cabo Rojo, 1250 m, Las Abejas, 26 Aug-09 Sept 1988, flight intercept trap, M. Ivie, Philips and Johnson (3-WIBF, CNCI); La Vega, Cordillera Central, Loma Casabito, 15.8 km NW Bonao, 19-02-12N, 70-31-08W, 1455 m, 28 May 2003 / J. Rawlins, C. Young, R. Davidson, C. Nunez: Acevedo, evergreen cloud forest, east slope, yellow pan trap (1-CMNH); La Vega

Province, PN. A. Bermudez, Cienaga, 19.VII.-2.VIII.1995, 1100 m, tropical evergreen forest flight intercept trap, S. and J. Peck (1-SBPC). **MARTINIQUE:** Piton Carbet, RF de Fond-Baron, piege vitre, 05.11.2007, J. Touroult (4-CNCI).

**Record from literature.** GUADELOUPE, island record only (Wood and Bright 1992).

**Comments.** Females of this species are very similar to those of *X. buscki* but may be distinguished by the similar sized granules in the declivital interstriae and on the postero-lateral areas.

### *Xyleborinus reconditus* (Schedl)

Figure 209.

*Xyleborus reconditus* Schedl 1963a: 60.

*Xyleborinus reconditus*: Wood and Bright 1992: 810; Bright and Skidmore 1997: 171; Bright 2014: 192.

**Description (Female).** Length 2.0–2.2 mm, 2.4 times longer than wide; black, legs and antennae light brown. Frons convex, surface reticulate, with scattered, fine punctures. Antennal club 1.4–1.5 times longer than wide. Pronotum 1.1 times longer than wide; sides weakly arcuate, anterior margin broadly rounded, unarmed; anterior slope bearing numerous, low, small asperities; posterior portion dull, minutely reticulate, with widely scattered, very faint, weakly impressed fine punctures. Elytra 1.5 times longer than wide; sides parallel on anterior three-fourths, apex very broadly rounded and shallowly notched at suture; discal striae not impressed, punctures of moderate size, slightly impressed, each with a short seta as long as striae puncture; discal interstriae 3.0–4.0 times wider than striae. Declivity commencing on anterior one-third of elytra, shallowly impressed; striae 1 and 2 with large, obscure punctures; interstriae 1 and 2 unarmed except for one or two small granules at base; interstriae 3 with a median row of eight or more large, equal sized tubercles, row extending from base to apex; lateral interstriae bearing numerous, smaller granules.

**Male.** Unknown.

**Distribution.** This species occurs from Costa Rica to northern South America and in the West Indies from Saint Lucia.

**Specimens examined.** SAINT LUCIA: Barre de L'Isle, canopy flight intercept trap, 13.93682°N, 60.95936°W, 08–14 July 2009, 340 m, C. A. Maier and M. L. Gimmel (1-WIBF).

**Comments.** Females of this species may be readily recognized by the broadly, shallowly sulcate elytral declivity which bears a row of eight to ten (sometimes more) large tubercles on interstriae 3. This row of tubercles extends from the declivital base to the elytral apex. Declivital interstriae 1 and 2 are unarmed except for one or two small granules at the declivital base. The specimen examined measures 2.0 mm; the size range given above is from the literature.

The specimen was compared to specimens previously compared to the holotype.

### *Xyleborinus saxesenii* (Ratzeburg)

*Bostrichus saxesenii* Ratzeburg 1837:167.

*Xyleborinus saxesenii*: Wood and Bright 1992: 810; Bright and Skidmore 1997: 171; Bright and Skidmore 2002: 123; Bright 2014: 192.

This exceedingly common and widespread species occurs throughout the Old and New World, but surprisingly has not been seen (or not recognized) in the West Indian fauna. Females of this species are similar to those of *X. intersetosus* and *X. buscki* but may be distinguished by the weakly elevated declivital interstriae 1 and 3 which bear small tubercles and by interstriae 2 not bearing tubercles. This species is not included in Appendix 2 nor is it included in the number of species occurring in the West Indies.



**Figures 203–209.** Declivities of *Xyleborinus* spp. **203)** *X. buscki*. **204)** *X. echinatus*. **205)** *X. gracilis*. **206)** *X. howdenae*. **207)** *X. insulosus*. **208)** *X. intersetosus*. **209)** *X. reconditus*.

### Genus *Xyleborus* Eichhoff

*Xyleborus* Eichhoff 1864: 37; Wood and Bright 1992: 704; Bright and Skidmore 2002: 451 (checklist); Bright 2014: 193.

Members of *Xyleborus* may be distinguished by the presence of a distinct, flat scutellum, by the absence of sutures on the posterior face of the antennal club, by the contiguous anterior coxae and by the additional characters mentioned in the above key to genera.

This genus contains more species than any other genus of Scolytidae. Wood and Bright (1992) and Bright and Skidmore (2002) list hundreds of species from throughout the temperate, tropical and subtropical regions of the world. Twenty species from the West Indies are treated herein. The extreme

diversity of this genus and the problem of what actually constitutes a species have resulted in taxonomic confusion and chaos. Considerable improvements have taken place in recent years but many problems remain. The keys in most recent taxonomic publications are difficult, if not impossible, to use and require an extensive reference collection to refer to.

Females of all species in this genus are diploid and the males are haploid. An unmated female produces males which then mate with the female to produce female broods. The male is flightless, dwarfed and morphological deformed. Because of this extreme inbreeding, an unmated female is potentially able to start a new population that, because of normal genetic variation, may appear to represent a different species. Numerous species have been named that almost certainly represent slight variations of more common species.

Most species are polyphagous, some with hundreds of host plants listed. Almost all parts of woody plants may be utilized, most species prefer recently cut, injured, or unhealthy host material. All species cultivate an ambrosia fungus in their galleries and vectoring of plant disease has been attributed to some species.

### Key to the species of *Xyleborus* in the West Indies

(Females only)

1. Anterior margin of pronotum armed by coarse or low serrations; elytral declivity broadly excavated, with two pairs of very large, acute spines and several additional pairs of smaller, acute spines along margin of excavated area; declivital vestiture scalelike; length 1.8–2.6 mm; widely distributed ..... ***X. spinulosus* Blandford** (p. 301)
- Anterior margin of pronotum unarmed by serrations; declivity variable but not as above ..... **2**
- 2(1). Elytral declivity with interstriae 1, 2 and 3 with a median row of small granules or short setae; body less than 3.0 times longer than wide; interstitial vestiture on declivity consisting of very short, narrow scales arranged in even rows, these shorter than interstitial width; length 1.6–1.9 mm; Lesser Antilles ..... ***X. pusio* Eggers** (p. 300)
- Elytral declivity with interstriae 1 and 3 bearing granules or tubercles; declivity bearing hairlike setae, scales not present ..... **3**
- 3(2). Declivital interstriae 3 with one large tubercle located at or slightly below middle of interstriae, smaller granules scattered; apical margin of declivity subacute, unarmed; length 2.4–3.3 mm; widely distributed ..... **4**
- Granules and/or tubercles on declivital interstriae 1 and 3 equal in size ..... **5**
- 4(3). Each discal interstriae bearing a median row of erect setae, row extending from base to commencement of declivity, each seta longer than interstitial width and as long or longer than adjacent seta in row; major large tubercle in declivital interstriae 3 usually located closer to declivital base than to apex; body usually slightly larger (2.7–3.2 mm) and dark brown to nearly black ..... ***X. bispinatus* Eichhoff** (p. 291)
- Each discal interstriae either glabrous or bearing a variable number of erect setae, if setae present, then these much more widely spaced in row and row not extending from base to declivity; major large tubercle in declivital interstriae 3 usually located closer to declivital base than to apex; body usually slightly smaller (2.2–2.9 mm) and lighter brown in color ..... ***X. ferrugineus* (Fabricius)** (p. 294)
- 5(3). Surface of declivity dull, minutely reticulate or rugose-reticulate ..... **6**
- Surface of declivity shining ..... **7**

- 6(5). Declivity sloping, gradually convex, occupying 30–40% of elytra length; declivital interstitial granules small, distinct; length 2.3–2.8 mm; widely distributed ..... ***X. affinis* Eichhoff** (p. 288)
- Declivity steeply convex, appearing slightly flattened, occupying 15% of elytra length; declivital interstitial granules minute; length usually slightly larger, 2.5–2.8 mm; Cuba (?), Guadeloupe (?), Puerto Rico (?) ..... ***X. xylographus* (Say)** (p. 305)
- 7(5). Elytral apex weakly to distinctly notched at suture, each elytron separately rounded at apex; length 1.8–2.3 mm, 3.1 times longer than wide ..... **8**
- Elytral apex evenly rounded, not notched at suture; length variable, usually greater than 2.1 mm (one species 1.8 mm), less than 3.0 times longer than wide ..... **9**
- 8(7). Elytral apex distinctly notched at suture, each elytron separately rounded; apex of each elytron subacutely elevated from suture to interstriae 3, with several tubercles; basal half of pronotum distinctly reticulate between punctures; Grenada, Saint Lucia ..... ***X. exilis* Schedl** (p. 293)
- Elytral apex narrowly rounded, sutural notch not evident to very obscurely indicated, each elytron conjointly rounded; apex rounded from suture to interstriae 3, tubercles very small; basal half of pronotum smooth, shining, very obscurely reticulate between punctures; widely distributed in Lesser Antilles ..... ***X. pseudotenius* Schedl** (p. 297)
- 9(7). In lateral view, profile of elytral declivity straight on lower half; black; length 2.5 mm; Cuba ...  
..... ***X. anthracinus* Bright, sp. nov.** (p. 290)
- In lateral view, profile of elytral declivity evenly convex; yellowish-or reddish-brown; length variable  
..... **10**
- 10(9). Length 3.5–3.6 mm, 2.3 times longer than wide; elytral declivity convex, each elytron with two moderate-sized tubercles in line with striae 1, a few smaller granules lateral to major tubercles; Puerto Rico ..... ***X. macer* Blandford** (p. 297)
- Length less than 3.4 mm; elytral declivity not as above ..... **11**
- 11(10). Length 1.8 mm; declivital interstriae 1, 2 and 3 not elevated, each with a median row of moderately large granules and a row of moderately long, narrowly flattened setae, these slightly longer than interstitial width; frons convex, densely reticulate, with moderately large, shallow punctures; Puerto Rico ..... ***X. advena* Bright, sp. nov.** (p. 288)
- Length more than 2.0 mm; other characters variable but not as above ..... **12**
- 12(11). Interstitial setae on posterior half of elytral disc and declivity longer than interstitial width, slightly flattened, narrowly scalelike; length 2.5 mm; Puerto Rico .....  
..... ***X. disjunctus* Bright, sp. nov.** (p. 292)
- Interstitial setae shorter, more hairlike; length 2.1–3.3 mm ..... **13**
- 13(12). Elytral declivity steeper, slightly transversely impressed below middle, with larger granules in interstriae 1 and 3, interstriae 2 with one similar granule at base; length 3.0–3.3 mm; Grenada .....  
..... ***X. geayi* Hagedorn** (p. 296)
- Elytral declivity more evenly convex to sloping, not transversely impressed before apex, with smaller granules in interstriae 1 and 3; length 2.3–2.7 mm ..... **14**
- 14(13). Elytral declivity distinctly, evenly convex, beginning on posterior one-fourth of elytra; Greater Antilles, in *Pinus* spp. .... ***X. pubescens* Zimmermann** (p. 298)
- Elytral declivity more sloping, beginning on posterior one-third of elytra; in numerous hosts throughout West Indies ..... ***X. volvulus* (Fabricius)** (p. 302)

***Xyleborus advena* Bright, sp. nov.**

Figure 210.

**Type Material.** HOLOTYPE (female) labeled: "PUERTO RICO, Cubuy, Canovanas, 18.275, 65.867, XI.15.2010" / "Multi-Funnel trap, alpha and Beta-Pinene+Sirex" / "HOLOTYPE *Xyleborus advena* D. E Bright 2016" (CNCI).

**Description (Female).** Length 1.8 mm, 2.7 times longer than wide; reddish-brown. Frons convex; surface dull, densely reticulate with moderately large, shallow punctures, these separated by a distance greater than their diameter. Antennal club as long as wide; posterior face solid, no sutures visible. Pronotum 1.1 times longer than wide; sides very slightly arcuate, anterior margin broadly rounded, unarmed; anterior slope with numerous, low asperities; posterior portion smooth, weakly shining, minutely reticulate, with scattered, very fine, weakly impressed fine punctures. Elytra 1.5 times longer than wide; sides parallel on basal two-thirds, broadly rounded behind; discal striae not impressed, punctured in even rows, punctures moderate in size, slightly impressed, each bearing a minute seta; discal interstriae smooth, shining, 2.0 times wider than striae, each bearing a median row of long, erect setae, these rows extend from base to apex. Declivity broadly convex; striae weakly impressed, punctures as on disc; all interstriae bearing a median row of small granules and narrowly flattened, erect setae; interstriae 7, similar to other interstriae.

**Male.** Unknown.

**Distribution.** This species is known from Puerto Rico.

**Etymology.** From *advena*, Latin for visitor or stranger.

**Comments.** One specimen of this species is known. It is very likely that the specimen represents an introduction and is likely established. This species was not collected during almost 10 years of collecting in Puerto Rico by Juan Torres (Bright and Torres 2006).

The female of this species is readily recognized by the evenly convex elytral declivity which bears a median row of small granules in each interstriae and a median row of moderately long setae in each elytral interstriae, each row extends from the elytral base to the elytral apex. These setae are narrowly flattened on the declivity. The posterior face of the antennal club is solid, without sutures.

***Xyleborus affinis* Eichhoff**

Figure 211.

*Xyleborus affinis* Eichhoff 1868a: 401; Wood and Bright 1992: 706; Bright and Skidmore 1997: 152; Bright and Skidmore 2002: 108; Bright 2014: 193.

*Xyleborus sacchari* Hopkins 1915a: 64 (Trinidad, Saint Vincent and the Grenadines).

**Description (Female).** Length 2.3–2.8 mm, 2.9 times longer than wide; yellowish-brown. Frons convex, usually faintly elevated between eyes; surface minutely reticulate, shining, punctures large, closely placed; vestiture sparse except along epistomal margin. Antennal club as long as wide. Pronotum 1.1 times longer than wide; sides parallel, anterior margin broadly rounded, unarmed; anterior slope with numerous, low asperities; posterior portion smooth, shining, sparsely punctured. Elytra 1.7 times longer than wide; sides parallel on basal two-thirds, broadly rounded behind; discal striae not impressed, punctures moderate in size, slightly impressed; discal interstriae smooth, shining, punctures small, sparse; vestiture consisting of moderately long interstitial setae and minute striae setae. Declivity broadly convex, sloping; surface dull, opaque; all interstriae with one to four small granules, these sharper on interstriae 1 and 3, sometimes absent on 2; interstriae 7 forming a low, sharp, lateral margin; vestiture as on disc except setae somewhat longer.

**Male.** Not present in material examined. See Bright (1968) or Wood (2007) for a description.

**Distribution.** This species is widespread throughout the tropical, subtropical and sub-temperate regions of the world.

**Specimens examined.** **ANTIGUA:** Christian Valley, blacklight trap, 26.IX.1991, FAO Insect Survey (1-SBPC). **BAHAMAS: Andros Island,** Atala Coppice, 6.VI.2004, BLT, M. C. Thomas (1-FSCA); Mennonite's Farm, crop-blacklight (1-CNCI); CDC Farm, Cricket Coppice, high interior coppice-Berlese (1-CNCI); Stafford Crk., Doc Woodside's Place, high coast coppice-blacklight (1-CNCI); Forfar Field Station, blacklight trap, 24 July 2008, R. Turnbow (1-RHTC); 2 mi S Forfar on Queen's Hwy, high interior coppice-blacklight (1-CNCI); Emily Johnson's Place, low coast coppice-blacklight (CNCI); Behring Pt., Behring Pt. Beach, beachdrift-Berlese (CNCI). **New Providence Island,** Carmichael area, 25°01'N, 77°25'W, 14 April 2007 / at blacklight in Caribbean pine forest and scrub, W. E. Steiner and J. M. Swearingen (17-USNM). **BARBADOS:** gully forest, 2 km NE Holetown, N13°11.9', W59°36.8', 150 m, 6.VI.06, forest uv lights, S. and J. Peck (1-SBPC); Turner's Hall Woods, 200 m, 5-23.VI.2007, forest flight intercept trap, S. and J. Peck (1-SBPC), same locality, 16-28. VIII.2005 (10-SBPC, CNCI); Welchmann Hall Gulley, 20-25.II.1979, S. and J. Peck, forest carrion trap (1-SBPC). **CAYMAN ISLANDS: Grand Cayman,** 1.XI.1992: Fitzgerald, blacklight trap (1-FSCA). **CUBA:** Santiago Province, 10 km NE Caney, Arroyo Grovert, 300 m, leaf and log litter, S. Peck, 95-93 (1-SBPC); Guantanamo Bay, Navy Base, Caravella Pt., 15.III.1973, S. Calhoun, blacklight trap (1-FSCA); Holguin Province, Parque Nacional La Mensura, mixed pine forest, 20.48275°N, 75.80745°W, 716 m, mercury vapor light, 10.V.2013, A. B. T. Smith, F. Cala-Riquelme (14-CMNO); Santiago de Cuba, Loma del Gato, 20.030, 76.036, 430 m, 24.VI.2014, F. Cala-Riquelme, litter montane forest (CMNO). **DOMINICA:** Saint Paul Parish, Springfield Plantation, blacklight trap, 23.VI.2004, R. Turnbow (1-RHTC); 2.5-3.5 km W. Freshwater Lake, Morne Tres Pilon N. P., 23.VI.2004, C. W. and L. B. O'Brien (4-CNCI); 1.1 km N. Pont Cassé, 1800', 19.VI.2004 (1-CNCI); Portsmouth, Cabrits National Park, 30 m, 2-13. VI.2004, trop. decide. forest / flight intercept trap, S. and J. Peck (5-SBPC, CNCI). **DOMINICAN REPUBLIC:** Azua, east side of crest, Sierra Martin Garcia, 7 km WNW of Barrero, 18.21N, 70.58W, 860 m, 25-26 July 1992 C. Young et al. (3-CMNH); Barahona, 7 km NW Paraiso, 200 m., rainforest remnant, 27.XI-4.XII.1991, intercept trap, Masner and Peck (8-CMNH); Dajabon, Mariano Cestero, 13.VIII.1980, 650 m, A. Norrbom (70-CMNH); Hato Mayor, Parc Los Haitises, 3 km W Cueva de Arena, 19.04N, 69.29W / 20 m, 7-9 July 1992, R. Davidson et al., mesic lowland forest (1-FMNH); Independencia, 32 km NW La Descubierta, Los Pinos, 487 m., thorn scrub forest, carrion trap, 26.XI-4.XII.1991, S. and J. Peck (1-CMNH); Independencia, 32 km NW La Descubierta, Sabana Real, 1800 m., cloud forest trail, sweeping, 26.XI.1991, Masner and Peck (1-CMNH); La Estrelleta, 2 km N of Rio Limpio, 14.VIII.1980, 700 m, A. Norrbom (2-CMNH); Pedernales, 26 km N Cabo Rojo, 565 m, evergreen dry forest, 29.XI-3.XII.1991, intercept, Masner and Peck (2-CMNH). **GRENADA:** Grand Etang Forest Reserve, N12°04.952', W61°42.162', 9-28.VIII.2010, 434 m and 360 m, rainforest flight intercept trap and nursery edge uv trap, S. Peck (3-SBPC); Lance aux Epines, Coral Cove, N11°59.57', W61°45.22', 10-28.VIII.2010, thorn shrub flight intercept trap, S. Peck (1-SBPC); Saint Andrew, Mirabeau Agriculture Laboratory, various dates in 1990, various collectors, light trap (30-SBPC, CNCI); Saint John Parish, Concord Falls, 20.II.1990, R. E. Woodruff, light trap (1-REWC). **GADELOUPE:** Plage de Sainte Claire, 6-9.V.1995, J. P. Roguet and E. Luyer, D. Poguet (2-CNCI); Basse-Terre: Rivière Sens, Sentier Houëlemont, N15°58.93, W61°42.62, 80 m, 19-31.V.2012, humid forest flight intercept trap, S. Peck (3-SBPC). **JAMAICA:** Bath, July 1967, W. Klopp (1-FSCA); Kingston, Kingston, 1920, ex pods of Locust tree, *Hymenaea courbaril*, A. H. Ritchie (3-NHML); Portland between Hardwar Gap and Green Hills, 1100 m, 21.VIII. 1980, A. Norrbom (1-CMNH); Portland, Port Antonio, 1-7 August 1966, E. C. Becker (3-CNCI); Saint Andrew Parish, Jack's Hill, Maya Campground, 22-31.VII.1985, C. B. and H. V. Weems Jr., G. B. Edwards, uv light (13-FSCA); Priestman's River, 6 January 1952, G. R. Proctor (1-IJCK); Saint Andrew, Halfway Tree, 5 February 1960, T. H. Farr (1-IJCK); Hardwar Gap, 4000', 6-31 July 1966, Howden and Becker (13-CNCI); Irish Town, 24-28 August 1966, Howden and Becker (68-CNCI); Saint James, Montego Bay, 1920, coconut trunk, A. H. Ritchie (2-NHML); Saint Mary, Boscobel, near Oracabessa, 2 May 1952, R. P. Bengry (1-IJCK); Tryall, 1920, ex leaves of coconut with bud rot, A. H. Ritchie (6-NHML). **MARTINIQUE:** 2 km NW Diamant, N14°9.4', W61°02.5', 8-23.VII.2010 / thorn forest flight intercept trap, 80 m, S. and J. Peck (1-SBPC); 1 km E Diamant, N14°29.4', W61°02.5', 7-23.VII.2010 / 10 m, thorn forest flight intercept trap, S. and J. Peck (15-SBPC, CNCI); 5 km N Ste-Luce, Foret Montravial, / 19-23.VII.2010, rainforest trap, 310 m, S. Peck (5-SBPC); 400 m, RF de Fond-Baron, Sous-bois / Piegue vitre, 02.VI.2006, J. Touroult (3-CNCI). **MONTSERRAT:** Cassava Ghaut, Beattie House, 16°45.91'N, 62°12.95'W, 23 MAR-03 APR 2002, 632 ft., A. Krakower, uv light (25-WIBF, CNCI); Cassava Ghaut, 21 MAY 2002, 877 ft., fogging at dawn, 16°45.75'N, 62°12.47'W, K. Marske and J. Boatwain (8-WIBF, CNCI); Hope Ghaut, 16°45.32'N, 62°12.63'W, 23 JULY 2005, 260 m, I. A. Foley (1-WIBF); Jack Boy Hill, 1677 ft., 16°45.77'N, 62°10.98'W, 10 JULY 2005 (1-WIBF); Jubilee Heights, 23 JAN 2003, K. A. Marske, ex leaf litter (1-WIBF); Woodlands, Riverside House, 16°45.99'N, 62°13.34'W, 1-17 AUG 2005, V. G. Martinson (1-WIBF). **NETHERLANDS ANTILLES: Saba,** Junction Bud's and Mt. Scenery trails, 17.63276°N, 63.23979°W, 687-700 m, 1Apr-1May 2008, Malaise, D. S. Sikes, et al. (1-WIBF); **Saba,** Ecolodge, Mt Scenery, 525 m, 17.62879°N, 63.23786°W, wet forest flight intercept trap and pitfall, 12-14 Mar 2008, D. S. Sikes (1-WIBF). **PUERTO RICO:** Adjuntas, 23.II.2011 / E. Abrea, ex: *Coffea arabica* (1-CNCI); Caribbean National Forest, El Yunque, 02 July 1979, M. A. Ivie (3-WIBF); Cayey, II.24.99 / *Eucalyptus robusta* log (CNCI), same locality and date / *Cecropia peltata* log

(1–CNCI), same locality and date / *Calophyllum brasiliensis* log (1–CNCI), same locality and date / *Ceiba penandra* (1–CNCI); El Yunque, Mt. Britton Trail, VIII-11-1999, C. W. O'Brien and P. Kovarik (1–CNCI); El Verde, V.1999, F. Pedrergos / ex: "Laurel blanco" (9–CNCI); Guaynabo, 4.XI.95, ex. light trap (1–CNCI), same locality except date 18.1.95 (CNCI), same locality, in *Spondias dulcis* log (1–CNCI); same locality, in live plants of *Cocos nucifera* (2–CNCI); Rio Grande, II.20.99 / in *Buchenaria cayitata* log (CNCI), same locality and date / in *Eugenia jamboa* log (1–CNCI); Rio Piedras, II.4.99 / *Micropholis garciniaefolia* log (1–CNCI), same locality, 12.II.99 / *Miconia prasina* log (1–CNCI); Rio Piedras, II.4.99 / *Barringtonia asiatica* log (CNCI); Sabana, V.1999, F. Pedrergos / ex: "Pomarrosa" (16–CNCI). **SAINT KITTS-NEVIS: Saint Kitts**, Island record only, Buckley, 17.3.09 (1–CNCI); Island record only, June 1912 (1–CNCI). **SAINT LUCIA: Barre de L'Isle Trail**, 13°93'N, 60°96'W, 3.VII.2009, 340 m / in dead fallen tree, D. E. Bright (5–CNCI); Mon Repos, 6.5 km W Fox Grove Inn, 10–28.VI.2007, submontane forest flight intercept trap, 300 m, S. and J. Peck (2–SBPC); 11 km W Dennergy, Barre de L'Isle Trail, 25.VII.2007 / uv light, S. and J. Peck (3–SBPC); Union Agricultural Sta., 11.IX.1986, Crop Protection Unit (1–FSCA); Mont LaCombe, 13.9209°N, 60.9592°W, 231 m, 23–28 June 2009, Malaise, C. A. Maier and M. L. Gimmel (2–WIBF); Piton Flore trap site, 532 m, 13.9646°N, 60.9448°W, 27 June-03 July 2009, uv light, C. A. Maier and M. L. Gimmel (1–WIBF), same locality, 3.VII.2009 / in broken branch, D. E. Bright (2–CNCI); Chassin trap site, 94 m, 13.9965°N, 60.9195°W, 11 May-04 June 2009, uv light, R. C. Winton and C. A. Naier (1–WIBF); River Doree trap site, flight intercept trap, 13.79939°N, 61.01811°W, 07–11 May 2009, 250 m, R. C. Winton and I. A. Foley (1–WIBF); Quilles For. Res., LaPorte cabin, 272 m, 13.84041°N, 60.97408°W, various dates in May 2009, uv light, R. C. Winton and I. A. Foley (5–WIBF); Micoud Dist., Escap Comm., 30 m, 13.8324°N, 60.8986°W, 30 Apr 2009, at light, I. A. Foley (2–WIBF). **SAINT VINCENT AND THE GRENADINES: Saint Vincent**, Emerald Valley Hotel, Buccament, 12–19.VI.2007, dry forest uv light, S. and J. Peck (3–SBPC); **Saint Vincent**, Vermont Nature Trail, 7 km E Buccament, 11.VI.2007, 370 m / rainforest flight intercept, S. and J. Peck (1–SBPC). **VIRGIN ISLANDS (British): Tortola**, Mt. Sage Nat. Park, N. side Mt. Sage, 1550 ft., 30 OCT-13 NOV 1992, M. Ivie, flight intercept trap #3 (1–WIBF). **VIRGIN ISLANDS (U. S.): Saint Croix**, Estate North Star, Jan. to Mar. 1993, 60 ft., flight intercept trap, 60 ft., J. Keularts (2–WIBF). **Saint John**, Garden Grove, 24 April 1980, blacklight, D. F. Keaveny (2–WIBF). **Saint Thomas**: Estata St. Peter, ca 1400 ft., 3–H-4 North Star, 04 JAN-30 JUN 1993, Carol Hayes, uv light (7–WIBF, CNCI).

**Records from literature. BAHAMAS: Andros Island**, Pigeon Cay (Turnbow and Thomas 2008). **CUBA**: El Retiro, Sierra Rangel: de Rio, March 26, 1939, J. C. Bradley (Schedl 1957 [as *Xyleborus mascarensis* Eichhoff]); San Vicente: de Rio, July 15, 1940, J. C. Bradley (Schedl 1957 [as *Xyleborus mascarensis* Eichhoff]). **DOMINICA**: La Plaine (Schedl 1949b) [as *Xyleborus mascarensis* Eichhoff]. **JAMAICA**: Cooper's Hill, Saint Andrew Parish, 2400 ft., Feb. 10, 1955, from leaf litter and red soil in thicket: F. Bellinger (Schedl 1957). **PUERTO RICO**: Rio Piedras, Feb. 9, 1940, in sugar cane, C. Perez (Schedl 1957 [as *Xyleborus mascarensis* Eichhoff]).

**Comments.** Females of this very common species may be easily recognized by the dull, opaque declivity in contrast to the shining elytral disc and by the small, acute granules on declivital interstriae 1 and 3.

This species occurs at low elevations on probably every island in the West Indies that has woody vegetation. Adults are commonly attracted to lights. It is one of three exceedingly common species of *Xyleborus* collected throughout the American tropics.

This species is known from a vast variety of woody plants. Schedl (1962) gives a complete list under the name *X. mascarensis*. North American records are given by Wood and Bright (1992), Bright (1968), Bright and Skidmore (1997 and 2002), Bright and Torres (2006), Vázquez et al. (2003) and Wood (2007).

### *Xyleborus anthracinus* Bright, sp. nov.

Figure 212.

**Type Material. HOLOTYPE** (female) labeled: "CUBA: Santiago Province, Dos Caminos, farm field, 20.18043°N, 75.77806°W, MV lights, 23.V.2013, A. B. T. Smith, A. Deler-Hermández" / "HOLOTYPE *Xyleborus anthracinus* D. E Bright 2016" (CMNO).

**Description (Female).** Length 2.5 mm, 2.8 times longer than wide; black. Frons convex, faintly impressed above epistomal margin, faintly elevated between eyes; surface minutely reticulate, shining, punctures moderate in size, deeply impressed; vestiture consisting of sparse, long, hairlike setae arising from each puncture, these more conspicuous along epistomal margin. Antennal club 1.2 times longer than wide. Pronotum 1.1 times longer than wide; sides slightly arcuate, anterior margin broadly rounded, unarmed; anterior slope with numerous, small asperities, surface between asperities dull, opaque; posterior and lateral portions smooth, moderately shining, punctures fine, widely separated. Elytra 1.8 times longer than wide; sides parallel on basal three-fourths, narrowly rounded behind; striae weakly but

distinctly impressed, punctures large, close, moderately impressed; interstriae convex, twice as wide as striae, punctures smaller, more shallowly impressed and less numerous than striae punctures; vestiture consisting of long, stout, interstitial setae and very fine, short, striae setae. Declivity sloping, interstriae 1 and 3 very slightly elevated; surface brightly shining; interstriae 1 and 3 each with two to four acute tubercles, these as long as a distance equal to width of interstriae; interstriae 4, 5 and 6 each with several smaller granules; striae punctures somewhat larger than on disc.

**Male.** Unknown.

**Distribution.** This species is known from Cuba.

**Etymology.** From *anthracinus*, Latin for black, referring to the color of the adult female.

**Comments.** One adult of this species was seen. It somewhat resembles adults of *Euwallacea beckeri* from Jamaica, but differs by the smaller size, by the very black color and by the more rounded postero-lateral margin of the declivity. A few other, very obscure, differences may be seen but these may be individual variation.

It is possible that this species should be moved into *Euwallacea*, along with *E. beckeri*, when more specimens are available for study.

### ***Xyleborus bispinatus* Eichhoff**

*Xyleborus bispinatus* Eichhoff 1868b: 146; Wood and Bright 1992: 739 (as synonym of *X. ferrugineus* (Fabricius)); Atkinson et al. 2013: 96–100; Bright 2014: 195.

**Description (Female).** Length 2.7–3.2 mm, 3.0 times longer than wide; dark brown to almost black. Frons convex, sometimes faintly transversely impressed above epistoma, weakly elevated in median area; surface dull, minutely reticulate, punctures widely scattered, sparse, faintly impressed; vestiture consisting of fine, hairlike setae arising from each puncture, these longer along epistomal margin. Antennal club 1.2 times longer than wide. Pronotum 1.2 times longer than wide; sides parallel to weakly arcuate, anterior margin broadly rounded, unarmed; anterior slope bearing numerous, low asperities; posterior and lateral areas smooth, shining or opaque, punctures small, very faint. Elytra 1.8 times longer than wide; sides parallel on basal three-fourths, broadly rounded behind; discal striae not impressed, punctures moderate in size, shallowly impressed; discal interstriae wider than striae, smooth, shining, each interstriae bearing a median row of erect setae, these longer than interstitial width and separated in row by a distance equal to length of setae, row extends from base to commencement of declivity. Declivity flattened, sloping; interstriae 2 slightly impressed below level of the slightly elevated interstriae 1 and 3, unarmed; interstriae 1 with a small granule at upper level at base; interstriae 3 with several small granules at upper level and one large, prominent tubercle at or near middle, sometimes appearing to be closer to base than to apex; interstriae 4, 5 and 6 bearing several small granules.

**Male.** Not available in material examined. Probably similar to male of *X. ferrugineus*.

**Distribution.** Because of the similarity of the adults of this species to those of *X. ferrugineus* and the resulting confusion in distinguishing the two taxa, the distribution of *X. bispinatus* is not clearly known. It is sympatric with *X. ferrugineus* in Mexico, Central America and central and northern South America (Kirkendall and Jordal 2006, Faccoli et al. 2016) and has been recently recorded from southern Florida (Atkinson et al. 2013) and the Cocos Island (Kirkendall and Jordal 2006). It has also been introduced into Italy (Faccoli et al. 2016). It has not been previously recognized from the West Indies but probably occurs throughout the region.

**Specimens examined. DOMINICA:** 1.1 km N Pont Casse, 1800', 6–21–2004, night, C. W. O'Brien (1–CNCD); Springfield Estate, Mt. Joy House, 31.V-16.VI.2004, 400 m / wet montane forest flight intercept trap, S. and J. Peck (11–SBPC); Springfield Estate, 330–361 m, 30.V-16.VI.2004, S. and J. Peck, mature second forest (2–SBPC); Middleham Falls Trail, Cochrane, 650 m, 31.V-11.VI.2004, forest flight intercept trap, S. and J. Peck (1–SBPC); Saint George Parish, 1.5–3.5 km W Freshwater Lake, 23 June 2004, R. Turnbow (1–RHTC). **DOMINICAN REPUBLIC:** Pr. Puerto Plata, top of Pico Isabel de Torres, nr. Teleferrico, 31 July 1999, at light, K. A. Guererro (2–

CNCI). **GRENADA:** Parish Saint Andrews, rd. end at Mt. Saint Catherine, 22.II.1999, blacklight trap, R. E. Woodruff, J. Telesford, A. Thomas (1–SBPC). **MARTINIQUE:** 5 km N Ste-Luce, / 19–23.VII.2010, rainforest trap, 310 m, S. Peck (4–SBPC, CNCI). **MONTSERRAT:** Big River, 1160 ft., 16°45.72N, 62°11.34W, 07–10 Aug. 2005, WIBF group, uv light (1–WIBF). **SAINT LUCIA:** Mon Repos, 6 km W, Fox Grove Inn, 10–28.VI.2007, submontane forest flight intercept trap, 300 m, S. and J. Peck (1–SBPC); Piton Flores, 532 m, 13°96'N, 60°94'W, 3.VII.2009 / in broken branch, D. E. Bright (1–CNCI); Piton Saint Esprit trap site, 571 m, 13.8493°N, 60.9795°W, 25–29 May 2009, flight intercept trap, R. C. Winton and C. A. Maier (1–WIBF). **SAINT VINCENT AND THE GRENADINES:** **Saint Vincent,** Hermitage Forest, E. of Spring Village, 15–27.VII.2006, forest edge flight intercept trap and Malaise trap, 348 m, S. and J. Peck (6–SPBC); **Saint Vincent,** Vermont Nature Trail, 7 km E Buccament, 11–20.VI.2007 / rainforest uv trap, S. and J. Peck (1–SBPC).

**Comments.** Females of this species are almost identical to those of *X. ferrugineus* and distinguishing the two species may be difficult, if not impossible. According to Kirkendall and Jordal (2006), females of *X. bispinatus* may be recognized by the presence of a median row of erect setae in each declivital interstriae, this row extends from the base of the elytra to the declivity and each seta in the row is separated by a distance as long as or longer than adjacent setae. In addition, the large tubercle in declivital interstriae 3 is usually located closer to the declivital base than to the elytral apex. However, both of these characters are variable and are not generally distinctive. Also, according to Kirkendall and Jordal (2006), specimens of *X. bispinatus* should be larger and darker in color than those of *X. ferrugineus* but these characters are also variable and must be used in combination with the characters listed above.

This species name has been in synonymy under *X. ferrugineus* since having been placed there by Schedl in 1960. Kirkendall and Jordal (2006), in a study of the fauna of the Cocos Island (Costa Rica), reinstated the species name, stating that the commonly recognized species, *X. ferrugineus*, actually comprises two species. Both species have a large tubercle in the middle of the declivity in interstriae 3. The larger, darker specimens were designated *X. bispinatus* and the smaller, lighter brown specimens were designated *X. ferrugineus*. Atkinson et al. (2013) recorded *X. bispinatus* from southern Florida and provided illustrations and comments to distinguish the two species.

More than 500 specimens of “*X. ferrugineus*” from almost all islands in the West Indies were examined in an attempt to determine if *X. bispinatus* was present in the region. Thirty specimens were found that possibly could be considered *X. bispinatus* according to the characters discussed by Kirkendall and Jordal (2006) (see comments above). All these specimens bear a row of erect setae in each discal interstriae which extends from the elytral base to the declivity; all specimens range in length from 2.7–3.2 mm and all are dark brown to black. The position of the large tubercle on declivital interstriae 3 was deemed too variable to be used to distinguish species. Numerous additional specimens, including a large series from Curaçao identified as *X. ferrugineus*, were examined that had a similar row of interstitial setae but these specimens were smaller, 2.5 mm in length and were light reddish-brown. Many, if not most, female specimens of *X. ferrugineus* observed have a row of setae in most, and sometimes, all of the discal interstriae, especially in the lateral interstriae. The two taxons are completely sympatric with both forms occurring in exactly the same localities, collected on the same date and in the same habitats. A recent paper by Pérez et al. (2015) provides illustrations of both taxa and a paper by Faccoli et al. (2016) illustrates features of *X. bispinatus*.

In summary, I strongly doubt that *X. bispinatus* will remain a distinct species when detailed studies of the interspecific variability within *X. ferrugineus* is conducted, especially when the breeding system of *Xyleborus* is considered and the amount of individual variation is better understood. Gohli et al. (2016) provides genetic data concerning both species, but questions remain. For the present, I have maintained *X. bispinatus* as a species in this review while recognizing that its status is questionable and the placement may change in the future.

***Xyleborus disjunctus* Bright, sp. nov.**

Figure 214.

**Type Material.** **HOLOTYPE** (female) labeled: “**PUERTO RICO**, Carite Saint For., at uv light, VII.28.1999, C. W. O’Brien: Kovarik” / “**HOLOTYPE** *Xyleborus disjunctus* D. E Bright 2016” (CNCI).

**Description (Female).** Length 2.5 mm, 2.9 times longer than wide; dark reddish-brown. Frons convex, faintly, narrowly impressed over epistoma; faintly longitudinally elevated from epistoma to upper eye level; surface minutely reticulate, moderately shining, punctures large, shallow and widely placed. Pronotum 1.2 times longer than wide; sides straight, parallel on posterior half, anterior margin broadly rounded, unarmed; anterior slope bearing numerous, small asperities, surface between asperities smooth, brightly shining; posterior half shining, punctures very small, widely separated and barely visible. Elytra 1.7 times longer than wide; sides parallel on basal three-fourths, narrowly rounded behind; discal striae weakly impressed, punctures shallow, close, moderate in size; interstriae smooth, shining, weakly convex, each interstriae with a median row of small punctures and a median row of erect, coarse setae, these longer than interstitial width. Declivity commencing at posterior two-thirds of elytra length, convex, surface shining; striae weakly impressed, obscure, punctures a little larger than on disc; interstriae 2 weakly impressed below level of 1 and 3; interstriae 1 and 3 weakly elevated, each with a median row of small, acute, equal-sized granules; vestiture consisting of a median row of long, coarse, slightly flattened setae in each interstriae, these longer than interstitial width; interstriae 7 bearing several, small granules.

**Male.** Unknown.

**Distribution.** This species is known from Puerto Rico.

**Etymology.** From *disjunctus*, Latin for separate, distinct or different.

**Comments.** Females of this species may be most easily recognized by the presence of long, coarse, narrowly scalelike setae in each discal and declivital interstriae and by the presence of small granules in declivital interstriae 1 and 3.

### ***Xyleborus exilis* Schedl**

Figures 470, 540.

*Xyleborus exilis* Schedl 1934: 209.

*Coptoborus exilis*: Wood and Bright 1992: 664; Bright 2014: 165.

**Description (Female).** Length 1.8–2.3 mm, 3.1–3.2 times longer than wide; light brown. Frons convex, surface dull, usually with a small, median, smooth, shining spot or longitudinal space, remaining surface densely minutely reticulate, punctures obscure or absent. Antennal club 1.1 times longer than wide, basal segment occupies slightly less than half of length. Pronotum 1.2 times longer than wide; sides parallel on basal two-thirds, anterior margin broadly rounded, unarmed to very weakly subserrate (almost undulating); anterior slope with numerous, low asperities; posterior surface smooth, dull, densely minutely reticulate, with widely scattered, small, impressed fine punctures. Elytra 1.9 times longer than wide; sides weakly arcuate on basal three-quarters, strongly converging to narrowly rounded apex; sutural notch distinct; discal striae not impressed, punctured in regular rows, punctures generally large, obscurely impressed; discal interstriae as wide as striae or slightly wider, surface smooth, shining, each with a median row of long, fine setae, extending from base to apex, sometimes abraded on discal surface. Declivity beginning on posterior third of elytra, gradually convex, sloping to apex; striae 1, 2 and 3 slightly impressed, punctures same size as those on disc; interstriae 1 and 3 weakly convex, each with a median row of two or three small granules, often a larger granule is present at middle of interstriae 3, sometimes one or two smaller granules are present in interstriae 2; apex of each elytron weakly elevated from suture to interstriae 3, bearing a few larger granules; each interstriae with a median row of setae.

**Male.** Unknown.

**Distribution.** This species occurs from in Central America from Costa Rica to Panama and in the West Indies from Grenada and Saint Lucia.

**Specimens examined.** **GRENADA:** Saint Andrew, Mirabeau Agriculture Laboratory, various dates in 1990, various collectors, light traps (23–SBPC, CNCI). **SAINT LUCIA:** Barre de L'Isle, 13.93682°N, 60.95936°W, 340 m, 25–28 June 2009, uv light trap, E. A. Ivie (1–WIBF), same locality, 29 June–03 July 2009, uv light trap, C. A. Maier,

M. L. Gimmel (3–WIBF, CNCI); Millet Dam, 13.90013°N, 60.98921°W, 07 July 2009, C. Maier, K. J. Hopp, E. A. Ivie, mercury vapor lamp (2–WIBF, CNCI).

**Comments.** Wood (1982) and Wood and Bright (1992) place *X. exilis* Schedl as a probable synonym of *X. pseudotenuis* Schedl. Wood (2007) recognized *X. exilis* (in *Coptoborus*) as distinct after comparing specimens to the type. My specimens were compared to the holotypes of both *X. exilis* and *X. pseudotenuis* and there are minute, but distinct, differences in the specimens. Both species are herein recognized as distinct.

Females may be recognized by the slender body, by the gradually sloping posterior third of the elytra, by the minute granules on the declivital interstriae 1 and 3, by the weakly rounded apex of each elytron with a few slightly larger granules and by the very weak (or absent) sutural notch. This latter character may be very poorly developed and the notch may be obscure.

### *Xyleborus ferrugineus* (Fabricius)

Figure 215.

*Bostrichus ferrugineus* Fabricius 1801: 388.

*Xyleborus ferrugineus*: Wood and Bright 1992: 735; Bright and Skidmore 1997: 158; Bright and Skidmore 2002: 113; Bright 2014: 198.

*Xyleborus amplicollis* Eichhoff 1869: 280 (Puerto Rico).

*Xyleborus notatus* Eggers 1941: 107 (Guadeloupe).

**Description (Female).** Length 2.2–2.9 mm, 2.8 times longer than wide; reddish-brown. Frons convex, faintly transversely elevated in median area; surface minutely reticulate, punctures widely scattered, sparse, faintly impressed; vestiture consisting of fine, hairlike setae arising from each puncture, longer along epistomal margin. Antennal club 1.2 times longer than wide. Pronotum 1.2 times longer than wide; sides parallel to weakly arcuate, anterior margin broadly rounded, unarmed; anterior slope bearing numerous, low asperities; posterior and lateral areas smooth, shining or opaque, punctures small, very faint. Elytra 1.8 times longer than wide; sides parallel on basal three-fourths, broadly rounded behind; striae not impressed, punctures moderate in size, shallowly impressed; interstriae wider than striae, smooth, shining, sparsely punctured; vestiture consisting of scattered, erect, hairlike, interstitial setae. Declivity flattened, sloping; interstriae 2 slightly impressed below level of the slightly elevated interstriae 1 and 3, unarmed; interstriae 1 with one small granule at upper level; interstriae 3 with several small granules at upper level and one large, prominent tubercle in middle; interstriae 4, 5 and 6 bearing several small granules.

**Male.** Not available in material examined. See Bright (1968) for a description.

**Distribution.** This species is widespread throughout the tropical, subtropical and sub-temperate regions of the world.

**Specimens examined.** **ANTIGUA:** Christian Valley, 12–13.X.1991, 19.VIII.1991, 8.V.1991, FAO Insect Survey, blacklight trap (5–FSCA); Antigua, 14.VII.1989, R. M. Baranowski, blacklight trap (1–FSCA). **BAHAMAS:** **Andros Island,** Atala Coppice, blacklight trap, 8.VI.2004, R. Turnbow (1–RHTC); Mastic Point, blacklight trap, 9.VI.2004, R. Turnbow (1–RHTC); Forfar Field Station, nr Stafford Creek, 9.VI.2004, M. C. Thomas (2–FSCA); Forfar Field Stn., nr Stafford Creek, 22–28.VII.2006, M. C. Thomas, T. R. Smith, uv trap in coastal coppice (2–FSCA). **BARBADOS:** gully forest, 2 km NE Holetown, N13°11.9', W59°36.8', 150 m, 6.VI.06, forest uv lights, S. and J. Peck (1–SBPC); Turner's Hall Woods, 200 m, 16–28.VIII.05, forest flight intercept trap, S. and J. Peck (27–SBPC, CNCI); Welchmann Hall Gully, 26.V.2006, forest litter, 270 m, S. and J. Peck (2–SBPC). **CAYMAN ISLANDS:** **Grand Cayman,** 3 km W Colliers, 19°21'N, 81°07'W, 21 February 1993 / at blacklight in cut-over forest near ponds, W. E. Steiner and J. W. Swearingen (4–USNM); 1.5 km S Hutland, 19°20'N, 81°13'W, 18 February 1993 / at blacklight in forest near mangrove, W. E. Steiner and J. W. Swearingen (2–USNM); Mastic Trail, flight intercept trap, 20–29 May 2009, R. Turnbow (1–RHTC); **Cayman Brac,** Major Donald Dr., 4 km E jct Ashton Reid Dr., blacklight trap, 22 May 2009, Thomas, Turnbow and Ball (1–FSCA); **Little Cayman,** .3 km SE Spot Bay, blacklight trap, 26 May 2009, Thomas, Turnbow and Bell (2–FSCA). **CUBA:** Cienfuegos Province, Jardín Botánico de Cienfuegos, 22.12179°N, 80.32646°W, 73 m, mercury vapor light, 21.V.2013, A. B. T. Smith, F. Cala-Riquelme, A. Deler-Hernández (4–CMNO); Santiago Province, Santiago, Jardín Botánico, 5–17.XII.95, 5 m., disturbed forest flight intercept trap, S.

Peck, 95–74 (10–SBPC); Santiago Province, 16 km NE Caney, 200 m., 13.XII.95, fermenting tree trunk in coffee, S. Peck, 95–94 (4–SBPC); Santiago Province, Gran Piedra, Segundo Chorrito, 7–17.XII.95, 600 m, km 8, forest stream flight intercept trap, S. Peck, 95–83 (6–SBPC). **DOMINICA:** Boiling Lake Trailhead, 12.VI.2004, leaf, stick, tree-fern litter, S. and J. Peck (1–SBPC); Saint John Parish, Cabrits National Park, blacklight trap, 28 June 2004, R. Turnbow (14–RHTC, CNCI); Saint Paul Par., Springfield Plantation, blacklight trap, 23.VI.2004, R. Turnbow (6–RHTC); Trafalgar Falls Trail, 25.VI.2004, C. W. and L. B. O'Brien (1–CNCI); 1.1 km N. Pont Cassé, 1800', night, 21.VI.2004, C. W. O'Brien (1–CNCI); Cochrane, West of Morne Macaque, 15°20.852N 61°20.698W, 26.IV.2006, 2,300 ft., Z. Prusak (1–FSCA); Springfield Estate, Mt. Joy House, 31.V-16.VI.2004, 400 m / wet montane forest flight intercept trap, S. and J. Peck (13–SBPC, CNCI). **DOMINICAN REPUBLIC:** Barahona, Barahona, uv trap, 8–29–30.1997, R. Baranowski and C. W. O'Brien (5–CNCI); Pedernales, 4 km W Oviedo, 10 m., arid thorn forest, 28.XI-4.XII.1991, intercept trap, Masner and Peck (12–CMNH, CNCI); Barahona, 7 km NW Paraiso, 200 m., rainforest remnant, 27.XI-4.XII.1991, intercept, Masner and Peck (4–CMNH); Sierra Prieta, Santo Domingo Province, 18°38.974'N, 69°58.408' W, 06.VIII.2011, D. Rerez, B. Hierro, R. Bastardo (2–USNM); Independencia Province, Isla Cabritos, Lage Enroquillo, 11/VI/2011, S. Madrano (1–USNM). **GRENADA:** Saint Andrew, Mirabeau Agriculture Laboratory, various dates and collectors in 1990, light traps (12–SBPC); Saint George Parish, Grand Anse, 21–25.V.1992, H. V. and R. M. Baranowski, blacklight trap (1–FSCA); Saint Georges, Ministry of Agriculture Botanic Gardens, 6.II.1990, A. Thomas, light trap (1–CNCI); Pedernales Province, Km. 1 Trail Fondo Paradi, 3 km S Oliedo, 17°49.085'W, 71°26.336 W, 120 m, 27/VIII/2011, D. Perez, S. Medrano, A. Hilario (6–USNM). **GUADELOUPE:** Basse-Terre: Pigeon, Chalet Sou-le-Vent, N16°09.05, W61°45.97, 170 m, hotel yard uv traps, 13.V.2012, S. Peck (6–SBPC); Trois-Rivières, 8.VII.1995, J. P. Roguet and E. Luver (3–CNCI); Pointe-à-Pitre, Morne Jolivièr, 12–31.VII.1999, D. Roguet (4–CNCI); Basse-Terre: Rivière Sens, Sentier Houëlemont, N15°58.93, W61°42.62, 80 m, 19–31.V.2012, humid forest flight intercept trap, S. Peck (1–SBPC). **HAITI:** Manville, Feb. 6–10, 1922 (3–AMNH). **JAMAICA:** Westmoreland Parish, Negril Beach, 3.IV.1998, B. L. Valentine (1–CNCI); Kingston Parish, Kingston, 1 July 1966, H. F. Howden (1–CNCI); Kingston Gardens, 23 August 1952, G. R. Proctor (2–IJCK); Portland Parish, Port Antonio, 1–7 August 1966, E. C. Becker (1–CNCI); Saint Andrew Parish, Beverly Hills, August to September, 1961, R. P. Bengry (5–IJCK); Ferry, 9 February 1952, C. Stampf (2–IJCK); Hardwar Gap, 9–29 July 1966, Howden and Becker (2–CNCI); Irish Town, 27–28 August 1966, Howden and Becker (7–CNCI); Saint Ann Parish, Saint Arms Bay, 24–26 December 1953, G. R. Proctor (1–IJCK); Meadowbrook, March–April 1960, A. M. Wiles (8–IJCK); Saint James Parish, Montego Bay, 1920, ex coconut trunk, A. H. Ritchie (6–NHML); Saint Mary Parish, Tryall, 1920, ex heart leaves of coconut with bud rot, A. H. Ritchie (5–NHML); Trelawny Parish, Duncans, 1–23 August 1966, Howden and Becker (63–CNCI); Good Hope, 11–17 August 1966, Howden and Becker (31–CNCI); Saint Andrew Parish, Hardwar Gap, 2–3.VIII.1985, C. B. and H. V. Weems Jr., G. B. Edwards (1–FSCA); Saint Andrew Parish, Jack's Hill, Maya Campground, 22–31.VII.1985, C. B. and H. V. Weems Jr., G. B. Edwards, uv light (2–FSCA). **MARTINIQUE:** 2 km NW Diamant, N14°29.4', W61°02.5', 8–23.VII.2010 / 80 m, thorn forest flight intercept trap, 80 m, S. and J. Peck (2–SBPC); 1 km E Diamant, N14°9.4', W61°02.5', 7–23.VII.2010 / 10 m, thorn forest flight intercept trap, S. and J. Peck (6–SBPC); 5 km N Ste-Luce, / 19–23.VII.2010, rainforest trap, 310 m, S. Peck (1–SBPC); RF de Fond-Baron, 400 m., 02.VI.2006 / en sous bois, J. Touroult (1–CNCI); Réserve Piton Carbet, RF de Fond-Baron, 5.II.2007, J. Touroult (3–CNCI). **MONTSERRAT:** Cassava Ghaut, Beattie House, 632 ft., 16°45.91'N, 62°12.95'W, various dates in 2002 and 2003, M. A. Ivie or A. Krakower, uv light (100–WIBF, CNCI); Dyers, 17.IV.1993: Jeffers, blacklight trap (2–FSCA); Hope Ghaut, 16°45.347'N, 62°12.58'W, various dates and collectors in 2002 to 2005 (11–WIBF, CNCI); Gun Hill, 16°45.56'N, 62°12.63'W, various dates in 2002, K. A. Marske (6–WIBF). **NAVASSA ISLAND:** E. end of east savanna, 65 m, 18°23.75'N, 75°00.52'W, 1 August 1998, W. E. Steiner and J. W. Swearingen (6–USNM), near lighthouse, 80 m, same dates and collectors (16–USNM), central forest area, same dates and collectors (3–USNM). **NETHERLANDS ANTILLES: Curaçao,** Weg Naar, Playa Kanoa, 12°9'37.82"N, 68°52'49.13"W, 10.XI.2014, M. C. Thomas, blacklight trap (9–FSCA), same locality, R. Turnbow (9–RHTC); Playa Santa Cruz Rd., 12°18'19"N, 68°08'26"W, blacklight, 16 Nov 2014, R. Turnbow (2–RHTC); Piscadera Baal, 12°07'29"N, 68°58'03"W, 11 Nov 2014, R. Turnbow (1–RHTC); Christoffel N. P., Copper Mine, 12°9–20'10.68"N, 69°6'27.90"W, 7.XI.2014, M. C. Thomas (1–FSCA). **Saba,** Mt. Scenery Trail at 770–817m, 17.63431°N, 63.23852°W, broadleaf dense canopy flight intercept trap and pitfalls, 11–14 Mar 2008, D. S. Sikes (1–WIBF); Ecolodge on Mt. Scenery, 17.62879°N, 63.23785°W, 525 m, 01 Apr-1 May 2008, D. S. Sikes, J. Slowik, flight intercept trap w/pitfall (1–WIBF); Windward side, 23–26.VIII.1993, R. M. and H. V. Baranowski, blacklight trap (1–CNCI). **PUERTO RICO:** Caribbean N. F., El Berde Field Sta., blacklight trap, 27 May 1994 (1–RHTC); Cayey, 24.II.99 / *Eucalyptus robusta* log (CNCI), same locality, 24.II.99 / in *Cecropia pellata* log (CNCI); Guaynabo, 14.II.99 / in *Melicoccus bijugatus* log (CNCI); Rio Grande, 17.II.99 / in *Tabebuia heterophylla* log (CNCI), same locality and date / in *Dacryodes excelsa* log (CNCI), same locality, 12.II.99 / in *Miconia prasina* log (CNCI), same locality, 17.II.99 / in *Micropholis garciniaefolia* log (CNCI), same locality and date / in *Hymenaea courbavil* log (CNCI), same locality, 20.II.99 / in *Dendropanax arboreus* log (CNCI); Rio Piedras, 4.II.99 / in *Barringtonia asiatica* dead tree (CNCI); Maricao Forest, 890 m, 28–30.VII.2004, G. Nearns, beating (1–FSCA). **SAINT KITTS-NEVIS: Nevis,** Cotton Ground Village, 24.III-2.IV.1993, B. Brady, blacklight trap (1–FSCA); Butler Village, 16.X.1992, blacklight trap, B. Bradley (3–FSCA). **SAINT LUCIA:** Anse La Raye, Anse Galet, 1 km SSW Anse La Raye, 13.56N, 61.03W, 50 m / 21–30 June 1991, J. E. Rawlins, S. A.

Thompson (9-FMNH); 11 km W Denney, Barré de L'Isle Trail, 25.VII.2007, S. and J. Peck (5-SBPC, CNCI); nr. Micoud, trail towards Fond Bay, 13°49'48"N, 60°53'42"W, 15 m, A. R. Cline and S. D. Gaimari, various dates in 2009, ex blacklight traps (24-WIBF, CNCI); Marigot Bay, 22.VIII.1998, M. Paul, blacklight (1-FSCA); Millet Forest Trail, 13°90'N, 60°99'W, 10.VII.2009 / ex: large fallen tree, D. E. Bright (6-CNCI); Piton Flores, 532 m, 13°96'N, 60°94'W, 3.VII.2009 / in broken branches, D. E. Bright (2-CNCI); La Porte Forest Trail, 13°84'N, 60°97'W, 11.VII.2009 / in dead fallen tree, D. E. Bright (1-CNCI); numerous additional specimens from Mont LeCombe, Chassin trap site, Quielles Forest Reserve (LaPorte Cabin), Grande Anse trap site, Edmund Forest Reserve trap site, all 2009, various collectors (WIBF, CNCI). **SAINT VINCENT AND THE GRENADINES: Berquia Island**, Cinnamon Garden, W13°36', N61°14' / dry shrub woodlands uv light, 3.III.2008, S. Peck and M. de Silva (2-CNCI). **Canouan Island**, Mahaut Bay, W21°43', N61°19', 7.VIII.2008 / dry shrub woodland uv light, 100 m, S. Peck and M. de Silva (2-SBPC). **Saint Vincent**, Hermitage Forest, E of Spring Village, 15–27.VIII.2006, forest edge flight intercept trap and Malaise trap, 348 m, S. and J. Peck (26-SBPC); Wallilabou Bay, hotel grounds, 18.VIII.2006, coastal uv, S. and J. Peck (1-SBPC). **VIRGIN ISLANDS (BRITISH): Guana Island**, 18.X.'00 or 22–28.X.'01, B. and B. Valentine, Berlase or Lindgren funnel (2-CNCI). **VIRGIN ISLANDS (U. S.): Buck Island**, Buck Island Reef N. M., 01–31 March 1993, flight intercept, 340 ft., Z. Hillis (5-WIBF). **Saint Croix**, Sprat Hall, various dates in 1981 and 1982, J. A. Yntema, at light (3-WIBF). **Saint John**, Estate Carolina, various dates 1982, W. B. Muchmore, at light (40-WIBF, CNCI). **Saint Thomas**, Megen's Bay Bot. Gard., 2.IV.1993, blacklight trap, R. E. Woodruff (2-REWC).

**Record from literature. BAHAMAS: Andros Island**, Pigeon Cay (Turnbow and Thomas 2008).

**Comments.** This species is one of the most common species of bark beetles in the West Indies and is definitely the most common species of *Xyleborus*. It occurs on all West Indies islands, mostly at low elevations, but could be found at all elevations.

Females may be readily distinguished from those of other West Indian *Xyleborus*, except *X. bispinatus*, by the flattened, sometimes slightly sulcate, elytral declivity which has one large granule in the middle of interstriae 3 and several smaller granules at the upper margin of the declivity in interstriae 1 and 3. See the comments under *X. bispinatus*.

Besides the many host plants listed above, this species was recorded on diseased coconut palms (*Cocos*) in Puerto Rico (Maramorosch et al. 1972) and from *Erythrina* and *Persea* by Vázquez et al. (2003) in Cuba.

### *Xyleborus geayi* Hagedorn

Figure 216.

*Xyleborus geayi* Hagedorn 1905: 413; Wood and Bright 1992: 740; Bright 2014: 199.

**Description (Female).** Length 3.0–3.3 mm, 3.0 times longer than wide; dark reddish-black to black. Frons convex, with a slightly elevated, variable, median, longitudinal elevation; surface shining, minutely reticulate, with moderately large, deep, widely separated punctures and a few, long, fine setae. Pronotum 1.1 times longer than wide, widest at middle; sides broadly arcuate; anterior margin broadly rounded, unarmed; anterior slope with numerous, distinctly elevated asperities; posterior portion smooth, shining, with widely separated, weakly impressed, fine punctures. Elytra 1.5–1.6 times longer than wide; sides weakly arcuate to parallel on basal 2/3rds, apex narrowly rounded; discal striae punctured in slightly irregular rows, punctures moderately small, weakly impressed, each with a minute seta shorter than puncture diameter; discal interstriae 3.0 times wider than striae, smooth, shining, each with a median row of small granules just before declivital base and each with a median row of erect, fine setae extending from elytral base to declivital base. Declivity steep, slightly convex, weakly, transversely impressed near middle between each interstriae 3; striae punctures slightly larger than those on disc; interstriae 1 bearing two to four small tubercles; interstriae 2 unarmed except for one or two small tubercles at base; interstriae 3 slightly elevated, with several small tubercles, with a larger tubercle at middle.

**Male.** Unknown.

**Distribution.** This species is known from Costa Rica to Colombia, Surinam and Brazil (Wood 2007) and in the West Indies from Grenada.

**Specimens examined. GRENADA:** Grand Etang Forest Reserve, N12°04.62', W61°42.16', 10–28.VIII.2010, 400 m, rainforest flight intercept trap, S. Peck (12-SBPC, CNCI).

**Comments.** Females of this species may be recognized by the steeply convex elytral declivity which is very slightly transversely impressed at the middle and which bears several small tubercles in interstriae 1 and 3 and a slightly larger tubercle in the middle of interstriae 3 and by the larger size. Females are vaguely similar to those of *X. ferrugineus* but the declivity of *X. geayi* is distinctly different and the females of *X. geayi* are larger and darker in color.

***Xyleborus macer* Blandford**

Figure 217.

*Xyleborus macer* Blandford 1898: 218; Wood and Bright 1992: 748; Bright and Skidmore 1997: 160; Bright 2014: 201.

**Description (Female).** Length 3.5–3.6 mm, 3.6 times longer than wide; reddish-brown. Frons convex; surface dull, minutely reticulate, impunctate, with scattered, very small, shining granules; vestiture consisting of fine, hairlike setae along epistomal margin only. Antennal club 1.1 times wider than long. Pronotum 1.3 times longer than wide, very slightly wider on anterior one-fourth just behind anterior margin; sides straight, very slightly converging to base, anterior margin broadly rounded, unarmed; anterior slope bearing numerous, low asperities; posterior areas smooth, shining, punctures small, very faint. Elytra 2.0 times longer than wide; sides parallel on basal three-fourths, narrowly rounded behind; discal striae very faintly impressed, punctures small, shallowly impressed; discal interstriae 2.0 times wider than striae, smooth, shining, impunctate, glabrous. Declivity steeply convex, very slightly flattened in central portion; striae faintly punctured; interstriae 1 slightly widened, bearing two moderately large tubercles in central area, these appearing to arise on striae 1 and a smaller granule at base; remaining interstriae with smaller, scattered granules.

**Male.** Unknown.

**Distribution.** This species is known from southern Mexico to Colombia and Venezuela and in the West Indies from Puerto Rico.

**Specimen examined. PUERTO RICO:** Almirante, November 5, 1952, F. L. Blanton (1–USNM).

**Comments.** Females of this species may be easily recognized by their elongate shape and by the four prominent tubercles on the elytral declivity.

***Xyleborus pseudotenuis* Schedl**

*Xyleborus pseudotenuis* Schedl 1936: 109.

*Coptoborus pseudotenuis*: Wood and Bright 1992: 664; Bright 2014: 165.

**Description (Female).** Very similar to *X. exilis*. Differs by posterior surface of pronotum smooth, shining and very obscurely subreticulate between punctures; apex of elytra not notched at suture and apical tubercles very small; declivity beginning on posterior third of elytra, more steeply convex to apex; striae 1, 2 and 3 slightly impressed, punctures same size as those on disc; interstriae 1 and 3 weakly convex, each with a median row of small granules, a few larger granules scattered near apex and laterally; apex of each elytron rounded from suture to interstriae 3.

**Male.** Unknown.

**Distribution.** This species occurs from southern Mexico to Colombia and Venezuela and in the West Indies.

**Specimens examined. DOMINICA:** Springfield Estate, 31.V-16.VI.04, N15°20.841', W61°22.000', 550 m, ridge top forest above Mt. Joy, flight intercept trap, S. and J. Peck (1–SBPC). **GRENADA:** Saint Andrew, Mirabeau Agriculture Laboratory, 4.XII.1990, A. Thomas, light trap (1–SBPC). **GADELOUPE:** Basse-Terre: Pigeon Trace, Poirier, N16°08.83, W61°45.22 / humid forest flight intercept trap, 350 m, 14–31. V.2012, S. Peck (1–SBPC). **MARTINIQUE:** 4 mi. SW Le Marin, Morne Aca, 260 m, N14°27.8, W60°53.9 / humid forest hilltop clearing flight intercept trap, 13–28.VI.2012 (1–SBPC). **SAINT LUCIA:** Millet Forest Trail, 13°90'N, 60°99'W, 10.VII.2009 / ex

large fallen tree, D. E. Bright (4–CNCI). **SAINT VINCENT AND THE GRENADINES:** **Saint Vincent**, Emerald Valley Hotel, Buccament, 10–20.VI.2007 / flight intercept trap, 30 m, S. and J. Peck (1–SBPC); **Saint Vincent**, Vermont Nature Trail, 7 km E. Buccament, 11.VI.2007, 370 m / rainforest flight intercept trap, S. and J. Peck (1–SBPC).

**Comments.** Wood (1982) and Wood and Bright (1992) place *X. exilis* Schedl as a probable synonym of *X. pseudotenuis*. Wood (2007) recognized *X. exilis* (in *Coptoborus*) as distinct after comparing specimens to the type. My specimens were compared to the holotypes of both *X. exilis* and *X. pseudotenuis* and there are minute differences in the specimens. Specimens of *X. pseudotenuis* are slightly smaller than those of *X. exilis* and is therefore used herein as the name of this species.

Females may be recognized by the slender body, by the gradually sloping posterior third of the elytra, by the minute granules on the declivital interstriae 1 and 3, by the weakly rounded apex of each elytron with a few slightly larger granules and by the very weak (or absent) sutural notch. This latter character may be very poorly developed and the notch may be obscure.

### *Xyleborus pubescens* Zimmermann

Figures 218, 219.

*Xyleborus pubescens* Zimmermann, 1868: 145; Wood and Bright 1992: 766; Bright and Skidmore 1997: 163; Bright and Skidmore 2002: 117; Bright 2014: 205.

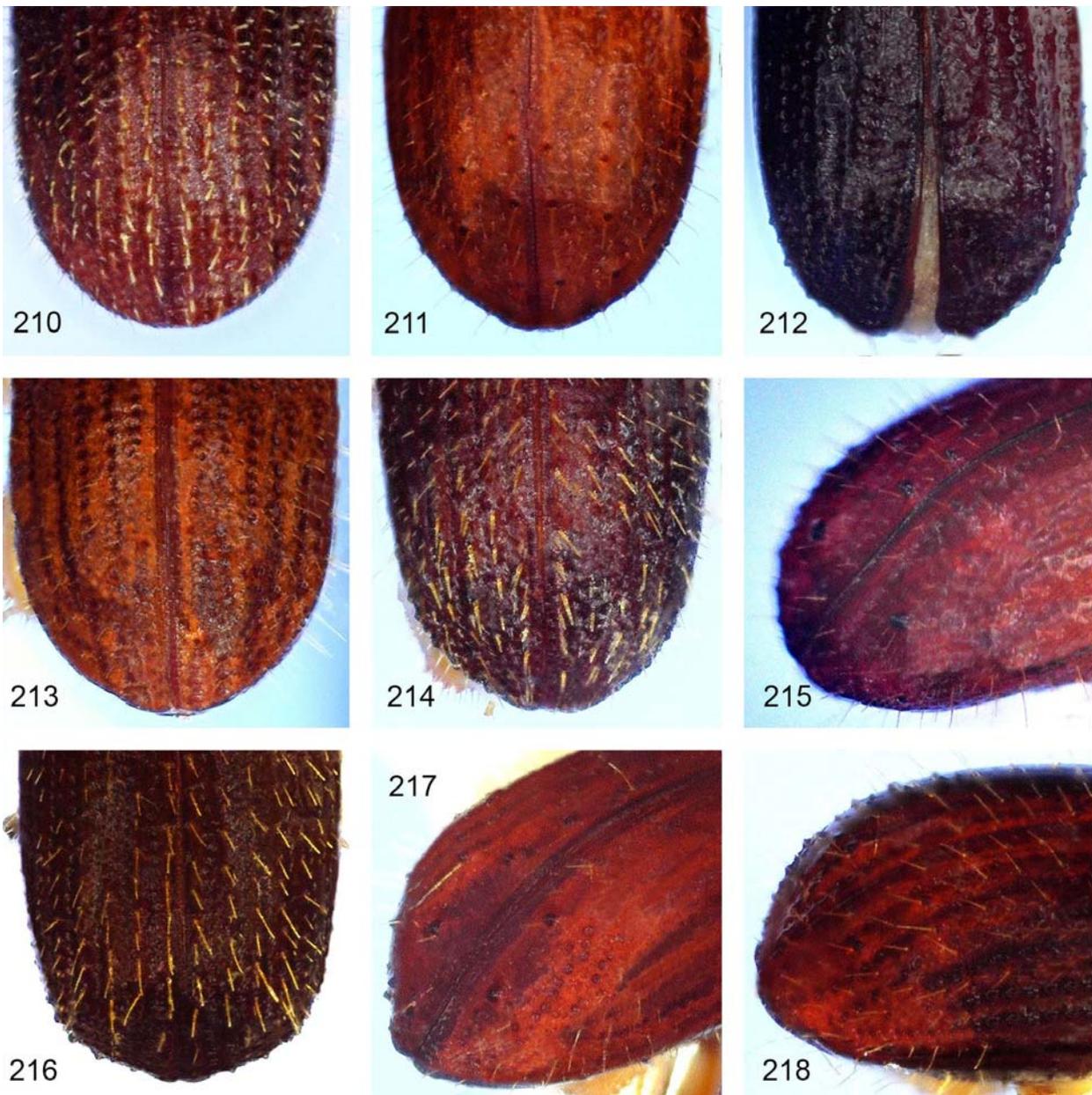
*Xyleborus intrusus* Blandford 1898: 213; Wood and Bright 1992: 745; Bright and Skidmore 1997: 160; Bright and Skidmore 2002: 114; Bright 2014: 200. **New Synonymy.**

**Description (Female).** Length 2.3–2.7 mm, 2.7 times longer than wide; reddish-brown. Frons convex, usually with a weakly elevated longitudinal carina or line extending from epistomal margin to upper eye level; surface minutely reticulate, dull to subshining, punctures large, closely placed; vestiture sparse except along epistomal margin. Antennal club 1.2 times longer than wide. Pronotum 1.1–1.2 times longer than wide; sides parallel, anterior margin broadly rounded, unarmed; anterior slope with numerous, low asperities; posterior portion smooth, shining, sparsely punctured. Elytra 1.7 times longer than wide; sides parallel on basal two-thirds, broadly rounded behind; discal striae weakly impressed, punctures large, slightly impressed; discal interstriae 1.5–2.5 times wider than striae, smooth, shining, each with a median row of small punctures and erect setae, punctures slightly smaller than those in striae, slightly less abundant. Declivity broadly, evenly convex, shining; striae as on disc; interstriae 1 and 3 each with a median row of distinct, acute, small to moderately large granules; interstriae 2 unarmed, sometimes with one tubercle near apex; interstriae 4–7 each with a median row of small granules; interstriae 7 convex, not forming a distinct lateral margin; vestiture as on disc except setae somewhat longer.

**Male.** Not present in material examined.

**Distribution.** This species occurs transcontinental across North America from British Columbia to Ontario in Canada, south throughout the United States and Mexico to Honduras and in the West Indies.

**Specimens examined. BAHAMAS:** **New Providence Island**, Carmichael area, 25°01'N, 77°25'W, 14 February 2005 / at blacklight in Caribbean pine forest and scrub, W. E. Steiner and J. M. Swearingen (2–USNM). **CUBA:** Camagüey Province, Reserva Ecológica Limones-Tuabaguey; mouth of canyon, 29.59821°N, 77.78614°W, 100 m, mercury vapor light, 14.V.2013, A. B. T. Smith (1–CMNO); Guantanamo, crest La Farda, 545 m, 20.17071–74.48402, 4.x.2014, R. Anderson, F. Cala-Riquelme, A. Deler Hernandez 2014–030, mixed pine forest litter (1–CMNO); Holguin Province, Parque Nacional La Mensura, mixed pine forest, 20.48275°N, 75.80745°W, 716 m, mercury vapor, 2013, A. B. T. Smith, F. Cala-Riquelme (3–CMNO); Santiago Province, Gran Piedra, Met. Radar, 6.XII.95, 1100 m, elfin forest litter, S. Peck, 95–75 (2–SBPC); Holguin, Sierra de Nipe, Rio Piloto, 590 m, 07 July 1990, M. A. Ivie (1–WIBF). **DOMINICAN REPUBLIC:** Dajabon, 3 km S of Restauracion, 13.VIII.1980, 700 m, A. Norrbom / under bark of dead standing pine (1–CMNH); Province La Vega, Monabao, 29 July 1999, M. A. Ivie and K. A. Guerrero, in pine sawmill (2–WIBF); La Vega Province, La Cienega de Manabao, Park Hdqt., 3–5.VII.99, 3000 ft. elev., R. E. Woodruff, blacklight trap (2–REWC); Pedernales, 37 km N Cabo Rojo (18–09N,71–35W), 1500 m, 11 July 1987, R. Davidson, J. Rawlins (1–CMNH); HDR-010 Estación El Col, Reserva Científica Ebano Verde, La Vega Province, 980 m, 21–22.VII.2015, D. Perez, J. Sanchez Borbón, day and uv (1–USNM). **HAITI:** Montrouis, 5.VII.1977, J. H. Frank, blacklight trap (1–FSCA). **ISLE OF PINES:** Los Indios, Link (2–CMNH). **MARTINIQUE:** 2 km S Ste-Anne, Morne Amerique Sud, N14°25.00, W60°52.90, 10 m / dry forest flight intercept trap, 15.VII.2012, S. Peck (1–SBPC).



**Figures 210–218.** Declivities of *Xyleborus* spp. **210)** *X. advena*. **211)** *X. affinis*. **212)** *X. anthricinus*. **213)** *Euwallacea beckeri*. **214)** *X. disjunctus*. **215)** *X. ferrugineus*. **216)** *X. gayi*. **217)** *X. macer*. **218)** *X. pubescens* (dorsal).

**Record from literature. BAHAMAS: Andros Island, Pigeon Cay** (Turnbow and Thomas 2008).

**Comments.** Females of this species may be most easily recognized by the steep, evenly convex elytral declivity which bears three to five small to moderately large granules in interstriae 1 and 3, these almost always are shorter than the interstitial width. Adults are very similar to those of *X. volvulus* but may be distinguished by the more evenly convex declivity, by the smaller interstitial granules on the declivity and often by the more strongly punctured posterior portion of the pronotum with fine lines radiating from most punctures.

Adults of this species are associated with various species of pines and should be found wherever pines are found. The Martinique specimen recorded above is definitely this species, but no host record is recorded. Pines have been planted extensively in the West Indies and it is quite possible that this species may occur beyond the natural occurrence of pines.

In all recent literature treating North American *Xyleborus*, two very similar species (*X. pubescens* and *X. intrusus*) are discussed. Each species occurs in various species of pines and both have basically the same distribution except that *X. intrusus* occurs in western North America in addition to the eastern portion of North America. Both are recorded from the West Indies. During this study, an attempt was made to distinguish these two forms using the characteristics mentioned in the literature and by examining specimens compared to the type material. In addition, numerous specimens from throughout North America were examined. Based on these examinations, I am unable to adequately distinguish two species. All characters used by previous authors were found to intergrade among the various populations and none can be used to designate species. I have therefore placed the junior name, *X. intrusus* Blandford 1898, in synonymy under *X. pubescens* Zimmerman 1868.

Rabaglia et al. (2006) have published illustrations of both forms that clearly show that the declivital granules are very small in the females of *X. pubescens* and slightly larger in the females of *X. intrusus*. As explained above, hundreds of specimens were examined from both eastern and western United States and the West Indies. The difference in granule size is minute and I believe that the illustrations mentioned above represent the extreme expression of a variable feature of the species.

### *Xyleborus pusio* Eggers

Figures 220, 221.

*Xyleborus pusio* Eggers 1941: 105; Wood and Bright 1992: 767; Bright 2014: 205.

**Description (Female).** Length 1.6–1.9 mm, 2.7 times longer than wide; dark reddish-brown to nearly black. Frons convex; surface minutely reticulate, moderately shining, punctures large, closely placed; vestiture sparse except along epistomal margin. Antennal club 1.1 times longer than wide. Pronotum 1.2 times longer than wide; sides slightly arcuate, anterior margin broadly rounded, unarmed; anterior slope with numerous, low asperities; posterior portion smooth, shining, sparsely punctured. Elytra 1.7 times longer than wide; sides parallel on basal two-thirds, narrowly rounded behind; discal striae not impressed, punctures moderate in size, slightly impressed; discal interstriae smooth, shining, punctures small, sparse; vestiture consisting of a median row of erect, narrowly flattened setae in each interstriae, these becoming more scalelike toward declivity, each seta with a minute granule at base and minute to absent striae setae. Declivity broadly sloping; surface shining; striae and interstriae as on disc except interstitial setae more scalelike, flattened and as long as or shorter than interstitial width; posterior-lateral margin acutely elevated from apex to interstriae 7, ridge low, sharp, weakly serrate.

**Male.** Unknown.

**Distribution.** This species occurs from the West Indies to Suriname and Venezuela.

**Specimens examined. DOMINICA:** Cochrane, West of Morne Macaque, 15°20.852 N, 61°20698 W, 26.IV.2006, 2,300 ft., Z. Prusak / Middleham Falls Trail, rainforest habitat in leaf litter (1-FSCA); Syndicate Estate Trail, E of Dublanc, 560 m, montane rainforest flight intercept trap, 2–13.VI.2004, S. and J. Peck (2-SBPC); Portsmouth, Cabrits National Park, 30 m, 2–13.VI.2004, tropical deciduous forest / flight intercept trap, S. and J. Peck (1-SBPC); Springfield Estate, Mt. Joy house, 400 m, 31.V-16.VI.2004, wet montane forest flight intercept trap, S. and J. Peck (5-SBPC); Middleham Falls Trail, Cochrane, 31.V-11.VI.2004, forest flight intercept trap, S. and J. Peck (1-SBPC). **GADELOUPE:** Basse-Terre: Sofaia, 6 km SW Ste. Rose, V-26–1985, C. W. and L. B. O'Brien (1-CNCI); Trois Rivières (1-MNHN); Basse-Terre: P. N. Guad., Maison de la Forêt, wet forest Malaise, 248 m, N16°1769, W61°6939, 14–31.V.2012, S. Peck (2-SBPC); Basse-Terre: 5.8 km E. Mahault, 7 Sept. 2010, R. Turnbow (1-RHTC). **MARTINIQUE:** 12 km N Fort de France (N-3), Aug. 23, 1986, C. W. and L. B. O'Brien (1-CNCI); Réserve Piton Carbet, RF de Fond-Baron, V.11.2007, J. Touroult (4-CNCI); 4 km N Ste-Luce, Forêt Montravail, 300 m, N14°29.9, W60°55.7 / humid forest flight intercept trap, 11–28.VII.2012, S. Peck, collr. (3-SBPC). **SAINT VINCENT AND THE GRENADINES:** **Saint Vincent**, Hermitage Forest, E of Spring Village, 15–27.VIII.2006, forest edge flight intercept trap and Malaise trap, 348 m, S. and J. Peck (9-SBPC); **Saint Vincent**, Vermont Nature Trail, 7 km E Buccament, 11–20.VI.2007 / rainforest uv trap, S. and J. Peck (1-SBPC).

**Comments.** Females of this species may be most easily recognized by the small size, by the presence of a median row of erect, short, narrow scales and small granules in each declivital interstriae and the acutely margined postero-lateral of the declivity. This latter character is very similar to the condition

displayed by members of the genus *Euwallacea*, however, in this species, the pronotum of the female is distinctly longer than wide, not subquadrate.

***Xyleborus spinulosus* Blandford**

Figures 222, 371.

*Xyleborus spinulosus* Blandford 1898: 201; Wood and Bright 1992: 775; Bright and Skidmore 1997: 165; Bright and Skidmore 2002: 118; Bright 2014: 206.

**Description (Female).** Length 1.8–2.6 mm, 2.4 times longer than wide; dark reddish-brown. Frons evenly convex, with a faint, median, longitudinal line; surface dull, minutely reticulate, punctures very faint, widely separated, epistomal area slightly elevated, smooth and shining; vestiture consisting of scattered, erect, hairlike setae. Antennal club as long as wide. Pronotum sub-circular, as long as wide; sides arcuate, anterior margin broadly rounded, feebly armed with several, low, indistinct asperities; anterior slope bearing numerous asperities, these low and broad; posterior and lateral surface minutely reticulate, moderately shining, punctures very small, very indistinct; vestiture consisting of short, erect, hairlike setae, each of these arising from a puncture. Elytra 1.6 times longer than wide; sides weakly arcuate from base to apex; discal striae not impressed, punctures of moderate size, slightly impressed; discal interstriae wider than striae, indistinctly punctured; vestiture consisting of erect, hairlike, interstitial setae, becoming flattened toward declivity. Declivity broadly sloping, beginning at mid-point of elytra; striae punctures larger and more deeply impressed than on disc; interstriae 1 and 2 mostly smooth, but with a few, small, acute granules or spines, especially at base of declivity; interstriae 3 with a row of three or four acute spines, the row ending in a very large, acute spine located near middle of declivity; interstriae 4 with a few, small, acute spines; interstriae 5 slightly elevated, forming ventral margin of declivity, with a row of progressively larger, acute spines, the largest of these is directly beneath the large spine in interstriae 3 and equal in size to it; vestiture between lateral margins consisting of a median row of small, flattened, erect scales in each interstriae, a few of these extend beyond lateral margins.

**Male.** Length 1.6 mm, strongly convex. Frons weakly convex, dull, minutely reticulate. Eyes and antenna strongly reduced in size, much smaller than in female. Pronotum 1.1 times longer than wide, strongly convex; discal surface smooth, sparsely, minutely punctured and without asperities; anterior margin broadly rounded, without marginal serrations. Elytra 1.3 times longer than wide; apex narrowly rounded; each discal interstriae with a median row of long setae; discal striae weakly punctured. Declivity convex, surface completely devoid of granules or spines.

**Distribution.** This species is widespread in the West Indies, Central America, southern Mexico and South America. It is reported from southern Texas (Atkinson and Riley 2013).

**Specimens examined.** **ANTIGUA:** Christian Valley, 20.VIII.1991, FAO Insect Survey, blacklight trap (1–FSCA). **CUBA:** Santiago Province, Gran Piedra, Isabelica, 6–7.XII.95, 1110 m, sweeps, L. Masner, C-03, 95–98 (1–CNCI). **DOMINICA:** 2.5 to 3.5 km. W. Freshwater Lake, Morne Tres Pilon N. P., VI.23.2004 / collectors C. W. and L. B. O’Brien (5–CNCI); Springfield Estate, 31.V-16.VI.2004, 550', ridge-top forest above Mt. Joy, S. and J. Peck (7–SBPC) and same locality and date, Mt Joy house, 400 m, wet montane forest (10–SBPC, CNCI); St. Paul Parish, Springfield Plantation, blacklight trap, 22 June 2004, R. Turnbow (1–RHTC). **DOMINICAN REPUBLIC:** Barahona, Larimar Mine, nr. Filipinas, 6–11.VI.1993, blacklight trap, R. E. Woodruff (1–REWC); Province Hato Mayor, Par. Nac. Los Haitises, west of Sabana de la Mar, bosque humido, various dates Apr-July 1992, M. A. Ivie (4–WIBF); Santo Domingo, 30 m, 14.5.1972, J. and S. Klapperich (1–NHMB). **GRENADA:** Grand Etang Forest Res., N12°04.62', W61°42.16', 10–28.VIII.2010, 400 m, rainforest flight intercept trap, S. Peck (6–SBPC, CNCI); Saint Andrew, Grand Barcolet, various dates and collectors, 1990 (4–SBPC); Saint Andrew, Mirabeau Agriculture Laboratory, various dates and collectors, 1990, light trap (25–SBPC, 3–FSCA). **GADELOUPE:** Basse-Terre: Gourbeyre, Feb. 2003, J. Touroult (8–WIBF); Basse-Terre: Gourbeyre, Palmiste, 05–20 Jan. 2003, J. Touroult (2–WIBF); Basse-Terre: Grand Anse, Deshaies, 25 Dec 2002, J. Touroult (1–WIBF); Basse-Terre: Gourbeyre, Moscou, 31 Dec 2002, J. Touroult (1–WIBF); Basse-Terre: Petit Binro, 02 Jan 2003, J. Touroult (3–WIBF); Basse-Terre: Gourbeyre, Forêt de Moscou, 20–26 Feb. 2003, J. Touroult (1–WIBF); Basse-Terre: Rivière Sens, Sentier Houëlemont, N15°58.93, W61°42.62, 80 m, 19–31.V.2012, humid forest flight intercept trap, S. Peck (14–SBPC, CNCI). **HAITI:** Port au Prince, 1.14.1908, Dr. M. Cameron (1–NHML). **JAMAICA:** Trelawny Parish, Barbecue Bottom, 12 August 1966, A. T. Howden (1–CNCI) and H. F. Howden (2–CNCI). **MARTINIQUE:** 4 km. N Ste-Luce, Forest Montravail, 300 m, N14°29.9, W60°55.7 (1–SBPC). **MONTSERRAT:** Gunn Hill, 1106 ft., 16°45.56'N, 62°12.63'W, 20 June 2002, K. A. Marske, leaf litter (1–

WIBF); Jack Boy Hill, 16°45.88'N, 62°10.83'W, K. Marske, black fungus gall (3-WIBF); Jubilee Heights, 23 Jun 2002, K. A. Marske, ex leaf litter (1-WIBF); Woodlands, Cassava Ghaut, Beattie House, 01–29 June 2003, K. A. Marske, flight intercept trap (1-WIBF); Woodlands, Riverside House, 33 m, 10–12 Jan. 2002, M. A. Ivie and K. Marske, Malaise trap (1-WIBF). **NETHERLANDS ANTILLES: Saba**, Bottom Mtn. Trail, 28.IV.2013, small branch, D. E. Bright and B. A. Barr (1-CNCI). **PUERTO RICO:** along hwy. 52, west side rest area, near hwy. marker 50 km, 18°4'16.251"N, 66°13'7.1574"W, III.20.2011, S. J. Seybold / ex: fallen branch of *Albizia procera*, 6–10 cm dia. pieces, emerged in lab., VI and VII.2011 (11-CNCI); Arranquitas, IV.24.2012 (1-PRDA); Boquillo Sabana, Luquillo, light trap, 5.I.1990(1-CNCI); Guaynabo, 13.II.1995, ex light trap (1-CNCI); Guaynabo, 17.IX.1995, ex light trap (2-CNCI). **SAINT LUCIA:** Bordelais trap site, 185 m, 13.9689°N, 60.8859°W, 19–25 June 2009, uv light, C. A. Maier and E. A. Ivie (1-WIBF); Chassin trap site, 94 m, 13.9965°N, 60.9195°W, various dates in 2009, uv light, C. A. Maier or E. Ivie or R. C. Winton (3-WIBF); Castries, Union Agriculture Station, 1–12. VI.1987, Malaise trap, R. E. Woodruff (1-REWC); Micoud, trail towards Fond Bay, 13°9'48"N, 60°53'42"W, 15 m, A. R. Cline and S. D. Gaimari, 17 May 2009, ex blacklight trap (1-WIBF). **SAINT VINCENT AND THE GRENADINES: Saint Vincent**, Hermitage Forest, E. of Spring Valley, 15–27.VIII.2006, forest edge flight intercept trap, S. and J. Peck (1-SBPC); **Mayreau Island**, Saltwhistle Bay, 12–27.VIII.2009 / N12°38', W61°03', thorn shrub at pond flight intercept trap, S. Peck (1-SBPC). **VIRGIN ISLANDS (BRITISH): Tortola**, Mt. Sage National Park, S side Mt. Sage, 1520 ft., rest, 30 OCT-13 NOV 1992, M. A. Ivie, flight intercept trap #4 (3-WIBF). **VIRGIN ISLANDS (U. S.): Saint Croix**, USDA SEA Station, Kingshill, 21 MAR 1972, G. Dekle, blacklight trap (1-WIBF); Sprat Hall, 01–05 Oct. 1992, J. A. Yutema (1-WIBF); Sprat Hall, 01 FEB 1982: A. Goodwin (1-WIBF). **Saint John**, Estate Hope, Bordeaux Mtn., flight intercept trap, 23 July-14 Oct. 1994, 980 ft., M. A. and L. Ivie (1-WIBF).

**Comments.** Females of this species may be easily recognized by the interstitial rows of short, narrowly flattened scales on the declivity, by the presence of two large spines and several smaller spines on the lateral margin of the concavely impressed elytral declivity and by the broadly rounded, serrate anterior margin of the pronotum.

Wood and Bright (1992) and Wood (2007) list a large number of host plants for this species. Vázquez et al. (2003) list *Albizia* as a host plant in Cuba.

### ***Xyleborus volvulus* (Fabricius)**

Figure 223.

*Bostrichus volvulus* Fabricius 1775: 454.

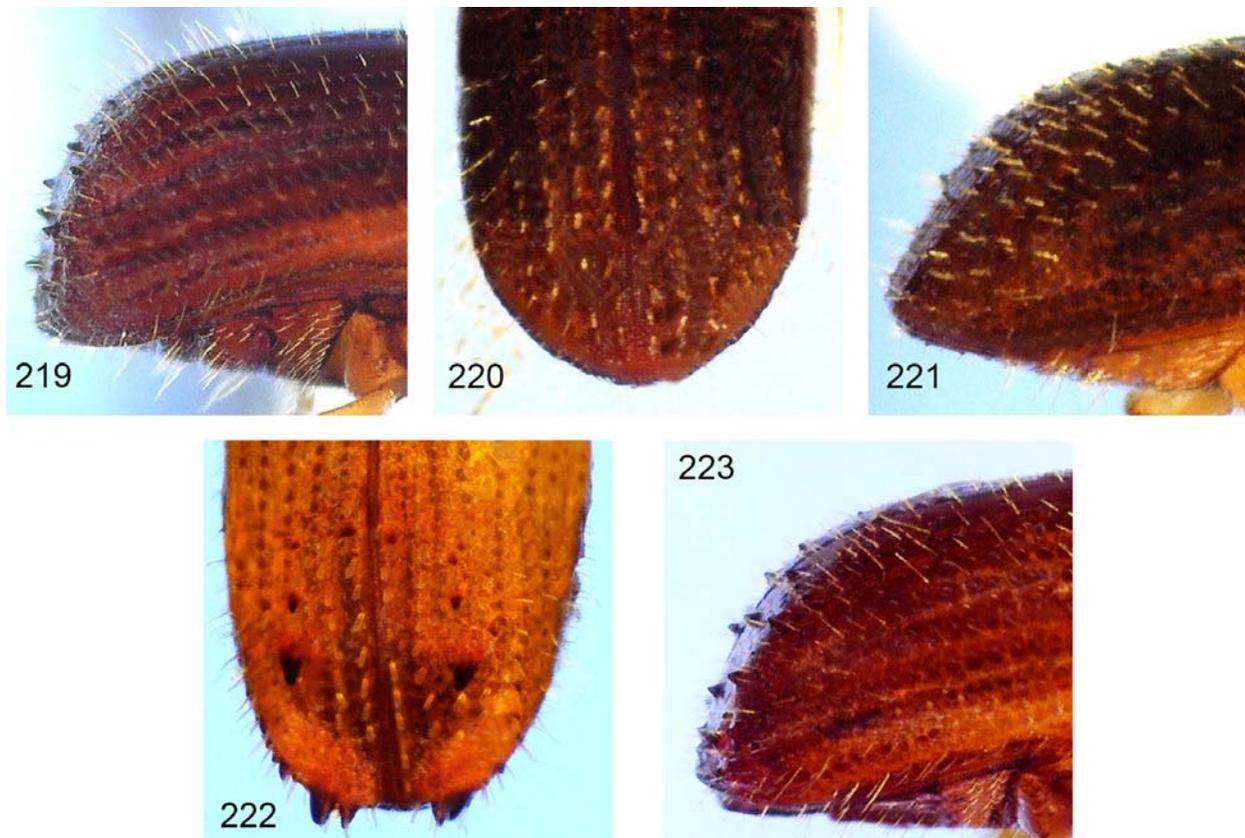
*Xyleborus volvulus*: Wood and Bright 1992: 780; Bright and Skidmore 1997: 166; Bright and Skidmore 2002: 119; Bright 2014: 208.

*Xyleborus grenadensis* Hopkins 1915a: 61, 65 (Grenada).

**Description (Female).** Length 2.3–2.7 mm, 2.9 times longer than wide; light to dark reddish-brown. Frons convex, sometimes very faintly impressed above epistoma, with a faintly elevated, longitudinal line, or a subtuberculate median elevation, or neither; surface shining, minutely reticulate, punctures large, close, shallow, giving a rugose appearance to surface; vestiture consisting of scattered, hairlike setae, these more conspicuous along epistomal margin. Antennal club 1.2 times longer than wide. Pronotum 1.2 times longer than wide; sides slightly arcuate, anterior margin broadly rounded, unarmed; anterior slope bearing numerous, low asperities, surface between asperities shining, faintly reticulate; posterior and lateral surface smooth, shining or minutely reticulate either over entire surface or in restricted areas; vestiture consisting of scattered, hairlike setae, these longer along sides. Elytra 1.8 times longer than wide; sides parallel on basal two-thirds, broadly rounded behind; discal striae impressed or unimpressed, punctures large, shallow; discal interstriae convex, smooth, shining, punctures half the size of striae punctures and slightly less numerous; vestiture consisting of erect, hairlike interstitial setae and inconspicuous, hairlike striae setae. Declivity convex; surface shining; interstriae 2 slightly depressed below level of 1 and 3 and may have a row of minute granules; interstriae 1, 3, 5 and 7 with four to six acute tubercles.

**Male.** Not available in material examined. See Wood (2007) for a description.

**Distribution.** This very common species is widespread throughout the tropical and subtropical regions of the world. It is distributed throughout the West Indies.



**Figures 219–223.** Declivities of *Xyleborus* spp. **219)** *X. pubescens* (lateral). **220)** *X. pusio* (dorsal). **221)** *X. pusio* (lateral). **222)** *X. spinulosus*. **223)** *X. volvulus*.

**Specimens examined.** **ANTIGUA:** Christian Valley, 3.XI.1991, FAO Insect Survey, blacklight (7–SBPC, CNCI). **BAHAMAS:** **Andros Island,** Forfar Field Station, high coast coppice blacklight (CNCI); French Crk., Andros, Androsia, high interior coppice-shrubs and trees sweeping and high coast coppice-blacklight (CNCI); Stafford Crk., Doc Woodsides Place, high coast coppice-blacklight (CNCI); Mennonite’s Farm, crop blacklight (CNCI); Saddleback Cay, litter and soil sifting–Berlese (CNCI); Forfar Field Station, nr Stafford Creek, 22–28.VII.2006, M. C. Thomas, T. R. Smith, uv trap in coastal coppice (FSCA, RHTC, CNCI); Mastic Point, blacklight trap, 9 June 2004, R. Turnbow (10–RHTC, 3–CNCI). **Grand Bahama Island,** Freeport, 20–27 June 1987, W. E. Steiner, M. J. and R. Molineaux (1–USNM). **New Providence Island,** Carmichael area, 25°01’N, 77°25’W, 14 February 2005 / various habitats (8–USNM). **San Salvador Island,** Gerace Research Ctr., 24°07’N, 74°26’W, 23 June 2005 / under bark of fallen leaning *Bursera simaruba* in mixed scrub forest, W. E. Steiner and J. W. Swearingen (1–USNM). **BARBADOS:** Turner’s Hall Wood, 27.II.1979, S. Peck (1–SBPC). **CAYMAN ISLANDS:** **Cayman Brac,** N19°43.158’, W79°47.597’, 8.VI.2008, M. C. Thomas, R. H. Turnbow, B. K. Dozer, blacklight trap (7–FSCA); Hemmingford Rd., 8.VI.2008, N19°42.639’, W79°48.987’, M. C. Thomas, R. H. Turnbow, B. K. Dozer, blacklight trap (1–FSCA); **Little Cayman,** North Coast Rd., .1 km W Olivine Kirk Dr., 26.V.2009, Thomas, Turnbow and Bell, blacklight trap (1–FSCA); **Grand Cayman,** 3 km W Colliers, 19°21’N, 81°07’W, 21 February 1993 / at blacklight in cut-over forest near ponds, W. E. Steiner and J. M. Swearingen (1–USNM); Salina Reserve, 19°21’N, 81°08’W, 17 February 1993 / under bark of rotten trunk of *Bursaria simarouba* / F. J. Burton, W. E. Steiner and J. M. Swearingen (2–USNM). **CUBA:** Havana, Baker (2–CMNH); Cienfuegos Province, Jardín Botánico de Cienfuegos, 22.12179°N, 80.32646°W, 73 m, mercury vapor light, 21.V.2013, A. B. T. Smith, F. Cala-Riquelme, A. Deler-Hernández (5–CMNO); Holguin Province, Parque Nacional la Mensura, mixed pine forest, 20.48275N, 75.80745W, 716 m, MV lights, 10.V.2013, A. B. T. Smith, F. Cala-Riquelme (2–CMNO); Metanzas Orov, Ciénaga Zapata, at Playa Larga, 10 and 11 Feb, 1981, D. Davis and P. Spangler (1–USNM); Manicaragua, 9–15.III.1937, H. J. McGillavry (1–USNM); San Blas, 1–9.III.1933, H. J. McGillavry (1–SLWC); Santiago Province, Gran Piedra Met. Radar, 6–17. XII. 1995, 1100 m, elfin forest flight intercept trap (1–SBPC). **DOMINICA:** Clarke Hall, 6–12.IX.1964, T. J. Spilman (1–USNM); St. John Parish, Cabrits National Park, blacklight trap, 28 June 2004, R. Turnbow (1–RHTC); St. Paul Parish, Springfield Plantation, blacklight trap, 23 June 2004, R. Turnbow (2–

RHTC). **DOMINICAN REPUBLIC:** Barahona, Barahona, uv trap, 8–29–30.1997, R. Baranowski and C. W. O'Brien (4–CNCI); Hato Mayor, Parque Los Haitises, 3 km W Cueva de Arena, 19.04N, 69.29W / 20 m, 7–9 July 1992, R. Davidson et al., mesic lowland forest (1–FMNH); Rio Baiquate, 1–2 km S Jarabacoa, 520 m., 8–9 May 1995, O. S. Flint (1–USNM); Azua, east side of crest, Sierra Martin Garcia, 7 km WNW Barrero, 18.21N, 70.58W, 860 m / 25–26 July 1992, C. Young et al., cloud forest adjacent to disturbed forest (1–CMNH); *Cedrus olerata*, Feb. 18, 1938 (1–USNM); Pedernales Province, Km. 1 Trail Fondo Paradi, 3 km S Oiedo, 17°49.085'W, 71°26.336 W, 120 m, 27.VIII.2011, D. Perez, S. Medrano, A. Hilario (1–USNM). **GRENADA:** Lance aux Epines, Coral Cove, N11°59.57', W61°45.22', 10–28.VIII.2010, thorn shrub flight intercept trap, S. Peck (1–SBPC); Saint Andrew, Mirabeau Agriculture Laboratory, various dates in 1990, various collectors, light trap (45–SBPC, CNCI); Sierra Prieta, Santo Domingo Province, 18°38.974'N, 69°58.408' W, 06.VIII.2011, D. Rerez, B. Hierro, R. Bastardo (10–USNM); numerous additional specimens from Parish St. Davids, Bellevue, Morne Delice or Parish St. Georges, St. Georges Botanical Garden or Parish St. Johns, Black Bay and various localities in Parish St. Andrews (SBPC, CNCI). **GADELOUPE:** Basse-Terre: Pigeon, Chalet Sou-le-Vent, N16°9.05, W61°5.97, 170 m, hotel yard uv traps, 13.V.2012, S. Peck (5–SBPC); Deshaies, Morne Mazeau aux battages, 29.VII.1999, D. Roguet (1–CNCI). **HAITI:** Montrouis, 5.VII.1977, blacklight trap, J. H. Frank (1–FSCA); Manville, Feb. 6–10, 1922 / 60 m alt. (1–AMNH). **ISLE OF PINES:** Los Indios, Link, Oct. of Nov 1912 (5–CMNH, 1–CNCI). **JAMAICA:** Bath, July 1967, W. Klopp (1–FSCA); Portland Parish, 8 km S. Port Antonio, nr. Windsor, 29 MAR 1999, T. K. Philips and L. E. Gerofsky (3–WIBF); Portland Parish, Palisodoes, 25 August 1966, Howden and Becker (1–CNCI); Port Antonio, 1–7 August 1966, E. C. Becker (3–CNCI); Saint Andrew Parish, Hardwar Gap, 4000', 11 July 1966, Howden and Becker (1–CNCI); Irish Town, 24–27 August 1066, Howden and Becker (6–CNCI); Jack's Hill, Maya Campground, 22–31.VII.1985, C. B. and H. V. Weems Jr., G. B. Edwards, uv light (4–FSCA); Saint James Parish, Montego Bay, 1920, coconut trunk, A. H. Ritchie (13–NHML); Saint Mary Parish, Tryall, 1920, ex base of heart leaves of coconut with bud rot, A. H. Ritchie (14–NHML); Trelawny Parish, Barbecue Bottom, 13 August 1966 (5–CNCI); Duncans, 1–23 August 1966, Howden and Becker (38–CNCI); Good Hope, 11 August 1966, H. F. Howden (23–CNCI). **MARTINIQUE:** Bellefontaine, 7.III.2011, J. Touroult (2–CNCI); 2 km NW Diamant, N14°9.4', W61°02.5', 8–23.VII.2010 / thorn forest flight intercept trap, 80 m, S. and J. Peck (2–SBPC); Ste Anne, Anse Maurier, 7.III.2011, J. Touroult (1–CNCI); 12 km N. Fort de France, Aug. 23, 1986, C. W. and L. B. O'Brien (1–CNCI). **MONTSERRAT:** Cassava Ghaut, Beatty's House, 16°45.91'N, 62°12.95'W, or Hope Ghaut, Beattie House, various dates in 2002 and 2003, light traps and leaf litter (50–WIBF, CNCI); Gun Hill, 02 June 2002, K. A. Marske (1–WIBF). **NAVASSA ISLAND:** central forest area, forest west of lighthouse, near lighthouse, July and August 1998, W. E. Steiner and J. W. Swearingen (11–USNM). **NETHERLANDS ANTILLES:** **Curacao,** Christoffel Park, Copper Mine Tr., 12°20'10"N, 69°06'59"W, blacklight trap, 8 Nov 2014, (1–RHTC); Christoffel N. P., Orchard Trail, 12°20'4.76"N, 69°7'4.51"W, 10.XI.2014, M. C. Thomas, blacklight trap (1–FSCA). **Saba,** Scout's Place Hotel at 402 m, 17.62773°N, 63.23122°W, pool, 12–15 Mar 2008, D. S. Sikes (1–WIBF); Windward side, 23–26.VIII.1993, R. M. and H. V. Baranowski, blacklight trap (1–CNCI). **PUERTO RICO:** El Verde Res. Station, Catlow, Cage 6, 24 May 2000, K. Beard (1–WIBF); Guaynabo, 5.I.96 / ex. light trap #142 (1); Guaynabo, 5.I.96 / light trap, 21.VIII.96 / ex *Terminalia catappa* log, 14.IV.96; Mona Island, Sendero Capitán, 50 m, at Hg and uv lights (2), at night, incl. Hg / uv lights (4), N18°05'29", W67°56'16", N. Franz, V.23 or V.19.2008 (9–UPRC); Guanica, 4.17.1940, D. DeLeon (1–USNM). **SAINT LUCIA:** Island record only / in *Inga laurina* (1–CNCI); Micoud Dist., Escap Community, 13.8310°N, 60.8986°W, various dates in 2009 and various collectors, uv light and rotten log (90–WIBF, CNCI); Chassin trap site, 94 m, 13.9965°N, 60.9195°W, 31 May–04 June 2009, R. C. Winton and C. A. Maier (2–WIBF) and same locality, 17–23 May 2009, uv light, R. C. Winton and E. A. Ivie (1–WIBF); Quilles For. Res., LaPorte cabin, 272 m, 13.84041°N, 60.97408°W, 07 May 2009, I. A. Foley and J. B. Runyon (1–WIBF); La Porte Forest Trail, 13°84'N, 60°96'W, 7.VII.2009, 340 m, in dead fallen tree, D. E. Bright (2–CNCI); Mon Repos, Fox Grove Inn, 90 m, 9–18.VII.2007 / uv light, S. and J. Peck (3–SBPC). **SAINT VINCENT AND THE GRENADINES:** **Canouan Island,** Mahaut Bay, N21°43', W61°19', 7.VIII.2008 / dry shrub woodland uv trap, 100 m, S. Peck and M. DeSilva (8–SBPC). **Union Island,** Chatham Bay, N21°36', W61°27' / dry hillside woodland uv trap, 15–16.VIII.2008, S. Peck and M. DeSilva (3–SBPC). **VIRGIN ISLANDS (BRITISH):** **Virgin Gorda,** Gorda Peak National Park, 1275 ft., 15 JUL–11 OCT 1994, M. A. and L. L. Ivie, flight intercept trap #2 (3–WIBF). **Tortola,** Roadtown, 25 March 1983, R. S. Miller (1–WIBF); Mt. Sage Nat. Park, S. side Mt. Sage, 1520 ft., 14 DEC–08 JAN 1993, M. A. Ivie, flight intercept trap (2–WIBF). **VIRGIN ISLANDS (U. S.):** **Buck Island,** Buck Is. Reef N. P., 08 JAN 1993 (1–WIBF); same locality, 30 MAR–29 JUNE 1995, flight intercept #15, 340 ft., Z. M. Hillis (1–WIBF). **Saint Croix,** Estate Cotton Garden, S. E. T. I. Station, 12 JAN 1993, at night, D. S. Sikes (2–WIBF); Estate North Hall, Creque Gut and Dam, 06 JAN 1993, R. S. Miller (2–WIBF); Estate North Star, 1992 and 1993, 60 ft., flight inter. trap, J. Keularts (2–WIBF). **Saint John,** Estate Carolina, NW of Coral Bay, Lameshur Bay, Denis Bay, various dates in 1980–1983, W. B. Muchmore, at light (ca 200–WIBF, CNCI); Brown Bay, 4 March 1984, W. B. Muchmore (10–WIBF, CNCI); Great Cruz Bay, 15–19.VI.1996, uv, B. and B. Valentine (7–WIBF, CNCI). **Saint Thomas,** Estate Nazareth, Sea Horse Cottages, 01–04 JAN 1993, 120 ft. (4–WIBF, CNCI); Est. Enighed, Magen's Bay Arboretum, 01 JAN 1993 (5–WIBF, CNCI).

**Records from literature. BAHAMAS:** **Andros Island,** Pigeon Cay (Turnbow and Thomas 2008). **CUBA:** El Retiro, Rio Taco-Taco: de Rio, 1000 ft., March 26, 1939, J. C. Bradley (Schedl 1957 [as *Xyleborus torquatus* Eichhoff]).

**SAINT LUCIA:** Castries, Sept. 10, 22, 1919, J. C. Bradley (Schedl 1957 [as *Xyleborus perforans* Woll.]).

**Comments.** Females of this species resemble those of *X. pubescens* but can be distinguished by the more gradually sloping elytral declivity, by the slightly larger granules on the declivital interstriae and by the smoother posterior portion of the pronotum. In addition, *X. pubescens* occurs on islands where pines occur, while *X. volvulus* occurs on all islands in a wide variety of plant material.

Adults of *X. volvulus* are very similar to those identified as *X. perforans* Wollaston, a common species in the Old World tropics. The two taxa are almost certainly synonymous. Wood (2007) distinguishes the two species on very vague morphological differences that are probably not indicative of speciation and Beaver et al. (2014) states that the species are doubtfully distinct and appear to overlap. I have been unable to detect distinct morphological differences in the females of both taxa.

This species is very common throughout the West Indies at lower elevations. Vázquez et al. (2003) list *Eucalyptus* and *Pinus* as host plants in Cuba; the *Pinus* record may refer to *X. pubescens*.

### *Xyleborus xylographus* (Say)

*Bostrichus xylographus* Say, 1826: 256.

*Xyleborus xylographus*: Wood and Bright 1992: 783; Bright and Skidmore 1997: 167; Bright and Skidmore 2002: 119); Bright 2014: 208.

*Xyleborus inermis* Eichhoff 1868a: 401 (Cuba).

**Description (Female).** Length 2.5–2.8 mm, 3.0 times longer than wide. Frons minutely reticulate, shining, with shallow, scattered punctures; median portion bearing a broad, smooth, slightly elevated, longitudinal line. Antennal club 1.3 times longer than wide. Pronotum 1.2 times longer than wide; sides parallel; anterior margin broadly rounded, smooth; anterior slope bearing numerous, low asperities; posterior portion smooth, shining, with fine punctures. Elytra 1.8 times longer than wide; sides parallel on posterior three-fourths; apex broadly rounded; discal striae punctured in regular rows, punctures large, impressed; discal interstriae smooth, shining, punctures numerous, smaller than striae punctures. Declivity steeply convex, occupying 15% of elytral length, minutely reticulate, dull; interstriae 1 and 3 slightly elevated, each with two or three minute granules; interstriae 2 slightly impressed, finely granulate; striae 1 diverging from suture in middle.

**Male.** Similar to but smaller than female, 1.9 mm in length; wingless; other characters poorly formed.

**Distribution.** This species is widespread throughout eastern North America from southern Canada to Florida and east to Kansas. It evidently was introduced into California and now occurs from British Columbia to California. It evidently occurs in Cuba and possibly Puerto Rico.

**Records from literature.** This species is recorded in the West Indies from Cuba, Guadeloupe and Puerto Rico (Wood and Bright 1992), but no specimens from the West Indies have been seen during this study. *Xyleborus inermis*, a synonym of *X. xylographus*, was described from Cuba but the type specimen was destroyed during World War II and no additional specimens are known. A record of this species is reported by Wolcott (1948), under the synonymous name *X. inermis*, from adults intercepted in mango at San Juan, Puerto Rico and from specimens eaten by a cliff swallow and by a honey creeper. One specimen from Maricao, Puerto Rico, collected Sept. 2, 2014, was collected in a trap as part of the USDA Early Detection Survey (Atkinson 2015). Vázquez et al. (2003) record this species from *Terminalia* in Cuba, but with no locality data. No locality data for the Guadeloupe record was seen. Bright and Torres (2006) recommended deleting this species from the West Indies fauna, but I have decided to include it since the records above seem reliable.

**Comments.** Females of this species may be recognized by the steeply convex elytral declivity that appears to be slightly flattened and is somewhat dull and minutely reticulate. They are vaguely similar to females of *X. pubescens* and *X. volvulus*, both of which have a shining and more evenly convex elytral declivity. The species is placed in the above key with *X. affinis* the females of which have a much more sloping elytral declivity that is distinctly reticulate and dull. In addition, females of *X. xylographus* have very small granules in declivital interstriae 1 and 3, in contrast to the large granules of the other three species mentioned above. Atkinson (2015) provides a good picture of the declivity of *X. xylographus*.

### Genus *Xylosandrus* Reitter

*Xylosandrus* Reitter 1913: 80, 83; Wood and Bright 1992: 787; Bright and Skidmore 2002: 470 (checklist); Bright 2014: 209.

Members of this genus may be distinguished by the narrowly to widely separated procoxae, by the stout body shape and by convex elytral declivity. The posterior face of the antennal club is solid, without any sutures.

Forty species from throughout the world are listed by Dole and Cognato (2010), three of which were recorded from the West Indies. Five species are herein recognized from the West Indies.

### Key to the species of *Xylosandrus* in the West Indies

(Females only)

1. Entire declivital surface dull, with small, dense, randomly and uniformly distributed granules, striae not evident; length 1.9–2.9 mm; Bahamas, Puerto Rico ..... ***X. crassiusculus* (Motschulsky)** (p. 308)
- Declivity shining, without dense, randomly placed granules, striae distinct, punctured in even rows ..... **2**
- 2(1). Elytral apex slightly notched at suture, apex of each elytron separately, acutely margined; elytral striae obscure, not impressed; postero-lateral margin of declivity acutely elevated and serrate from interstriae 7 to elytral apex; length 1.7 mm, 2.4 times longer than wide; Cuba ..... ***X. cubensis* Bright, sp. nov.** (p. 308)
- Elytral apex evenly rounded, not notched at suture; elytral striae obvious, distinct; postero-lateral margin of declivity acutely elevated but not serrate; length variable, less than 2.4 times longer than wide; generally distributed ..... **3**
- 3(2). Basal half of elytra glabrous; median area of basal portion of pronotum with a small, longitudinal clump of small, spatulate setae; length 1.2–1.5 mm (occasional specimens reach 1.7 mm); widely distributed ..... ***X. curtulus* (Eichhoff)** (p. 309)
- Basal portion of elytra usually bearing interstitial setae; median area of basal portion of pronotum bearing hairlike setae; length 1.4–1.8 mm ..... **4**
- 4(3). Elytra as long as wide; elytral declivity beginning 1/3 elytral length from base; mature color yellowish-brown; length 1.4–1.7 mm; Guadeloupe, Martinique, Puerto Rico ..... ***X. morigerus* (Blandford)** (p. 310)
- Elytra 1.1–1.3 times longer than wide; in lateral view, elytra almost evenly arched from middle of disc to apex; mature color black; length 1.4–1.8 mm; widely distributed ..... ***X. compactus* (Eichhoff)** (p. 306)

### ***Xylosandrus compactus* (Eichhoff)**

Figures 224, 225, 471, 541.

*Xyleborus compactus* Eichhoff 1875: 201.

*Xylosandrus compactus*: Wood and Bright 1992: 788; Bright and Skidmore 1997: 168; Bright and Skidmore 2002: 120; Bright 2014: 210.

**Description (Female).** Length 1.4–1.8 mm, 2.1 times longer than wide; black. Frons convex, weakly impressed above epistoma; surface moderately shining, minutely reticulate, with shallow, scattered punctures. Pronotum 1.1–1.2 times wider than long; sides weakly arcuate, anterior margin broadly rounded, with 10 small serrations; anterior slope with abundant, scattered asperities; summit at middle; posterior portion shining with scattered, weakly impressed fine punctures; setae on disc generally distributed except for a slightly more dense transverse group at median area at base. Elytra 1.1–1.3 times longer

than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae punctured in regular rows, punctures small, weakly impressed, each with a small, recumbent seta; discal interstriae smooth, 2.0–3.0 times wider than striae, each interstriae with a median row of longer, erect setae. Declivity evenly convex; interstriae 7 acutely elevated from base of declivity to sutural apex; striae and interstriae as on disc.

**Male.** Not present in material examined. For description, see Wood (2007).

**Distribution.** This species is widespread throughout the tropical and subtropical regions of the world.

**Specimens examined.** **BARBADOS:** Turners Hall Woods, 200 m, 5–23.VI.2007, forest flight intercept trap, S. Peck (10–SBPC). **CAYMAN ISLANDS: Grand Cayman,** Northside, 5.III.2001, J. Steer, boring in avocado stems (2–RHTC). **DOMINICA:** Middleham Falls Trail, Cochrane, 31.V-11.VI.2004, forest flight intercept trap, S. and J. Peck (1–SBPC); Portsmouth, Cabrits National Park, 30 m, 2–13.VI.2004, tropical deciduous forest / flight intercept trap, S. and J. Peck (6–SBPC); Springfield Estate, 30.V-16.VI.2004, 830–860 m, mature second forest flight intercept trap, S. and J. Peck (7–SBPC); Springfield Estate, Mt. Joy House, various dates 2004, wet montane forest, S. and J. Peck (9–SBPC); Saint George Parish, 1.5–3.5 km W Freshwater Lake, 23 June 2004, R. Turnbow (2–RHTC); Saint George Parish, Trafalgar Falls Trail, 25 June 2004, R. Turnbow (1–RHTC); Saint Paul Parish, Pont Casse, 18 and 24 June 2004, R. Turnbow (2–RHTC); 1.1 km N Pont Casse, 1800', 6.19.2004, C. W. and L. B. O'Brien (1–CNCI). **DOMINICAN REPUBLIC:** El Seibo, 9 km N of Pedro Sanchez, Aug. 2, 1979, L. B. O'Brien (1–CNCI). **GRENADA:** Grand Etang Forest Reserve, N12°04.62', W61°42.16', 10–28.VIII.2010, 400 m, rainforest flight intercept trap, S. Peck (2–SBPC). **GADELOUPE:** Basse-Terre: La Gros Morne Grand Anse, 26 MAY 2012, R. Turnbow (1–RHTC); Basse-Terre: Forest del Monts Caraibes, 25 MAY 2012, R. Turnbow (1–RHTC); Basse-Terre: Pigeon, Sous-Le-Vent, 12.V.2012, 16.15042, 61.76414, 194 m, dry tropical deciduous forest litter, R. Anderson (1–CMNO); Basse-Terre: Rivière Sens, Sentier Houëmont, N15°58.93, W61°42.62, 80 m, 19–31.V.2012, humid forest flight intercept trap, S. Peck (10–SBPC, CNCI); Sante-Rose, 18.VII.1999, aux batragees, leg. D. and J-P Roguet (1–CNCI). **MARTINIQUE:** 2 km NW Diamant, N14°29.4', W61°02.5, 8–23.VII.2010 / thorn forest flight intercept trap, 80 m, S. and J. Peck (1–SBPC); 400 m, RF de Fond-Baron, Sous-bois / Piegue vitre, 02.VI.2006, J. Touroult (1–CNCI). **MONTERRAT:** Cassava Ghaut, 263 m, 16°45.749'N, 62°12.47'W, 08–11 June 2003, K. Marske (1–WIBF); Cassava Ghaut, Beattie House, 16°45.91'N, 62°12.95'W, 17–30 May 2002, 632 ft., A. Krakower (1–WIBF); Hope Ghaut, 16°45.169'N, 62°12.74'W, 21 May 2003, 315 m, K. A. Marske (1–WIBF); Hope Ghaut, 16°45.209'N, 62°12.722'W, 23 July 2005, 750 ft., V. G. Martinson (1–WIBF); trail to Katy Hill, just below heli pad, 2300 ft., 11–14 Aug. 2005, WIBF group, uv light trap (-WIBF). **NETHERLANDS ANTILLES: Saba,** Crispeen Track nr. Ecolodge, 1500', 25.IV.2013 / ex: broken branch, D. E. Bright and B. A. Barr (20–CNCI); **Saba,** Mt. Scenery Trail at Mountain Road, 1500', 23.IV.2013 / ex: broken branch, D. E. Bright and B. A. Barr (2–CNCI). **PUERTO RICO:** Carite Saint For., VII.28.1999, C. W. O'Brien and P. Kovarik (1–CNCI); Guaynabo, 1.VI.1996, J. Torres, light trap (2–CNCI). **SAINT LUCIA:** La Porte Forest Trail, 13°84'N, 60°97'W, 11.VII.2009, 272 m / in very small twigs on green sapling, D. E. Bright (43–CNCI); Piton Flores, 532 m, 13°96'N, 60°94'W, 6.VII.2009 / in fresh broken branch, D. E. Bright (3–CNCI); Escap Community, Micoud, trail to beach, 6.VII.2009 / in small dead branch, D. E. Bright (19–CNCI); 3 km N Mon Repos, 5.VII.2009 / in small dead branch, D. E. Bright (8–CNCI); Barre de L'Isle Trail, 13°93'N, 60°96'W, 3.VII.2009, 340 m / in small dead branch, D. E. Bright (1–CNCI); numerous additional specimens from Mont LaCombe, Quielles Forest. Res., Grande Anse, Chassin, all various collectors, 2009 (WIBF, CNCI). **SAINT VINCENT AND THE GRENADINES: Saint Vincent,** Hermitage Forest, E. of Spring Valley, 15–27.VIII.2006, forest edge flight intercept trap, S. and J. Peck (5–SBPC); **Union Island,** Chatham Bay, Water Rock Reserve, S. Peck / N12°36', W61°26', 14–20.VIII.2009, uv traps-tall forest (1–SBPC). **VIRGIN ISLANDS (BRITISH): Guana Island,** Quail Dove Ghut, 25 Jan-25 Feb. 1993, 600 ft., Lio Wei Peng, flight intercept trap (2–WIBF). **Tortola,** Mt. Sage National Park, N. side Mt. Sage, 1520–1550 ft., 13 Nov-10 Dec. 1992, T. R. Hughes, flight intercept trap and 10 Dec-07 Jan. 1993, M. A. Ivie (6–WIBF). **Virgin Gorda,** Gorda Peak National Park, 06 Jan 1993, 1000–1300 ft., M. Ivie and D. Chadwick (3–WIBF). **VIRGIN ISLANDS (U. S.): Saint Thomas** Est. Botany Bay, 29 July-15 Oct 1994, M. A. and L. L. Ivie (1–WIBF).

**Record from literature.** **CUBA,** Island record only (Vázquez et al. 2003).

**Comments.** Females of this species are very similar to those of *X. morigerus* but differ by the dark brown to black color when mature, by the longer pronotum and elytra and by the different declivital profile.

Adults of this species have been recorded attacking small branches of coffee and *Cattleya* pseudobulbs in Puerto Rico (Franqui et al. 1991). Vázquez et al. (2003) list *Coffea* and *Rauwolfia* as host plants in Cuba.

***Xylosandrus crassiusculus* (Motschulsky)**

Figure 232.

*Phloeotrogus crassiusculus* Motschulsky 1866: 403.*Xylosandrus crassiusculus*: Wood and Bright 1992: 790; Bright and Skidmore 2002: 120; Bright 2014: 210.

**Description (Female).** Length 1.9–2.9 mm, 2.1 times longer than wide; reddish-brown. Frons evenly convex; surface dull to weakly shining, minutely reticulate, with very shallow, obscure, scattered punctures and a few minute granules. Pronotum 1.2 times longer than wide, widest at middle; sides broadly arcuate, anterior margin broadly rounded, with a row of 10 small serrations; anterior slope with abundant, scattered asperities; summit at middle; posterior portion weakly shining, densely reticulate, with small, densely placed, very weakly impressed fine punctures. Elytra 1.1–1.2 times longer than wide; sides parallel on basal three-fourths, strongly converging to narrowly rounded apex; anterior half of disc smooth, shining, irregularly punctured, with striae weakly visible, not impressed and interstriae 6.0 times wider than striae, each interstriae with abundant, impressed, fine punctures. Declivity commencing at posterior half of disc, evenly convex, entire surface dull, with small, dense, randomly and uniformly distributed granules, striae not evident.

**Male.** Dwarfed, pronotum without asperities, elytra more gradually arched, other features more poorly developed.

**Distribution.** This species occurs throughout the tropical to temperate areas of the world. It is an introduced species that now occurs throughout most of the United States, especially in the eastern and southeastern portion and in the Bahamas and Puerto Rico.

**Specimens examined.** **BAHAMAS: New Providence Island**, Carmichael area, 25°01'N, 77°25'W, 17 April 2007 / at blacklight in Caribbean pine forest and scrub, W. E. Steiner and J. M. Swearingen (7–USNM, CNCI). **PUERTO RICO:** Road 734, Sector Los Pinos, Cidra, 7.XI.2013, *Pinus caribaea* (1–PRDA); Island record only, EDRR Site 4, 15.VII.2014, alpha-pinene and ETOH trap (1–MSUC).

**Comments.** Females of this species may be easily recognized by the densely granulate, evenly convex elytral declivity, by the lack of discernable striae or strial punctures on the declivity, by the size and by the additional characters as described above. No other species in the West Indies is remotely similar.

This species has been introduced into the southeastern United States and has reached the Bahamas and Puerto Rico either by introduction or by natural spread. Adults of this species occur in a wide variety of herbaceous plants. It has been reported to attack healthy and newly transplanted trees and shrubs causing significant losses.

***Xylosandrus cubensis* Bright, sp. nov.**

Figure 230, 231.

**Type Material.** **HOLOTYPE** (female) labeled: “**CUBA:** Camagüey Province, Reserva Ecológica Limones-Tuabaquey; scrub-savanna, 21.57566°N, 77.79272°W, 67 m, MV lights, 15–V-2013; A. B. T. Smith” / “**HOLOTYPE** *Xylosandrus cubensis* D. E. Bright 2016” (CMNO).

**Description (Female).** Length 1.7 mm, 2.4 times longer than wide; light yellowish-brown. Frons evenly convex; surface moderately shining, minutely reticulate, with a few very shallow, obscure, scattered punctures. Pronotum as long as wide, widest at middle; sides very slightly arcuate, anterior margin more narrowly rounded, with six moderately large serrations, median pair slightly larger; anterior slope with abundant, scattered asperities; summit at middle; posterior portion brightly shining, smooth, with scattered, very weakly impressed fine punctures; base with a longitudinal group of small, erect setae in front of scutellum. Elytra 1.5 times longer than wide; sides parallel on basal three-fourths, converging abruptly to narrowly rounded apex; apex slightly notched at suture, each elytron separately, acutely rounded; discal striae not impressed, obscurely punctured in regular rows, punctures small, weakly impressed, each with a very small, recumbent seta; discal interstriae smooth, narrower than striae, basal half of

each interstriae glabrous, apical half of each with a median row of erect setae, these 2.0–3.0 times longer than interstitial width. Declivity convex; interstriae 7 acutely elevated and serrate from base of declivity to apex; striae and interstriae as on disc.

**Male.** Unknown.

**Distribution.** Known from the type locality.

**Etymology.** Named for the type locality.

**Comments.** The generic placement of this species is problematical. Other than the widely separated anterior coxae and the characters of the antennal club, none of the typical characters of *Xylosandrus*, as described by Dole and Cognato (2010), are evident. The elytral apex is slightly notched at the suture with each elytron separately rounded, the body is slender (2.4 times longer than wide) and the posteriolateral portion of the elytra is acutely elevated and serrate. No other species of *Xylosandrus* that I am aware of displays similar characteristics.

Rabaglia (as reviewer) comments that this species could be close to *Anisandrus* Ferrari but adults of *Anisandrus* species have contiguous procoxae.

***Xylosandrus curtulus* (Eichhoff)**

Figure 226, 227.

*Xyleborus curtulus* Eichhoff 1869: 281.

*Xylosandrus curtulus*: Wood and Bright 1992: 793; Bright and Skidmore 1992: 168; Bright and Skidmore 2002, 120; Bright 2014: 211.

*Anisandrus zimmermanni* Hopkins 1915a: 67 (Florida).

*Xyleborus zimmermanni*: Wood and Bright 1992: 801; Bright 2014: 214.

*Xyleborus curtuloides* Eggers 1941: 102 (Guadeloupe).

**Description (Female).** Length 1.2–1.5 mm (occasional specimens may reach 1.7 mm), 2.0 times longer than wide; light to dark brown, elytra often darker. Frons evenly convex; surface dull to moderately shining, minutely reticulate, with very shallow, obscure, scattered punctures and a few minute granules. Pronotum 1.15 times wider than long, widest at base; sides broadly arcuate, anterior margin more narrowly rounded, with six moderately large serrations; anterior slope with abundant, scattered asperities; summit at middle; posterior portion weakly shining, densely, minutely reticulate, with scattered, very weakly impressed fine punctures; base with a longitudinal group of small, erect setae. Elytra 1.1 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae punctured in regular rows, punctures small, weakly impressed, each with a small, recumbent seta; discal interstriae smooth, 3.0–4.0 times wider than striae, each interstriae with a median row of longer, erect setae. Declivity evenly convex; interstriae 7 acutely elevated from base of declivity to sutural apex; striae and interstriae as on disc.

**Male.** Evidently very similar to male of *X. compactus*.

**Distribution.** This species is known from southern Florida, throughout Mexico and Central America to Colombia, Brazil and Venezuela. It probably occurs throughout the West Indies.

**Specimens examined.** **ANTIGUA:** Christian Valley, 26.VIII.1991, FAO Insect Survey, blacklight trap (1–FSCA). **DOMINICA:** Saint Peter Parish, Syndicate Trail, 27 June 2004, R. Turnbow (1–RHTC). **DOMINICAN REPUBLIC:** Barahona, 4.5 km S Barahona, 9 July 1996, R. Turnbow (1–RHTC); El Seibo, 9 km N Pedro Sanchez, Aug. 2, 1979, L. B. O'Brien (1–CNCI); Province Barahona, nr. Filipinas, Larimar Mine, 26.VI–7.VII.1992, R. E. Woodruff, Skelley, flight trap (1–FSCA). **GRENADA:** Grand Etang Forest Reserve, N12°04.62', W61°42.16', 10–28.VIII.2010, 400 m, rainforest flight intercept trap, S. Peck (5–SBPC, CNCI). **GUADELOUPE:** Basse-Terre: Sofaia, 6 km SW of Ste. Rose, V.26.1985, C. W. and L. B. O'Brien (2–CNCI). **MARTINIQUE:** 1 km E Diamant, N14°29.4', W61°02.5', 7–23.VII.2010 / 10 m, thorn forest flight intercept trap, S. and J. Peck (2–SBPC); 5 km SE Le Marin, Forest Creve, Coeur, 35 m, N14°27.05', W60°50.91' / dry forest uv trap, 10–28.VII.2012, S. Peck (1–SBPC); 4 mi SW Le Marin, Morne Aca, N14°27.8', W60°53.9' / humid forest hilltop clearing flight intercept trap, 13–28.VI.2012, S. Peck (1–SBPC). **SAINT LUCIA:** Barre de L'Isle, 13.9368°N, 60.9593°W, 341 m, 25–28 June 2009, uv light, E. A.

Ivie (1–WIBF); Escap Community, Micoud, trail to beach, 6 and 7.VII.2009 / in small dead branch, D. E. Bright (2–CNCI); Piton Flores, 532 m, 13°96'N, 60°34'W, 6.VII.2009 (1–WIBF); La Porte Forest Trail, 13°84'N, 60°97'W, 11.VII.2009, 272 m / in very small twigs on green sapling, D. E. Bright (6–CNCI). **VIRGIN ISLANDS (U. S.): Saint Croix**, Sprat Hall, 21–31 Jan. 1981: A. Goodwin, ex vane trap with ETOH bait (3–CNCI).

**Record from literature. BAHAMAS: Andros Island**, Red Bays (Turnbow and Thomas 2008) (as *Xylosandrus zimmermanni*).

**Comments.** Females of this species may be distinguished from those of *X. compactus* by their smaller size and by the more strongly arched elytral profile in lateral view.

### *Xylosandrus morigerus* (Blandford)

Figures 228, 229.

*Xyleborus morigerus* Blandford 1894a: 264.

*Xylosandrus morigerus*: Wood and Bright 1992: 797; Bright and Skidmore 2002: 121; Bright 2014: 213.

**Description (Female).** Length 1.4–1.7 mm, 1.8–1.9 times longer than wide; reddish-brown. Frons evenly convex, with a weakly elevated, longitudinal carina extending from epistoma to upper eye level; surface shining, obscurely minutely reticulate, with large, moderately deeply impressed, scattered punctures. Pronotum 1.15 times wider than long, widest at base; sides broadly arcuate, anterior margin broadly rounded, with eight moderately large serrations; anterior slope with abundant, scattered asperities; summit slightly behind middle; posterior portion smooth, brightly shining, with a few, very weakly impressed fine punctures; base and remainder of surface glabrous. Elytra as long as wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae obscurely punctured, rows not impressed, punctures small, weakly impressed, glabrous; discal interstriae smooth, glabrous, 3.0–4.0 times wider than striae. Declivity occupying apical two-thirds of elytra, evenly, steeply convex; striae marked by rows of short setae, interstitial setae longer; interstriae 7 acutely elevated from base of declivity to sutural apex.

**Male.** Evidently similar to the male of *X. compactus*.

**Distribution.** This species, widespread throughout the world, is often intercepted at ports and has been introduced into numerous countries.

**Specimens examined. GUADELOUPE:** Basse-Terre: Petit Binro, 02 Jan 2003, J. Touroult (2–WIBF); Basse-Terre: Gourbeyre, Feb 2003, J. Touroult (3–WIBF); Basse-Terre: Gourbeyre, Palmiste, 05–20 Jan 2003, J. Touroult (2–WIBF); Basse-Terre: Grand Anse, Deshaies, 25 Dec 2002, J. Touroult (1–WIBF). **MARTINIQUE:** 4 km N Ste-Luce, Forest Montravail, 300 m, N14°29.9, W60°55.7 / humid forest Malaise, 11–28.V.2012, S. Peck (1–SBPC). **PUERTO RICO:** Cayey, II.24.1999, J. Torres, *Ceiba pentanda* log (1–CNCI); El Yunque Sta., Luquillo Forest, July 6–9, 1969, H. and A. Howden (1–CNCI); El Yunque, 4.IX.1989, in *Sloanea berteriana* log, (1–CNCI); Guaynabo, 1.VI.1996, light trap (1–CNCI); Mayagüez, 22.XII.2015 / ex: stems of *Theobroma cacao*, R. Goenaga (3–CNCI).

**Comments.** Females of *X. morigerus* may be recognized by the very short discal area of the elytra, by the steeply arched elytral profile, by the glabrous elytral disc and by the presence of striae and interstitial setae on the declivity.

Torres-Santana (personal e-mail communication 2014) reported that adults of this species were collected at Fajardo, Puerto Rico from a shoot of *Nectandra coriacea* (Lauraceae). Adults produced wilt-like symptoms on a dying plant.

## SUBFAMILY CORTHYLINAE

This subfamily is characterized by the metepisternum which is largely covered by the lateral margin of the elytra and is visible at anterior portion; by the antennal club which is evenly, strongly flattened, with distinct to obscure sutures or grooves and is often asymmetrical and exceedingly large or elaborately pubescent (especially in the tribe Corthylini), by the slender tibia which has three to five socketed



**Figures 224–232.** Declivities of *Xylosandrus* spp. **224)** *X. compactus* (dorsal). **225)** *X. compactus* (lateral). **226)** *X. curtulus* (dorsal). **227)** *X. curtulus* (lateral). **228)** *X. morigerus* (dorsal). **229)** *X. morigerus* (lateral). **230)** *X. cubensis* (dorsal). **231)** *X. cubensis* (lateral). **232)** *X. crassiusculus*.

denticles on the outer margin, by the contiguous procoxae and by the hairlike vestiture, or, in some cases, by the absence of vestiture.

**KEY TO THE TRIBES AND GENERA OF WEST INDIES CORTHYLINAE**

1. Antennal funicle 3- to 4-segmented (pedicel excluded), club symmetrical, usually with three distinct transverse or procurved sutures or grooves (sutures sometimes absent or obsolete) (Fig. 407); elytral declivity convex to weakly sulcate or bisulcate; bark and twig beetles (tribe Pityophthorini) ..... **2**

- Antennal funicle apparently absent or, if present may be 1- to 4-segmented (pedicel excluded), club either with procurved or transverse sutures or sutures obsolete (Fig. 408, 411); elytral declivity convex to truncate or deeply excavated, commonly with spine-like processes; ambrosia beetles (tribe Cortlylini) ..... **9**
- 2(1). Antennal funicle 3-segmented (pedicel excluded), club large, asymmetrical, with one partly chitinized, oblique suture (visible in microscopic preparations), without visible external sutures or with an arcuate groove indicating sutures (Fig. 410); female with anterior margin of pronotum strongly extended and bent downward over head (Fig. 548) .... ***Sphenoceros* Schedl** (p. 394)
- Antennal funicle definitely 4-segmented (pedicel excluded), club small to large with distinct to obscure, transverse or arcuate sutures; anterior margin of pronotum evenly rounded and not extended downward over head in both sexes ..... **3**
- 3(2). Pronotum more than 1.3 times longer than wide (Fig. 544); mandibles very large, stout and conspicuous; oral region very large; sutures of antennal club weakly arcuate, suture 1 distinctly darkened, chitinized (Fig. 409); body more than 3.0 times longer than wide ..... ***Gnathoraptus* Bright, genus nov.** (p. 345)
- Pronotum 1.0–1.2 times longer than wide; mandibles not especially distinctive or conspicuous (few exceptions); oral region not distinctive; sutures of antennal club straight to strongly procurved or obsolete; body less than 3.0 times longer than wide ..... **4**
- 4(3). Sutures of antennal club moderately to very strongly procurved, suture 1 partly septate (Fig. 407) ..... ***Araptus* Eichhoff** (p. 313)
- Sutures of antennal club straight to weakly procurved, if procurved then both sutures at least partly septate ..... **5**
- 5(4). Sutures 1 and 2 on antennal club aseptate, marked by grooves and rows of setae (Fig. 473); body length either more than 4.0 mm or less than 1.5 mm ..... **6**
- Sutures 1 and 2 on antennal club septate; body less than 3.0 mm in length and elongate ..... **7**
- 6(5) Body larger, 4.2 mm and very stout (Fig. 473, 543); in cones of *Pinus* sp. .... ***Conophthorus* Hopkins** (p. 340)
- Body much smaller and slender, 1.3 mm in length and 3.1 times longer than wide (Fig. 477, 547); host unknown but not in cones of *Pinus* sp. .... ***Pseudopityophthorus* Swaine** (p. 392)
- 7(5). Female pronotum with a pair of large, oval, densely pilose areas (Fig. 475, 545), same area in male smooth without distinct punctures or asperities; body 2.5–2.8 times longer than wide .. ***Pityoborus* Blackman** (p. 347)
- Female pronotum without densely pilose areas, surface asperate and/or punctate; body more slender ..... **8**
- 8(7). Eyes very large, 2.5 times wider than length of antennal scape and with facets almost as large as antennal pedicel; mandibles of female slightly elongate, meeting on distal half (Fig. 269, 271, 272) ..... ***Gnatholeptus* Blackman** (p. 342)
- Eyes not greatly enlarged, 1.5 times wider than length of antennal scape and with minute facets much smaller than antennal pedicel; mandibles of female not elongate ..... ***Pityophthorus* Eichhoff** (p. 348)
- 9(1). Antennal funicle 4-segmented (pedicel excluded), club symmetrical with straight to procurved sutures ..... **10**
- Antennal funicle apparently absent or, if present then 1- to 2-segmented (pedicel excluded), club asymmetrical with sutures distinct to obscure or absent ..... **11**

- 10(9). Antennal club with two distinct, transverse sutures (Fig. 413); elytral declivity evenly convex, weakly sulcate along suture, with very small granules in interstriae 3 (Fig. 481, 551) ..... ***Gnathotrichus* Eichhoff** (p. 408)  
 — Antennal club flattened, basal half chitinized and glabrous, margin of basal area procurved, apical half of club densely pubescent; fore tibia narrow, very slightly widened distally, with two denticles on anterior margin and a long curved spine at apex; pronotum elongate, 1.6 times longer than wide, anterior margin unarmed (Fig. 482, 552) . ***Gnathotrupes* Schedl** (p. 410)
- 11(9). Antennal funicle 1- to 3-segmented (pedicel excluded); antennal club with two, distinct sutures (Fig. 414, 415); elytra apex divaricate, often explanate (Fig. 549, 554, 555); anterior tibia slender, posterior face inflated and bearing tubercles ..... **12**  
 — Antennal funicle apparently absent, pedicel attached to club (Fig. 411, 412); elytral apex entire, not explanate (Fig. 550); declivity convex to deeply excavated ..... **14**
- 12(11). Precoxal area large, posteriorly angulate, occupying anterior portion of area between coxae; protibia sexually dimorphic, male coarsely dentate on anterior margin and tuberculate on posterior face, female finely and randomly tuberculate on slightly inflated posterior face; antennal club of female bearing long setae on posterior face ..... ***Monarthrum* Kirsch** (p. 414)  
 — Precoxal area not posteriorly angulate and not extending between procoxae; protibia similar in both sexes, with a marginal row of denticles and posterior face unarmed or bearing a few scattered tubercles; antennal club of female either without setae or setae sparse ..... **13**
- 13(12). Elytra apex broadly rounded, weakly divaricate, not explanate; elytral declivity deeply sulcate, lateral margin bearing three pairs of spines; pronotum stout, 1.1–1.2 times longer than wide (Fig. 555) ..... ***Tricolus* Blandford** (p. 422)  
 — Elytra strongly explanate at apex; apices distinctly explanate; pronotum elongate, 1.6–1.7 times longer than wide (Fig. 549) ..... ***Amphicranus* Erichson** (p. 395)
- 14(11). Lateral margins of pronotum rounded; elytral declivity short, very steep, narrowly sulcate on basal third, triangularly impressed below; antennal club sub-circular, symmetrical, with two aseptate sutures marked by rows of setae; female frons convex, pubescence inconspicuous (Fig. 483, 553) ..... ***Microcorthylus* Ferrari** (p. 411)  
 — Lateral margins of pronotum marked by a fine, raised line; elytral declivity convex, concave, or variously impressed; antennal club slightly to strongly asymmetrical, sutures strongly marked; female frons concave, usually with abundant pubescence ..... **15**
- 15(14). Elytral declivity narrowly, weakly sulcate, lateral margins armed by several small granules; female frons impressed on each side of a median sulcus; antennal club symmetrical, broadly oval, with two sutures ..... ***Corthylocurus* Wood** (p. 397)  
 — Elytral declivity convex or variously impressed, not narrowly sulcate; female frons various but not impressed; antennal club slightly to strongly asymmetrical, with strongly marked sutures when present (Fig. 411, 412) ..... ***Corthylus* Erichson** (p. 398)

## TRIBE PITYOPHTHORINI

### Genus *Araptus* Eichhoff

*Araptus* Eichhoff 1878b: 305; Wood and Bright 1992: 952; Bright and Skidmore 1997: 198; Bright and Skidmore 2002: 300 (checklist); Bright 2014: 236.

The adults of species of *Araptus* are very similar to those in *Pityophthorus* and it is often difficult to place specimens in the proper genus. The most reliable character that distinguishes members of *Araptus* is the distinctly procurved sutures on the antennal club, especially suture 1 (antennal suture 1 of species of *Pityophthorus* is straight to weakly procurved). In addition, the pronotal summit is not elevated or

very weakly elevated, the transverse impression posterior to the pronotal summit is often not evident and the transition from the asperate to the punctured portion of the pronotum is gradual. Wood (2007) distinguishes species of this genus by the partly to entirely septate suture 1 on the antennal club and the never septate suture 2, and by the denticles on lateral margin of the protibia extending to the basal fourth of the tibial length. The septate vs non-septate nature of the antennal sutures is very difficult to determine and usually requires removal of the antennae for microscopic examination. The extent of the denticles on the protibia is variable and may not be reliable. See the comments under *Pityophthorus* for more information.

For the purpose of this study, I have arbitrarily restricted *Araptus* to those species in which the adults have the following characteristics: an evenly arcuate pronotal profile without an elevated summit or with a very weakly elevated summit; a distinct, usually strongly arcuate, septate antennal suture 1 and an equally or more strongly arcuate, non-septate antennal suture 2. Unfortunately, adults can be found that display one or more of the above characters, but display one or more of the characters of *Pityophthorus* as outlined in the comments under *Pityophthorus*.

As presently constituted, this is a very large, diverse and complex genus with 115 species distributed in the tropical and subtropical areas of the New World (Bright and Skidmore 2002). Wood (2007) adds 50 more species from South America. Eleven species were previously recorded from the West Indies (Wood and Bright 1992); however, 28 species are treated herein.

### Key to the species of *Araptus* in the West Indies

1. Asperities on anterior slope of pronotum arranged in four evenly concentric, widely separated rows; elytral declivity convex, with interstriae 1 weakly impressed on upper half; length 1.5–2.0 mm, 2.5 times longer than wide; Cuba ..... ***A. cubensis* (Blackman)** (p. 321)
- Asperities on anterior slope of pronotum randomly scattered over surface or arranged into broken, irregular, concentric rows, these, if present, more distinct on lateral portions ..... **2**
- 2(1). Pronotum with a distinct, elevated summit; anterior margin of pronotum with 14 large serrations; elytral declivity strongly convex, striae 1 weakly impressed, all interstriae with a median row of erect setae; length 2.0–2.3 mm, 2.6 times longer than wide; Guadeloupe ..... ***A. guadeloupanus* Wood** (p. 326)
- Pronotum without an elevated summit; anterior margin of pronotum with less than eight serrations or margined by an acutely elevated, undulating ridge; elytral declivity variable, but not as above ..... **3**
- 3(2). Suture 1 of antennal club strongly to profoundly procurved, usually suture 2, if visible, strongly procurved ..... **4**
- Suture 1 of antennal club straight to weakly or distinctly moderately strongly procurved, suture 2 similar to 1 or strongly procurved ..... **18**
- 4(3). Anterior margin of pronotum without distinct serrations or an elevated ridge, margin may be very weakly notched ..... **5**
- Anterior margin of pronotum with distinct serrations or a slightly elevated, acute ridge ..... **7**
- 5(4). Male frons transversely impressed above epistoma, with a sharply elevated, median carina; upper crest of impression slightly elevated, smooth or with several, small, distinct granules; female frons weakly impressed above epistoma, with a low, median carina; lateral margin of epistoma above base of mandibles with a pair of very small granules; length 1.9 mm, 2.3 times longer than wide; Dominican Republic ..... ***A. turnbowi* Bright, sp. nov.** (p. 338)
- Male and female frons evenly convex, with a distinct, longitudinal carina ..... **6**
- 6(5). Male frons slightly flattened from epistoma to upper eye level, with a sharply elevated carina, with two, small, median swellings, one on each side of carina; female frons evenly convex, with a low, median carina; lateral portion of epistomal margin not elevated; length 1.6–1.8 mm, 2.4

- times longer than wide; Dominica, Saint Lucia, Saint Vincent .....  
 ..... **A. squamosus Bright, sp. nov.** (p. 337)
- Male frons evenly convex, with a distinct, longitudinal carina; female frons similar but with a sparse brush of short setae; lateral portion of epistomal margin slightly elevated just above mandibular insertion, elevation more distinct in male; length 1.7–1.8 mm, 2.5 times longer than wide; Grenada ..... **A. incolus Bright, sp. nov.** (p. 330)
- 7(4). Anterior margin of pronotum bearing an acutely elevated, slightly undulating ridge, distinct serrations absent ..... **8**
- Anterior margin of pronotum definitely and distinctly serrate, serrations often very small ... **10**
- 8(7). Pronotal asperities arranged into broken, concentric rows; elytral declivity impressed along suture; lateral angles of epistomal margin smooth, not bearing a pair of small tubercles or elevations; length 1.9–2.1 mm, 2.7 times longer than wide; Jamaica .....  
 ..... **A. montanus (Bright)** (p. 334)
- Pronotal asperities scattered in no apparent order; elytral declivity evenly convex or weakly impressed along suture; each lateral angle of epistomal margin bearing a small tubercle or elevation ..... **9**
- 9(8). Antennal club with three, arcuate, not chitinized sutures; anterior margin of pronotum bearing a continuous, acute ridge; length 1.7 mm, 2.0 times longer than wide; Puerto Rico .....  
 ..... **A. bituberculatus Bright, sp. nov.** (p. 319)
- Antennal club with one arcuate, chitinized suture; anterior margin of pronotum bearing a slightly undulating, acute ridge; length 1.9 mm, 1.7 times longer than wide; Curaçao .....  
 ..... **A. insulanus Bright, sp. nov.** (p. 332)
- 10(7). Serrations on anterior margin of pronotum very small; frons of both sexes with a distinct, longitudinal carina; antennal club large, longer than funicle, 1.1 times longer than wide, suture 1 strongly recurved; length 1.6–1.8 mm, 2.6 times longer than wide; Grenada .....  
 ..... **A. grenadaensis Bright, sp. nov.** (p. 325)
- Serrations on anterior margin of pronotum distinct; frons of both sexes without a median carina (female may have a faint longitudinal carina); antennal club variable, not as above ..... **11**
- 11(10). Elytral declivity with interstriae 2 slightly to distinctly impressed below level of interstriae 1 and 3 ..... **12**
- Elytral declivity evenly convex, striae 1 may be impressed or not, interstriae not impressed; female frons with or without a brush of setae ..... **15**
- 12(11). Elytral declivity distinctly, deeply bisulcate, interstriae 3 elevated higher than suture, bearing a row of distinct, small granules; length 1.4–1.5 mm, 2.7 times longer than wide; Saint Lucia .  
 ..... **A. wintoni Bright, sp. nov.** (p. 340)
- Elytral declivity slightly impressed or slightly flattened to weakly convex ..... **13**
- 13(12). Elytral declivity appearing slightly flattened, with interstriae 2 weakly impressed; declivital striae obsolete; interstriae 3 imperceptibly elevated, unarmed; female frons slightly concave, with long setae; length 1.4–1.6 mm, 2.7 times longer than wide; Grenada .....  
 ..... **A. melanurus Bright, sp. nov.** (p. 333)
- Elytral declivity evenly convex ..... **14**
- 14(13). Female frons distinctly, shallowly concave, densely pubescent with longer, incurved setae on periphery; male frons with a shallow, broad median impression with a prominent median carina extending to above upper level of eyes; length 1.7–1.9 mm, 2.2 times longer than wide; Jamaica .....  
 ..... **A. decorus (Bright)** (p. 323)

- Female frons with a circular brush of long setae, glabrous in center of brush; length 1.9–2.2 mm, 2.9 times longer than wide; Jamaica, Dominican Republic ..... ***A. beckeri* Bright, sp. nov.** (p. 318)
- 15(11). Mandibles very large, stout; male frons strongly convex and weakly, transversely impressed at lower eye level, strongly and transversely inflated below this impression and between eyes and epistomal margin; length 1.8 mm, 2.5 times longer than wide; Guadeloupe ..... ***A. ferrugineus* Bright, sp. nov.** (p. 324)
- Mandibles slender, usually strongly extended forward; frons variable, flattened to concave.. **16**
- 16(15). Length 2.0–2.4 mm, 2.4 times longer than wide; male frons flattened, not impressed, carina weakly elevated; female frons weakly convex, with dense, fine, short setae, longitudinal carina very weakly elevated; Jamaica, Haiti ..... ***A. politus* (Blandford)** (p. 337)
- Length variable but usually smaller than 2.0 mm, more slender; male frons deeply impressed; female frons with a brush of incurved setae ..... **17**
- 17(16). Posterior portion of female pronotum with large, close punctures, punctures separated by a distance less than their diameters, interpuncture surface dull, closely reticulate; body black, slender; length 1.6 mm, 3.1 times longer than wide; Dominican Republic ..... ***A. fuscus* Bright, sp. nov.** (p. 324)
- Posterior portion of pronotum with punctures slightly smaller, separated by a distance slightly more than half their diameters; body dark reddish-brown, light brown on basal half of elytra, stouter; length 1.7 mm, 2.6 times longer than wide; Jamaica ..... ***A. howdeni* Bright, sp. nov.** (p. 328)
- 18(3). Anterior margin of pronotum with an acutely elevated costa, this sometimes slightly crenulate but not distinctly serrate ..... **19**
- Anterior margin of pronotum distinctly serrate ..... **21**
- 19(18). Median half of pronotum with numerous transversely arcuate, slightly elevated, shining costa, these extending onto posterior portion behind summit; elytral interstriae each bearing a median row of erect, narrowly spatulate setae; length 1.2 mm, 2.8 times longer than wide; Cuba ..... ***A. caperatus* Bright, sp. nov.** (p. 319)
- Pronotum bearing numerous, separated asperities on anterior half, none of these appearing as transverse, arcuate costa; elytral interstriae bearing fine, hairlike to narrowly flattened setae ..... **20**
- 20(19). Male frons moderately to very deeply, triangularly impressed, lateral margin of impression bearing a pair of distinct granules above base of mandibles; mandibles of male prominent, strongly extended forward, curved, dorsal and lateral margins parallel, slightly widened at tips; female frons convex to flattened, with a low, longitudinal, median carina extending from epistoma to near vertex; declivital interstriae 1, 3, 5, 7 each with a row of short, hairlike to narrowly flattened setae, these shorter than interstitial width; length 1.4–1.7 mm, 2.4 times longer than wide; widely distributed ..... ***A. hymenaeae* (Eggers)** (p. 329)
- Male frons not deeply impressed; female frons flattened, convex or concave; elytral declivity with a row of fine setae in each interstriae except second; apex of abdominal sternite 5 acutely margined and elevated in a semicircular prominence; length 1.6 mm, 2.6 times longer than wide; Dominican Republic ..... ***A. ciseruditus* Bright, sp. nov.** (in part) (p. 320)
- 21(18). Lateral margin of pronotum with an acute, elevated line, at least on posterior half ..... **22**
- Lateral margin of pronotum rounded or acutely rounded but elevated line not evident ..... **28**
- 22(21). Elytral declivity weakly bisulcate; antennal club with suture 1 weakly arcuate, darkly chitinized, remaining sutures obsolete; female frons broadly concave from eye to eye and from epistoma to

- well above eyes, with dense setae; length 1.6 mm, 2.7 times longer than wide; Grenada .....  
 ..... ***A. ustulatus* Bright, sp. nov.** (p. 339)
- Elytral declivity evenly convex or impressed, not bisulcate; antennal club variable, not as above;  
 female frons flattened or convex, not as above ..... **23**
- 23(22). Elytral declivity evenly convex, with short, sparse, erect, slender to slightly spatulate setae in  
 interstriae 1, 3, 5 and 7 ..... **24**
- Elytral declivity with setae on all interstriae (except 2) or interstriae glabrous ..... **25**
- 24(23). Posterior half of pronotum brightly shining, with obscure punctures; female frons convex, smooth,  
 shining, often with a very weakly elevated, obscure, median carina extending from epistomal  
 margin to upper level of eyes; length 1.4–1.6 mm, 2.6 times longer than wide; Lesser Antilles  
 ..... ***A. guadeloupensis* (Schedl)** (p. 326)
- Posterior half of pronotum dull or weakly shining, densely reticulate, with large, close, deeply  
 impressed punctures; frons of male with a distinctly elevated, sharp, longitudinal carina; length  
 of male 1.5 mm, 3.0 times longer than wide; Cayman Islands .....  
 ..... ***A. culmenifrons* Bright, sp. nov.** (p. 322)
- 25(23). Elytral declivity with erect, fine setae on all interstriae except 2, 2 widened near middle, smooth,  
 flattened; anterior margin of pronotum with an acutely elevated, slightly undulating line,  
 distinct serrations absent; posterior portion of pronotum subopaque, rugulose; length 1.7 mm,  
 2.7 times longer than wide; Cuba, Puerto Rico, Dominican Republic .....  
 ..... ***A. pallidus* (Blackman)** (p. 336)
- Elytral declivity either with setae in all interstriae or glabrous; anterior margin of pronotum  
 with a row of more or less distinct serrations; posterior portion of pronotum with punctures  
 ..... **26**
- 26(25). Elytral vestiture consisting of distinct, regular rows of short, spatulate setae in each interstriae  
 extending from base to apex, setae on declivity more distinctly spatulate; frons punctured,  
 surface slightly irregular; length 1.2–1.4 mm, 2.8 times longer than wide; widely distributed  
 ..... ***A. ineditus* Bright, sp. nov.** (p. 331)
- Elytral declivity glabrous or with a very few, short, fine setae in interstriae 3; body black ... **27**
- 27(26). Punctures in declivital striae and on posterior half of pronotum very small, very weakly impressed;  
 length 1.6–2.0 mm, 2.6 times longer than wide; Jamaica, Dominican Republic .....  
 ..... ***A. niger* (Bright)** (p. 335)
- Punctures in declivital striae and on posterior half of pronotum larger, more deeply impressed;  
 length 1.5–1.6 mm, 2.6 times longer than wide; Cuba .....  
 ..... ***A. nigriculus* Bright, sp. nov.** (p. 335)
- 28(21). Anterior margin of pronotum with an acutely elevated, very slightly crenulate, not serrate, costa;  
 elytral declivity with a row of fine setae in each interstriae except 2; apex of abdominal sternite 5  
 acutely margined and elevated in a semicircular prominence; length 1.6 mm, 2.6 times longer than  
 wide; Dominican Republic ..... ***A. ciseruditus* Bright, sp. nov.** (in part) (p. 320)
- Anterior margin of pronotum distinctly serrate; elytral declivity largely glabrous; apex of abdominal  
 sternite 5 not elevated or acutely margined; length 1.8–2.1 mm, 2.7 times longer than wide;  
 Jamaica ..... ***A. adustus* Bright, sp. nov.** (p. 317)

***Araptus adustus* Bright, sp. nov.**

Figure 233.

**Type Material.** HOLOTYPE (male) labeled: “JAMAICA, Try., Barbeque Bottom, VIII.13.1966, H. F. Howden” / “HOLOTYPE *Araptus adustus* D. E. Bright 2016” (CNCI). PARATYPE (1) labeled: “JAMAICA, Try., Duncans, VIII.7.1966, Howden and Becker” (CNCI).

**Description (Male).** Length 1.8–2.1 mm, 2.7 times longer than wide; dark reddish-brown. Frons weakly, narrowly, transversely impressed above epistoma, weakly convex to above upper level of eyes; median carina obscure, very weakly elevated, extending to above upper level of eyes; surface shining, obscurely, finely punctured, interspaces with minute fine punctures. Antennal club large, 1.3 times longer than wide; sutures straight, transverse, bordered by short, dense setae. Pronotum 1.2 times longer than wide, widest just behind middle; sides weakly arcuate, more strongly so on anterior half; anterior margin narrowly rounded, bearing four, contiguous, blunt serrations; anterior slope bearing numerous, scattered, low asperities, not arranged in any order; posterior and lateral areas dull, minutely reticulate, finely punctured, punctures obscure, moderately large, close, weakly impressed; lateral margin acutely rounded, elevated line not evident. Elytra 1.7 times longer than wide, glabrous; sides weakly arcuate on anterior two-thirds, apex narrowly rounded; discal striae not impressed, punctures obscure, weakly impressed in irregular rows; discal interstriae flat, weakly shining, finely rugose-reticulate, 1.5–2.0 times wider than striae. Declivity convex; striae 1 very weakly impressed, remaining striae not impressed; interstriae not modified, surface as on disc, without granules or other modifications.

**Female.** Unknown.

**Distribution.** This species is known from Jamaica.

**Etymology.** From *adustus*, Latin for brown, referring to the color of the adult female.

**Comments.** Males of this species are similar to those of *A. ciseruditus* but differ by the absence of an elevated apex on the last visible abdominal sternite.

***Araptus beckeri* Bright, sp. nov.**

Figures 234, 235.

**Type Material.** **HOLOTYPE** (female) labeled: “JAMAICA, 4000', Hardwar Gap, VII.10.1966, Howden and Becker” / “HOLOTYPE *Araptus beckeri* D. E. Bright 2016” (CNCI). **PARATYPES** (2): 1 labeled: “JAMAICA, Manch., Mizpah, VIII.16.1966” (CNCI); 1 labeled: “DOMINICAN REP.: Province Barahona, nr. Filipinas, Larimar Mine, 26.VI-7.VII.1992, Woodruff and Skelley, flight trap” (FSCA).

**Description (Female).** Length 1.9–2.2 mm, 2.9 times longer than wide; dark reddish-brown. Frons flattened on a semicircular area extending from epistoma to above upper level of eyes and laterally 80% of distance between eyes; surface shining, minutely reticulate, bearing a median, circular brush of short, erect setae, median portion of brush glabrous, smooth, impunctate on an area much smaller than antennal club; epistoma bearing a row of sparse, long setae, these extending halfway to apex of mandible. Antennal club large, 1.3 times longer than wide; sutures strongly procurved, bordered by short, dense setae; suture 1 extending almost halfway to one-quarter distance to apex. Pronotum 1.1 times longer than wide, widest on basal half; sides straight on basal half, strongly converging to narrowly rounded anterior margin; anterior margin bearing 14 low, broad, basally contiguous serrations; lower portion of anterior slope bearing numerous, scattered, low asperities, not arranged in any order, these forming long, low ridges on area just below summit; posterior and lateral areas shining, smooth, with close, deep punctures; lateral margin with an acutely elevated line. Elytra 1.8 times longer than wide; sides straight on anterior two-thirds, apex broadly rounded; discal striae (except 1), not impressed, punctures moderate in size, distinct, punctured in even rows; discal interstriae flat, shining, smooth, 1.5–2.0 times wider than striae, glabrous except near declivity. Declivity convex; striae 1 weakly but distinctly impressed, remaining striae not impressed; each interstriae bearing a median row of erect, narrowly spatulate setae.

**Male.** Unknown.

**Distribution.** This species is known from the Dominican Republic and Jamaica.

**Etymology.** This species is named for the late Edward C. Becker, a long-time friend and colleague at the CNCI and one of the collectors of the holotype.

**Comments.** Females of this species may be recognized by the circular brush of setae on the frons, the center of which is glabrous on a small, circular area and by the interstrial rows of narrow, spatulate setae on the declivity. Males of this species are unknown.

***Araptus bituberculatus* Bright, sp. nov.**

Figures 236, 237.

**Type Material.** HOLOTYPE (male?) labeled: "PUERTO RICO: Guaynabo, 21.II.96, J. Torres, collr." / "ex. light trap 14" / "HOLOTYPE *Araptus bituberculatus* D. E. Bright 2016" (CNCI).

**Description (Male?).** Length 1.7 mm, 2.7 times longer than wide; light yellowish-brown. Frons weakly transversely impressed from epistoma to halfway to upper eye margin, central area of impression slightly more deeply impressed, lateral area of upper margin of impression bearing a pair of weakly, acutely elevated tubercles; surface weakly shining, minutely reticulate, with small, obscure punctures, vestiture inconspicuous; epistomal margin weakly sinuate with a small granule on lateral margin slightly above antennal insertion. Antennal club broadly oval, 1.3 times longer than wide; sutures strongly arcuate, distinct, marked by rows of short setae. Pronotum 1.1 times longer than wide, widest behind middle; sides weakly arcuate, more strongly so on anterior half; anterior margin broadly rounded, with an elevated, very weakly undulating ridge; anterior slope bearing numerous, scattered, low asperities, not arranged in any order; posterior and lateral areas dull, minutely reticulate, with obscure punctures; lateral margin with an acute elevated line extending from basal angles almost to anterior margin. Elytra 1.4 times longer than wide; sides parallel on anterior two-thirds, apex broadly rounded; discal striae not impressed, punctured in even rows, punctures moderately coarse, weakly impressed; discal interstriae 1.5–2.0 times wider than striae, flat, weakly shining, minutely reticulate without impressed fine punctures, interstriae 1, 3, 5 and 7 bearing a few, erect, narrowly flattened setae, these as long as interstrial width. Declivity evenly convex; striae 1 very weakly impressed, remaining striae not impressed; surface as on disc, without granules or other modifications, interstriae 1, 3, 5 and 7 bearing a median row of erect, fine setae.

**Female.** Unknown.

**Distribution.** This species is known from Puerto Rico.

**Etymology.** This species is named for the presence of a pair of tubercles on the epistoma of the male.

**Comments.** Unfortunately, only one specimen of this species is known. It is presumably a male but the sex has not been definitely determined. Adults (males?) of this species may be readily recognized by the acutely margined lateral margin of the pronotum, by the presence of a small tubercle at the lateral margins of the epistoma, by the acutely elevated anterior margin of the pronotum, by the evenly convex elytral declivity and by the features of the frons as described above.

***Araptus caperatus* Bright, sp. nov.**

Figure 238.

**Type Material.** HOLOTYPE (male?) labeled: "CUBA: Guantanamo crest, La Farola, 545 m, 20.17071–74.48402, 4.X.2014, R. Anderson, F. Cala-Riquelme, A. Deler Hernandez, 2014–030, mixed pine forest litter" / "HOLOTYPE *Araptus caperatus* D. E. Bright 2016" (CMNO).

**Description (Male?).** Length 1.2 mm, 2.8 times longer than wide; dark reddish-black. Frons convex; surface shining, with scattered, large punctures; vestiture inconspicuous except short setae along epistomal margin. Antennal club oval, 2.0 times longer than wide; suture 1 slightly arcuate, weakly chitinized, suture 2 similar, not chitinized. Pronotum 1.1 times longer than wide, widest behind middle; sides slightly arcuate; anterior margin moderately rounded, with an acute, very slightly crenulate, elevated line; lower half of anterior slope bearing dense, scattered asperities and inconspicuous, short setae, area from slightly below summit to well behind summit bearing unusually long, transversely arcuate, shining costa or

ridges, these extending onto lateral areas, surface between ridges weakly shining to dull, densely reticulate to minutely punctured; posterior portion moderately shining, minutely punctured, with faint, shining costa. Elytra 1.6 times longer than wide; sides parallel on basal three-fourths, narrowly rounded at apex; discal striae not impressed, punctured in regular rows, punctures shallow, obscure; discal interstriae wider than striae, shining, with small, randomly placed punctures, with a median row of erect, narrowly spatulate setae, these as long as distance between rows. Declivity convex, striae 1 very weakly impressed, otherwise as on disc.

**Female.** Unknown.

**Distribution.** This species is known from Cuba.

**Etymology.** From *capero*-, Latin for wrinkle, referring to the pronotal discal surface.

**Comments.** Adults of this species may be easily recognized by the unique appearance of the pronotal disc. In the adults of all known species of *Araptus*, the pronotum is typically asperate on the anterior slope below the summit and smooth and punctured behind the summit. In the adults of this species, the discal surface bears long, shining, transversely arcuate costa or ridges which extend onto the lateral surface and onto the portion behind the summit. Other characteristic features are mentioned in the above key to species.

Unfortunately, only one specimen of this species is known; however, it should be readily recognized by the pronotal characters.

***Araptus ciseruditus* Bright, sp. nov.**

Figure 239.

**Type Material.** **HOLOTYPE** (female) labeled: “**DOM. REP.**, M. Nouel, Banao, uv trap, IX.4.1997, C. W. O’Brien and R. Baranowski” / “**HOLOTYPE** *Araptus ciseruditus* D. E. Bright 2016” (CNCI). **PARATYPE** (1) labeled: “**DOMINICAN REPUBLIC:** Duarte, Reserva Loma Quita Espuela El Cadillar, 6.7 km NE San Francisco de Macoris, 19–20–12N, 70–08–59W” / “280 m, 5 Apr 2004, R. Davidson, J. Rawlins, C. Young, weedy growth with coffee, cacao, uv light, Sample 50313” / “Carnegie Museum Specimen Number CMNH-350.502” (CMNH).

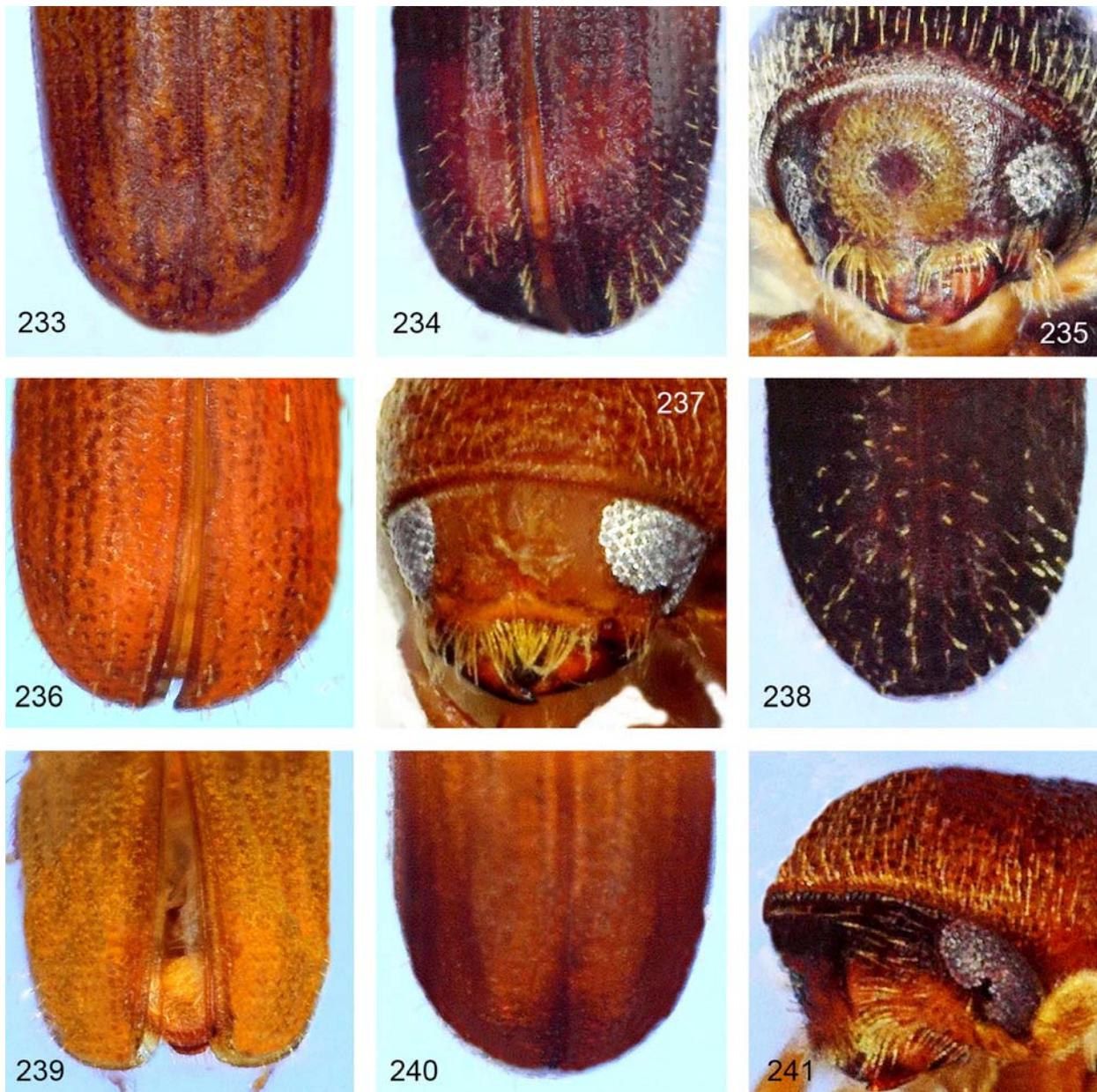
**Description (Female).** Length 1.6 mm, 2.6 times longer than wide; light yellowish-brown. Frons weakly flattened from epistoma to above upper level of eyes; surface shining, with small, obscure punctures, vestiture inconspicuous; epistomal margin slightly elevated. Antennal club small, as long as wide; sutures weakly arcuate, obscure. Pronotum 1.1 times longer than wide, widest at middle; sides weakly arcuate, more strongly so on anterior half; anterior margin narrowly rounded, with an elevated ridge bearing a few, obscure, very low serrations; anterior slope bearing numerous, scattered, low asperities, not arranged in any order; posterior and lateral areas dull, minutely reticulate, with obscure punctures; lateral margin acutely rounded, elevated line not evident. Elytra 1.65 times longer than wide, glabrous; sides weakly arcuate on anterior two-thirds, apex broadly rounded; discal striae 9 (except 1) not impressed, punctured in even rows, punctures moderately coarse, somewhat obscure, weakly impressed; discal interstriae 1.5–2.0 times wider than striae, flat, smooth, weakly shining, bearing scattered minute fine punctures. Declivity convex; striae 1 very weakly impressed, remaining striae not impressed; interstriae rounded, surface as on disc, without granules or other modifications; each interstriae bearing a median row of erect, fine setae. Apex of last abdominal segment acutely elevated.

**Male.** Similar to female except frons deeply impressed.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** From *cis*, Latin for near, e.g. near *A. eruditus*.

**Comments.** Adults of this species may be recognized by the acutely margined and elevated fifth abdominal sternite, by the presence of a row of fine setae in each elytral interstriae except 2 and by the deeply



**Figures 233–241.** Adult features of *Araptus* spp. **233** *A. adustus* (declivity). **234** *A. beckeri* (declivity). **235** *A. beckeri* (frons). **236** *A. bituberculatus* (declivity). **237** *A. bituberculatus* (frons). **238** *A. caperatus* (declivity). **239** *A. ciseruditus* (declivity). **240** *A. cubensis* (declivity). **241** *A. culmenifrons* (frons).

impressed male frons and flattened female frons.

The female of this species is very similar to those of *A. eruditus* (Schedl) from southern Mexico to Central America.

***Araptus cubensis* (Blackman)**

Figure 240.

*Neodryocoetes cubensis* Blackman 1942: 191.

*Araptus cubensis*: Wood and Bright 1992: 955.

**Description (Female).** Length 1.5–2.0 mm, 2.4 times longer than wide; reddish-brown. Frons broadly flattened from epistoma to well above eyes and laterally from eye to eye; surface shining, densely punctured, with short setae over surface and a fringe of longer, curved, yellowish setae, longest of these on vertex extending downward almost to epistoma to less than half the distance to epistoma. Antennal club narrowly elongate, 1.4 times longer than wide; suture 1 distinctly arcuate, chitinized; suture 2 obscure, weakly arcuate, not chitinized. Pronotum as long as wide, widest at base; sides weakly, evenly arcuate, anterior margin broadly rounded, with a row of 12 low, basally contiguous serrations; anterior slope with four arcuate rows of basally contiguous asperities, a fifth short, weakly elevated, obscure row often visible at summit; surface between rows shining, weakly reticulate and weakly punctured; summit weakly elevated, transverse impression behind summit obscure; posterior portion moderately shining, minutely reticulate, with large, weakly impressed punctures. Elytra 1.5 times longer than wide; sides parallel on basal three-fourths, broadly rounded at apex; discal striae (except 1) not impressed, punctured in even rows; discal interstriae wider than striae, glabrous. Declivity evenly convex, not impressed; striae and interstriae as on disc.

**Male.** Similar in size to female; frons convex, weakly, transversely impressed above epistoma; surface shining, minutely reticulate, with a few, short setae. Pronotum, elytra and declivity as in female.

**Distribution.** This species is known from Cuba.

**Specimens examined. CUBA:** Cayamas, January and February, E. A. Schwarz (23–USNM, 3–CNCI).

**Comments.** Adults of this species may be distinguished by the four evenly concentric rows of asperities on the anterior slope of the pronotum and by the evenly convex elytral declivity.

The holotype and paratypes were examined.

***Araptus culmenifrons* Bright, sp. nov.**

Figure 241.

**Type Material. HOLOTYPE** (male) labeled: “WEST INDIES: CAYMAN IS., Grand Cayman, VI.1992: Fitzgerald, blacklight trap” / “HOLOTYPE *Araptus culmenifrons* D. E. Bright 2016” (FSCA).

**Description (Male).** Length 1.5 mm, 3.0 times longer than wide; reddish-brown. Frons slightly convex, with a distinct, sharply elevated, longitudinal carina extending from epistomal margin to level of upper margin of eyes, this carina more highly elevated on epistomal area; surface on each side of carina shining, minutely rugose and faintly aciculate, especially near carina; epistomal margin slightly emarginate, fringed with short setae. Antennal club 1.1 times longer than wide, widest at middle; suture 1 moderately arcuate, chitinized at lateral margins; suture 2 obscure, faint, appearing more strongly arcuate, not chitinized at lateral margins, marked by an obscure row of setae. Pronotum 1.1 times longer than wide, widest at base; sides weakly arcuate, lateral margins acutely rounded, with a faint elevated line on basal half; anterior margin narrowly rounded, bearing a row of eight small, basally contiguous serrations, median four slightly larger; anterior slope gradually sloping, with scattered, very small asperities; summit not elevated, located at middle; posterior half dull, with close, deep punctures, these separated by a distance less than their diameters, interpuncture space distinctly, deeply, minutely reticulate. Elytra 1.5 times longer than wide; discal striae punctured in even rows, punctures equal in size to those on basal portion of pronotum, each with a minute seta; discal interstriae 1.5 times wider than striae, glabrous but with one or two short setae in interstriae 3. Declivity evenly convex; striae 1 slightly impressed, punctures smaller than on disc; remaining striae very weakly impressed, with very small punctures; interstriae 1 not elevated, smooth, with a median row of three erect setae, these longer than interstitial width; interstriae 2 not impressed, smooth, glabrous; interstriae 3 not elevated, bearing a median row of five erect setae, these longer than interstitial width and a row of minute granules; interstriae 4 as in 2, interstriae 5 as in 3.

**Female.** Unknown.

**Distribution.** This species is known from the Cayman Islands.

**Etymology.** From *culmen*-, Latin for top or crown, plus frons, referring loosely to the carina on the frons of the male.

**Comments.** Only the male of this species is known. Ordinarily a damaged specimen (the left elytron is missing), such as the holotype of this species, would not be described and named. However, in this case, the distinctive features of the species are unique and visible on the holotype and its future recognition should be possible. The male is distinctive by bearing a strongly elevated, sharp, longitudinal carina on the weakly convex frons. In addition, the male may be distinguished by the large, deep, close punctures on the basal half of the pronotum, by the dull or weakly shining, distinctly reticulate interpuncture space on the basal portion of the pronotum and by the convex elytral declivity which bears a few setae on interstriae 1, 3, 5, and 7.

***Araptus decorus* (Bright)**

Figures 242, 243.

*Neodryocoetes decorus* Bright 1972: 96.

*Araptus decorus*: Wood and Bright 1992: 955.

**Description (Male).** Length 1.7–1.9 mm, 2.2 times longer than wide, reddish-brown. Frons convex above upper level of eyes, flattened, somewhat concave below caused by a shallow, broad, median impression; median carina prominent, faintly elevated at epistomal margin, becoming more strongly elevated at median area and upwards, extending to above upper level of eyes; surface shining, densely punctured, appearing minutely rugose caused by upraised edges of close-set punctures, the punctures close, deeply impressed. Antennal club large, 1.1 times longer than wide, with two strongly arcuate sutures, 1 strongly arcuate, 2 more broadly arcuate. Pronotum 1.1 times longer than wide, widest just behind middle; sides arcuate, more strongly so on anterior half; anterior margin narrowly rounded, bearing 10–15 contiguous, blunt asperities; anterior slope bearing numerous, scattered, low asperities, not arranged in any order; posterior and lateral areas finely asperate-punctate, the asperities formed by the upraised edges of each puncture, the punctures large, close, impressed; lateral line sharply elevated on posterior half. Elytra 1.6 times longer than wide; sides parallel on anterior two-thirds, broadly rounded behind; striae, except first, not impressed, punctures of moderate size, impressed in irregular rows; interstriae convex, finely rugose, bearing abundant, distinct punctures, these slightly smaller than strial punctures, giving entire elytra a confusingly punctured appearance; vestiture consisting of very short, stout, strial and interstitial setae, interstitial setae somewhat longer than strial setae on disc and posteriolateral areas, all setae equal in length on declivity; each seta separated from one another on declivity by a distance equal to their own length. Declivity convex; interstriae 1 and 3 slightly elevated; interstriae 2 flattened, very slightly impressed; striae and vestiture as on disc.

**Female.** Similar in size and proportion to male. Frons distinctly, shallowly concave, densely pubescent in concavity, with longer, incurved setae on periphery, no median carina is evident; surface sculpture of pronotum and elytra finer; pubescence finer.

**Distribution.** This species is known from Jamaica.

**Specimens examined. JAMAICA:** Trelawny Parish, Good Hope, 17 August 1966, H. F. Howden (2–CNCI); Trelawny Parish, Barbecue Bottom, 10 August 1966, A. T. Howden (1–CNCI); Westmoreland Parish, Bluefields, Calden Est., 8.XII.1969, 1000 ft., L. E. G. Farnworth, blacklight trap (1–FSCA); Manchester Parish, Mandeville, DeCarteret College, 19.V.1969, R. E. Woodruff and K. Stanton, blacklight trap (1–FSCA).

**Comments.** Adults of this species may be easily recognized by the prominent longitudinal carina on the frons of the male, by the slightly concave, pubescent frons of the female, by the densely punctured elytra and by the slightly elevated declivital interstriae 1 and 3.

***Araptus ferrugineus* Bright, sp. nov.**

Figures 244, 245.

**Type Material.** HOLOTYPE (male?) labeled: "Acc. 4860, Gourbeyre, **GUADELOUPE**" / "HOLOTYPE *Araptus ferrugineus* D. E. Bright 2016" (CNCI).

**Description (Male?).** Length 1.8 mm, 2.5 times longer than wide; reddish-brown. Frons strongly convex between eyes, area between epistoma and lower level of eyes strongly, transversely inflated; surface above inflated area minutely reticulate, with scattered, fine, obscure punctures and a weakly elevated, longitudinal median elevation, surface of inflated area weakly shining, minutely rugose; epistomal margin impressed, straight. Mandibles very large, stout, cutting edge straight. Antennal club oval, 1.3 times longer than wide; suture 1 strongly arcuate, distinctly chitinized, other sutures obscure, not chitinized. Pronotum as long as wide, widest at slightly behind middle; sides weakly, broadly arcuate; anterior margin narrowly rounded, weakly serrate; anterior slope bearing numerous, scattered, obscure asperities, not arranged in any order; posterior and lateral areas shining, with distinct, large, impressed punctures, these separated by a distance equal to their diameters, interpuncture space with minute fine punctures; lateral margin with an elevated line. Elytra 1.6 times longer than wide, glabrous; sides weakly arcuate on anterior two-thirds, apex broadly rounded; discal striae (except 1) not impressed, punctured in even rows, punctures moderately coarse, weakly impressed; discal interstriae 2.0–3.0 times wider than striae, flat, smooth, shining, impunctate. Declivity evenly convex; striae 1 very weakly impressed, remaining striae not impressed; interstriae rounded, without granules or other modifications except a few, short, very obscure setae in interstriae 1, 3 and 5.

**Female.** Unknown.

**Distribution.** This species is known from Guadeloupe.

**Etymology.** From *ferrugineus*, Latin for tawny, referring to the color of the holotype.

**Comments.** The male of this species is characterized by the very large, stout mandibles and by the transversely elevated, inflated area of the frons between the epistoma and the lower level of the eyes, the lateral margin of which extends beyond the lateral margin of the eyes. In addition, the declivity is evenly convex and not modified to any extent. The female is not known.

***Araptus fuscus* Bright, sp. nov.**

**Type Material.** HOLOTYPE (female) labeled: "**DOMINICAN REPUBLIC:** Independencia, Sierra de Neiba just south of crest, 5 km NW Angel Feliz, 1780 m." / "18–41N, 71–47W, 13–15 October 1991, J. Rawlins, R. Davidson, C. Young, S. Thompson, Cloud forest" / "Carnegie Museum Specimen Number CMNH-350, 177" / "HOLOTYPE *Araptus fuscus* D. E. Bright 2016" (CMNH).

**Description (Female).** Length 1.6 mm, 3.1 times longer than wide; black. Frons flattened from epistoma to vertex and laterally from eye to eye; surface bearing a dense brush of yellowish setae, these longer on upper margin and extending almost to epistoma, those along inner border of eye extending mesad to center, surface sculpture concealed by brush. Antennal club as long as wide, widest on distal half; suture 1 strongly arcuate, chitinized, other sutures not evident, not chitinized. Pronotum 1.2 times longer than wide, widest neat middle; sides weakly arcuate; anterior margin narrowly rounded, with a row of 12 small serrations, median pair much shorter (may be abraded); anterior slope bearing numerous, scattered asperities; summit not elevated; posterior portion dull, minutely reticulate, with numerous, large, deep punctures, these separated by a distance much less than their diameters. Elytra 2.0 times longer than wide; sides parallel on basal three-fourths; apex narrowly rounded; discal striae punctured in even rows, punctures small, weakly impressed; discal interstriae brightly shining, impunctate, glabrous. Declivity evenly convex; striae 1 very weakly impressed; remaining surface as on disc.

**Male.** Unknown.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** From *fuscus*, Latin for dark, swarthy or black, referring to the color of the adult.

**Comments.** Female of this species may be recognized by the slender body, by the evenly convex elytral declivity, by the weakly impressed striae 1 on the declivity and by the dense brush of incurved setae on the frons. Females of this species resemble those of *A. howdeni* but are much more slender, black and the elytral declivity of *A. howdeni* is more evenly convex with striae 1 not impressed. The male of this species is unknown.

***Araptus grenadaensis* Bright, sp. nov.**

Figures 246, 247, 248.

**Type Material.** **HOLOTYPE** (female) labeled: "West Indies: **GRENADA**, Saint Andrew, Mirabeau Agric. Lab., 19.III.1990, A. Thomas, light trap" / "HOLOTYPE *Araptus grenadaensis* D. E. Bright 2016" (FSCA). **ALLOTYPE** labeled with same data as holotype except date is "27.III.1990" plus my allotype label (FSCA). **PARATYPES** (42): 41 labeled with same locality data as holotype except various dates in 1990 and different collectors (CNCI, FSCA, SBPC); 1 labeled: "LESS. ANTILLES, **GRENADA**, Saint Patricks Plaines, 13.V.1990, light trap, F. Noel" (SBPC).

**Description (Female).** Length 1.6–1.8 mm, 2.6 times longer than wide; light brown. Frons weakly convex from epistoma to above upper eye level, with weakly elevated, longitudinal carina, this carina more strongly elevated on upper half; surface weakly shining, closely punctate-granulate, with numerous, short, erect setae, these half as long as antennal scape; epistoma very slightly emarginate at middle, with a fringe of short, yellowish setae. Antennal club large, 1.3 times longer than wide; suture 1 strongly procurved, chitinized, suture 2 procurved, not chitinized. Pronotum 1.2 times longer than wide, widest near base; sides weakly arcuate, anterior margin broadly rounded, unarmed; lateral margin acutely margined by a fine raised line extending from base to near anterior margin; discal surface evenly convex, summit not elevated; anterior slope densely asperate, asperities small, slightly elevated, arranged in no apparent order; posterior surface with numerous, large, deeply impressed punctures, these separated by a distance less than their diameters, interpuncture space moderately shining, with minute fine punctures. Elytra 1.4 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae punctured in regular rows except on area near base where punctures are more randomly placed, punctures slightly impressed, each with a minute seta; discal interstriae 2.0 times wider than striae, shining, with minute fine punctures; discal interstriae 1 with a median row of sparse, fine, narrow setae, interstriae 3,5,7 and 9 each with several small, narrowly spatulate scales, these shorter than interstitial width. Declivity evenly convex; striae 1 narrow, weakly impressed, remaining striae not impressed; interstriae not impressed, 1,3,5, and 7 each with a median row of short, narrowly flattened scales.

**Male.** Similar to female except frons more strongly convex, with longitudinal carina more evenly elevated, surface with sparser, shorter setae.

**Distribution.** This species is known from Grenada.

**Etymology.** This species is named for the type locality.

**Comments.** Adults of *A. grenadaensis* may be distinguished by the presence of a distinct carina on the frons of both sexes, by the very small serrations on the anterior margin of the pronotum and by the large antennal club with a strongly arcuate suture 1.

***Araptus guadeloupanus* Wood**

Figure 249.

*Brachydendrulus guadeloupenis* Schedl 1970: 91 (preoccupied).*Araptus guadeloupanus* Wood 1989: 177; Wood and Bright 1992: 957.

**Description (Male?).** Length 2.0–2.3 mm, 2.6 times longer than wide; dark reddish-brown. Frons convex; surface densely, deeply, closely punctured, with a distinct elevated carina on upper half above upper eye level, lower half very weakly transversely impressed, interpuncture surface shining, minutely reticulate; epistoma moderately deeply emarginate at middle, fringed by a brush of long, yellowish setae. Antennal club large, circular, as long as wide, longer than scape; sutures 1 and 2 moderately procurved, aseptate, marked by a row of short setae. Pronotum 1.3 times longer than wide; sides weakly arcuate, anterior margin broadly rounded, bearing more than 12 large, acute, basally contiguous serrations; asperities on anterior slope scattered in no apparent order; summit weakly but distinctly elevated, located at middle; posterior surface smooth, deeply punctured, punctures separated by a distance less than diameter of punctures, interpuncture space shining, with minute fine punctures. Elytra 1.5–1.6 times longer than wide; sides weakly arcuate, apex broadly rounded, apical margin ascending from base of declivity to suture, pygidium visible; discal striae (except 1) not impressed, punctured in regular rows, punctures small, each with a very short seta; discal interstriae dull, minutely sculptured with fine lines and impressed fine punctures, 2.0–3.0 times wider than striae, each with a median row of long, erect setae, these as long as interstitial width and very slightly flattened and subcapitate. Declivity evenly convex; all striae weakly impressed, 1 slightly deeper than others; interstriae 1 slightly elevated, unarmed, with a median row of setae; remaining interstriae not elevated, unarmed, with a median row of setae.

**Female.** Unknown.

**Distribution.** This species is known from Guadeloupe.

**Specimens examined. GUADELOUPE:** BT: Sofaia, 6 km SW Ste. Rose, V.22.1985, C. W. and L. B. O'Brien (4-CNCI); BT: Fefe Forest, near Capesterre, V.25.1985, C. W. and L. B. O'Brien (3-CNCI).

**Comments.** This is one of the species of *Araptus* that could easily be placed in *Pityophthorus*. Adults have a distinctly elevated pronotal summit with a transverse impression behind the summit and antennal suture 1 is moderately arcuate while the remaining sutures are strongly arcuate. However, the antennal sutures are not chitinized and therefore this species is placed in *Araptus*. In addition to these characters, adults may be distinguished by the evenly convex elytral declivity, which bears conspicuous setae in a median row in each interstriae and by the densely punctured frons of the male (?) with a longitudinal carina on the upper portion above the upper eye level.

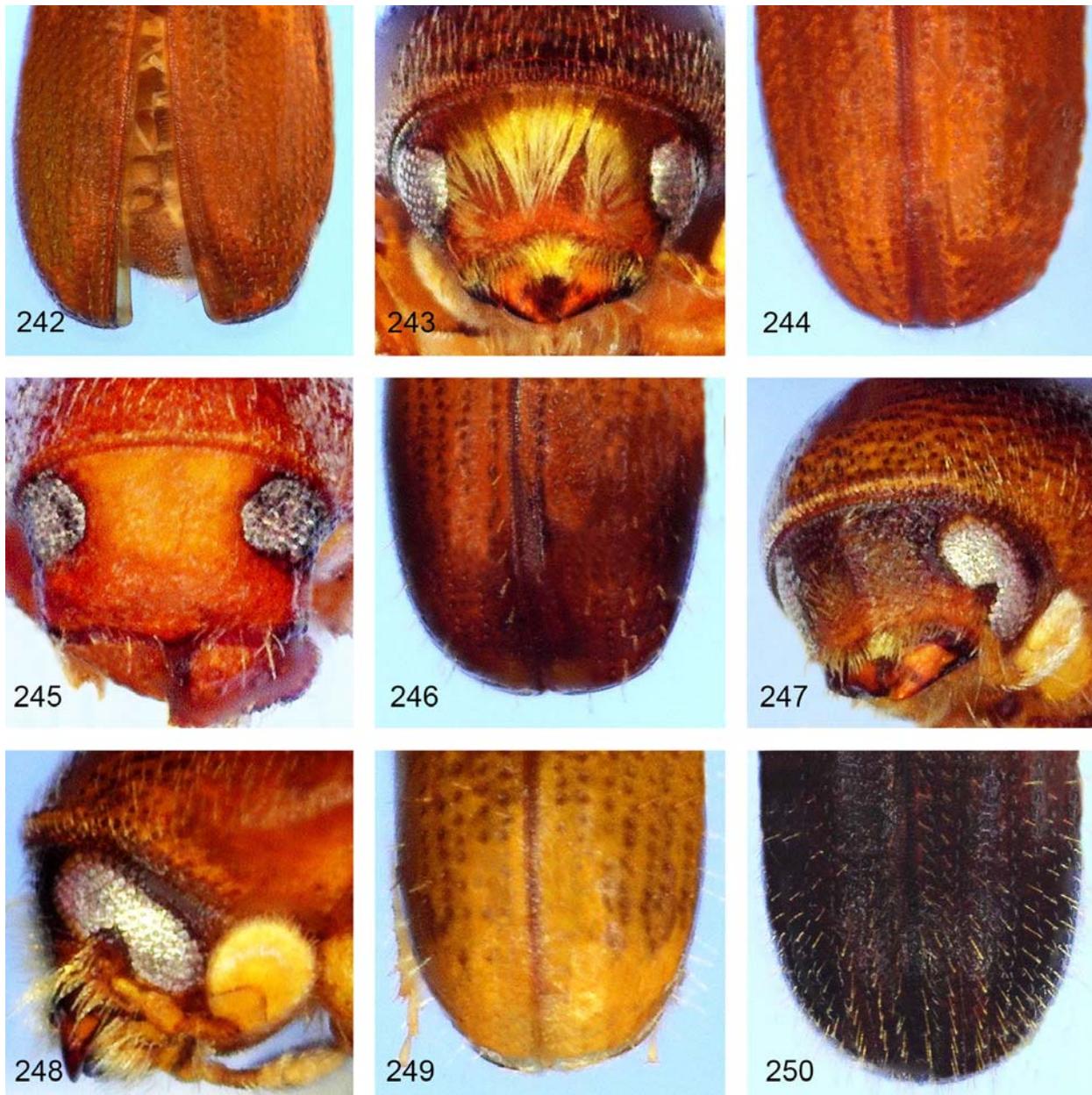
The sex of the specimens in the type series has not been definitely ascertained, but all are probably males. The holotype in the NHMW was examined.

***Araptus guadeloupenis* (Schedl), Resurrected Name**

Figure 250.

*Neopityophthorus insularis* Eggers 1940: 130 (preoccupied).*Neodryocoetes guadeloupenis* Schedl 1951: 73; Wood and Bright 1992: 958 (as synonym of *A. laevigatus*); Wood 2007: 579 (as synonym of *A. laevigatus*).

**Description (Female).** Length 1.4–1.6 mm, 2.6 times longer than wide; reddish-brown. Frons evenly convex from epistoma to above upper level of eyes, often with a very obscure, narrow, longitudinal, smooth, smooth line; surface brightly shining, finely punctured, with a few, scattered, short, erect setae; epistomal margin slightly arcuate, with a fringe of short setae. Antennal club less than 1.1 times longer than wide; suture 1 obscure, very weakly arcuate, weakly chitinized at lateral margins, suture 2 similar. Pronotum 1.1–1.2 times longer than wide, widest just before base; sides weakly, evenly arcuate on basal two-thirds; anterior margin broadly rounded, with 10 basally contiguous, very low, obscure serrations;



**Figures 242–250.** Adult features of *Araptus* spp. **242)** *A. decorus* (declivity). **243)** *A. decorus* (frons). **244)** *A. ferrugineus* (declivity). **245)** *A. ferrugineus* (frons). **246)** *A. grenadensis* (declivity). **247)** *A. grenadensis* (frons). **248)** *A. grenadensis* (antennal club). **249)** *A. guadeloupanus* (declivity). **250)** *A. guadeloupenensis* (declivity).

anterior slope bearing numerous, scattered, low asperities, not arranged in any order; posterior and lateral areas brightly shining, with a few obscure punctures and very fine, raised lines or weak asperities; lateral margin with an acute, elevated line on basal half. Elytra 1.7 times longer than wide; sides weakly arcuate on anterior two-thirds, apex narrowly rounded; discal striae not impressed, punctured in vague rows, punctures usually obscure, close, weakly impressed; discal interstriae 2.0–4.0 times wider than striae, flat, smooth, shining, with obscure punctures. Declivity evenly convex, unmodified except interstriae 1, 3, 5 and 7 each with a row of sparse, erect, hairlike to very narrowly spatulate setae, some of these distinctly longer and finer along apical margin and on exposed terminal abdominal segment.

**Male.** Very similar to female, recognized by abdominal segmentation.

**Distribution.** This species is known from the Lesser Antilles.

**Specimens examined.** **DOMINICA:** 0.6 mi. N of Pont Casse, XII.14.1964, T. J. Spilman / Bredin-Archbold-Smithsonian Survey (42-USNM); Roseau, IX.9.1964, T. J. Spilman / Bredin-Archbold-Smithsonian Survey (2-USNM); Fond Figues, T. J. Spilman, VIII.4.1964 / Bredin-Archbold-Smithsonian Survey (6-USNM); Middleham Falls Trail, Cochrane, 31.V-11.VI.2004, forest flight intercept trap, N15°20.922', W61°20.747', S. and J. Peck (1-SBPC); Springfield Estate, Mt. Joy, 31.V-16.VI.2004 / ridge-top forest, S. and J. Peck (1-SBPC); Springfield Est., Mt. Joy House, 31.V-16.VI.2004, 900', wet montane forest flight intercept trap, S. and J. Peck (1-SBPC). **GRENADA:** Grand Etang Forest Res., N12°04.62', W61°42.16', 10-28.VIII.2010, 400 m, rainforest flight intercept trap, S. Peck (5-SBPC, CNCI). **GADELOUPE:** Basse-Terre: Gourbeyre, FEB 2003, J. Touroult (1-WIBF); Basse-Terre: Gourbeyre, Palmiste, JAN 2003, J. Touroult (2-WIBF); Basse-Terre: Petit Binro, 02 JAN 2003, J. Touroult (1-WIBF); Basse-Terre: Pigeon, Trace Poirier, N16°08.33, W61°45.22 / humid forest flight intercept trap, 350 m, 14-31.V.2012, S. Peck (28-SBPC, CNCI); Basse-Terre: P. N. Guad., Maison de la Foret, N16°17.69, W61°69.39 / wet forest flight intercept trap, 250 m, 14-31.V.2012 (5-SBPC); Morne à Louis, Route du Saint Jeon, 27.V.2012, 16.18618, 61.75063 / wet cloud forest litter, R. Anderson, collr. (3-CMNO). **MARTINIQUE:** 12 km N Fort de France (N-3), Aug. 23, 1988, C. W. and L. B. O'Brien (35-CNCI); Reserve Piton du Carbet, RF de Fond-Baron, piege vitre, 6.7.2006, J. Touroult (6-CNCI); 4 km N Ste-Luce, Foret Montravail, 300 m, N14°29.9, W60°55.7 / humid forest flight intercept trap, 11-28.VII.2012, S. Peck, collr. (9-SBPC, CNCI). **SAINT LUCIA:** Mon Repos, 6.5 km W Fox Grove Inn, 10-28.VI.2007, submontane forest flight intercept trap, S. and J. Peck (1-SBPC).

**Comments.** This species was placed in synonymy under *Pityophthorus laevigatus* Eggers by Wood (1973). During this study, the female holotype of *P. laevigatus* in the MNHN was examined and compared with the type material of *Neodryocoetes guadeloupensis* in the NHMW and with a large number of specimens from the West Indies. The holotype of *P. laevigatus* is from French Guyana and is 2.0 mm in length, 2.7 times longer than wide and the frons is convex and bears a few scattered setae. A long series of specimens, tentatively identified as *A. laevigatus* from the West Indies, are from 1.4-1.5 mm in length, 2.9-3.0 times longer than wide and have a brightly shining, convex frons which bears a weak, longitudinal, median smooth space and is devoid of conspicuous setae. In my opinion, the two taxa are not the same species. *Neodryocoetes guadeloupensis* is herein removed from synonymy with *P. laevigatus*.

Adults of this species may be distinguished by the evenly convex elytral declivity which bears a few, erect, fine to very narrowly flattened setae in interstriae 1, 3, 5 and 7, the setae along the apical margin are noticeably longer and finer than those in the interstriae, by the brightly shining, convex frons which bears a weak, longitudinal, median smooth space, by the nearly straight suture 1 on the antennal club and by the small size. This species is evidently common and widespread in the West Indies.

***Araptus howdeni* Bright, sp. nov.**

Figures 251, 252.

**Type Material.** **HOLOTYPE** (female) labeled: "JAMAICA, Try., Duncans, VIII.22.1966, Howden and Becker" / "HOLOTYPE *Araptus howdeni* D. E. Bright 2016" (CNCI).

**Description (Female).** Length 1.7 mm, 2.6 times longer than wide; pronotum and apical half of elytra dark reddish-brown, basal half of elytra light brown. Frons flattened from epistoma to above upper eye level; surface shining, minutely punctured, with a dense brush of moderately long, incurved setae. Antennal club as long as wide; sutures strongly procurved, bordered by a fringe of short setae. Pronotum as long as wide, widest near base; sides weakly arcuate; anterior margin broadly rounded, armed by a row of 10 low, basally contiguous serrations; lateral margin with a fine, slightly elevated line on basal half; discal surface evenly convex, summit not elevated; anterior slope densely asperate, asperities small, slightly elevated, arranged in no apparent order; posterior surface moderately shining, with numerous, large, deeply impressed punctures, these separated by a distance less than their diameters, interpuncture space minutely reticulate. Elytra 1.5 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae not impressed, punctured in regular rows, punctures small, slightly impressed; discal interstriae 2.0 times wider than striae, shining, with minute fine punctures and scratches. Declivity evenly convex, striae and interstriae unmodified, as on disc.

**Male.** Unknown.

**Distribution.** This species is known from Jamaica.

**Etymology.** This species is named for the late Henry F. Howden, a friend and a colleague and one of the collectors of the holotype.

**Comments.** Only the female of this species is known. It can be distinguished by the dense brush of short, incurved setae on the frons and by the unmodified elytral declivity.

***Araptus hymenaeae* (Eggers)**

Figures 253, 254, 472, 542.

*Neodryocoetes hymenaeae* Eggers 1933: 9.

*Araptus hymenaeae*: Wood and Bright 1992: 957; Bright 2014: 238.

*Neodryocoetes insularis* Eggers 1940: 128 (Guadeloupe).

*Neodryocoetes caribaeus* Blackman 1942: 185 (Trinidad).

*Neodryocoetes guianae* Blackman 1942: 186 (Dominican Republic).

**Description (Male).** Length 1.4–1.7 mm, 2.4 times longer than wide. Frons deeply, triangularly concave from epistoma to upper eye level, cavity without a longitudinal carina, upper margin of cavity with a pair of weakly elevated granules; surface above cavity evenly convex, with a narrow, weakly elevated, impunctate longitudinal elevation, surface dull, minutely reticulate, with weakly impressed punctures; lateral margin above base of mandibles with a pair of distinct granules; epistoma straight, with a fringe of long, yellowish setae, these extending over basal half of mandibles. Mandibles stout, strongly protuberant, dorsal and lateral margins parallel, tips slightly widened. Antennal club oval, 1.3 times longer than wide; suture 1 strongly procurved, chitinized; suture 2 strongly procurved, not chitinized, marked by a row of short setae. Pronotum 1.2 times longer than wide, widest just behind middle; sides broadly arcuate, very weakly constricted in front of middle, lateral margin acutely margined from base almost to anterior margin; anterior margin broadly rounded, acutely elevated, sinuate, not serrate; discal surface evenly arched, elevated summit not present, anterior slope with numerous, small asperities, arranged in no apparent order; posterior third dull, with large, deep punctures, interpuncture surface densely reticulate. Elytra 1.5 times longer than wide; sides weakly arcuate, apex broadly rounded; discal striae not impressed, obscurely punctured in regular rows; discal interstriae 2.0–3.0 times wider than striae, dull, minutely reticulate, interstriae 1, 3, 5, 7 each with a median row of short, erect, narrowly flattened to narrowly spatulate setae, mostly on posterior half. Declivity evenly convex; striae 1 narrow, weakly impressed, remaining striae as on disc; interstriae as on disc, except interstriae 1, 3, 5 and 7 each with a median row of sparse, erect, very short, spatulate setae.

**Female.** Frons flattened to weakly impressed, with a fine, longitudinal carina extending from epistoma to upper level of eyes. Pronotum and elytra as in male.

**Distribution.** This species probably occurs throughout the West Indies and is reported from Panama to northern South America.

**Specimens examined.** **BARBADOS:** Graeme Hall National Sanct., N13°04', W59°35.83', mangrove Malaise, S. and J. Peck (1–SBPC). **CUBA:** Soledad, nr. Cienfuegos, 02 June 1950 (3–WIBF); Havana Province, Marianao, Lot #1, IV.14.1948, ex *Ficus* sp. / FMNH, Guatemala Zool. Exped. (1948), R. L. Wenzel and R. D. Mitchell (6–CNCI, CMNH); Cienfuegos Province, Jardín Botánico de Cienfuegos, 22.12179°N, 80.32646°W, 73 m, mercury vapor light, 21.V.2013, A. B. T. Smith, F. Cala-Riquelme, A. Deler-Hernández (3–CMNO); Santiago de Cuba, 1 km N La Mula, 44 m, 19.95803–76.75264, 2.X.2014, R. Anderson, F. Cala-Riquelme, A. Deler Hernandez, 2014–027, deciduous forest litter (1–CMNO). **DOMINICAN REPUBLIC:** Island record only, in seeds of *Ceratonia* sp. (type series of *Neodryocoetes guianae*) (11–USNM); Azua, 8 km NE Padre Las Casas, Rio Las Cuevas, 580 m, 18–46N, 70–53W, 3–4 October 1991 / C. Young, S. Thompson, R. Davidson, J. Rawlins, riparian growth in arid thorn-scrub (2–CMNH); Distrito Nacional, Boca Chica, 25–26.VII.1997, uv trap, R. Baranowski (1–CNCI); La Altagracia, Parque del Este, 2.9 km SW Boca de Yuma, 18–21–51N, 68–37–05W, 11 m, 29 May 2004 / J. Rawlins, C. Young, C. Nunez, J. Fetzner, semi-humid dry forest, limestone, uv light, Sample 52114 (4–CMNH); La Vega, Hotel Montaña, 25 May 1992, R. Turnbow (1–RHTC); Pedernales, 28 km N Cabo Rojo, 760 m, evergreen dry forest, 29.XI-3.XII.91, intercept trap, Masner and Peck (1–CMNO); Puerto Plata, Pico El Murazo, north slope near summit, 19–41N, 70–57W / 910 m, 28 Nov. 1992,

J. Rawlins, R. Davidson, M. Klingler, S. Thompson, mesic deciduous forest (1-CMNH); intercepted JFKIA, NY, 04-1-83, in *Tamarindus indica*, D. Walters, USDA, 83-3694 (1-USNM). **GUADELOUPE:** Island record only (type series of *Neodryocoetes insularis*) (3-MNHN). **HAITI:** Montrois, 5.VII.1977, blacklight trap, J. H. Frank (2-RHTC). **JAMAICA:** Island record only, 10 December 1937, in *Brownea* seeds (7-USNM); Kingston, Jan 1971, J. H. Frank / *Hymenaea courbaril* pods (5-USNM). **MONTSERRAT:** Cassava Ghaut, Beattie House, 16°45.91'N, 62°12.95'W, 21-30 June 2002, 632 ft., M. A. Ivie, uv light (1-WIBF). **PUERTO RICO:** Guaynabo, various dates in 1995-2000, light trap, J. Torres (5-CNCI). **SAINT LUCIA:** Island record only, April 28, 1936 (1-USNM); Sta. 221, .5 km NW of Saint Remy, on road to Saufriere, 22 Apr. 1936, E. A. Chapin and R. E. Blackwelder (12-USNM, CNCI). **SAINT VINCENT AND THE GRENADINES: Saint Vincent,** Leeward side, H. H. Smith (7-NHML). **VIRGIN ISLANDS (U. S.): Saint Croix,** Est. North Hall, Creque Gut, 100 ft., 06JAN-23FEB 1993, J. Keularts, flight intercept trap (1-WIBF); Sprat Hall, 01-15 Oct 1983, J. A. Yntema, vane trap w/ETOH (2-WIBF).

**Comments.** Adults of this species may be distinguished by the convex elytral declivity which bears widely separated, erect, narrowly spatulate setae on declivital interstriae 1, 3, 5, and 7, by the narrowly rounded, evenly acute non-serrate anterior margin of the pronotum and by the characters of the antennal club as outlined above. Males may be distinguished by the deep, triangularly impressed frons which bears a tubercle at the lateral angles above the base of the mandibles and by the remarkable mandibles which are large and prominent, strongly extended forward, somewhat narrow and curved with dorsal and lateral margins straight and parallel. Females may be distinguished by their flattened to weakly impressed, smooth, brightly shining frons, by the finely asperate posterior portion of the pronotum and by the indistinctly punctured elytral striae.

This species has been intercepted at quarantine stations in the United States several times in various species of seeds.

This species was described from a series of at least 20 specimens currently in the MNHN. All of these bear a label "MUSEUM PARIS, GUYANE FRANÇAISE, GORDONVILLE, R. BENOIST 1914". Two of these specimens, mounted on the same card, bear an additional label "Neodryocoetes hymenaeae n. sp. Type, Eggers det. 1933"; three other specimens, mounted on two cards, bear a similar Eggers identification label except are noted as "Cotype". Fifteen additional specimens do not bear an Eggers identification label. I regard all twenty specimens as syntypes and have designated one of the two specimens labeled "Type" as the lectotype. The actual lectotype is the specimen closest to the pin with a small dot behind it on the mounting card; my lectotype label has been affixed to the pin. One of the remaining specimens, a male, has been selected as the allolectotype; the remaining specimens are paralectotypes. Two additional specimens, with identical labels (but not labeled as paralectotypes), are in the Schedl collection in the NHMW. An additional pair of specimens in the MNHN from French Guiana were not mentioned by Eggers in the original description and are not considered as part of the type series.

*Neodryocoetes insularis* was described from a series of three specimens in the MNHN, labeled "Guadeloupe, Vitrac". Two specimens are mounted on one card with the additional label "Neodryocoetes insularis n. sp. Type, Eggers det. 1932". One of these two specimens is herein designated as the lectotype; it is the specimen just above a small dot on the mounting card, my lectotype label is affixed to the pin. The other two specimens are labeled as paralectotypes.

The type series of *Neodryocoetes guianae*, in the USNM, was examined.

### ***Araptus incolus* Bright, sp. nov.**

Figures 255, 407.

**Type Material. HOLOTYPE** (female) labeled: "WEST INDIES: **GRENADA**, Saint Andrew, Mirabeau Agric. Lab., 18.IV.1999, J. Telesford, light trap" / "HOLOTYPE *Araptus incolus* D. E. Bright 2016" (FSCA). **ALLOTYPE** labeled: "WEST INDIES: **GRENADA**, Par. Saint Andrew, Mirabeau Agr. School, 20.IV.1990, Malaise trap, R. E. Woodruff, J. Telesford" / "ALLOTYPE *Araptus incolus* D. E. Bright 2016" (FSCA). **PARATYPES** (38): 32 labeled: "WEST INDIES: **GRENADA**, Saint Andrew Par., Mirabeau Agric. School" or with various slight variations and with various dates and collectors (CNCI, FSCA, REWC, SBPC); 6 labeled: "WEST INDIES: **GRENADA**, Saint Andrews, Grand Barcolet, 10.IV.1990" (4) and "24.IV.1990" (2), "Malaise trap, A. Thomas or J. Telesford" (SBPC, CNCI).

**Description (Female).** Length 1.7–1.8 mm, 2.5 times longer than wide; light yellowish-brown. Frons slightly flattened from epistoma to above upper level of eyes, with a weakly elevated, longitudinal carina; surface shining, densely, finely punctured, with abundant, short, erect setae; epistomal margin slightly emarginate. Antennal club large, 1.3 times longer than wide; suture 1 strongly arcuate, chitinized at lateral margins, suture 2 similar, not chitinized. Pronotum 1.1 times longer than wide, widest at middle; sides straight to very weakly arcuate, more strongly arcuate on anterior half; anterior margin narrowly rounded, unarmed, without serrations; anterior slope bearing numerous, scattered, low asperities, not arranged in any order; posterior and lateral areas moderately shining, minutely reticulate, with close, deep punctures, these separated by a distance usually less than their diameters; lateral margin with an acute, elevated line on basal three-quarters. Elytra 1.4 times longer than wide, glabrous; sides parallel on anterior two-thirds, apex broadly rounded; discal striae (except 1) not impressed, punctured in even rows, punctures moderately coarse, distinct, close, moderately impressed; discal interstriae 2.0–3.0 times wider than striae, flat, smooth, shining. Declivity convex; striae 1 distinctly impressed, punctures much smaller than those on disc; remaining striae not impressed, with very small punctures; interstriae 1 slightly impressed, with a median row of five or six very short setae; lateral portions evenly rounded, surface as on disc, without granules or other modifications; each interstriae (except 2) bearing a median row of sparse, erect, fine setae.

**Male.** Similar in size to female. Frons convex, with a distinct, longitudinal carina, this more strongly elevated than in female. Epistoma with a pair of rounded granules midway between median emargination and lateral margin. Pronotum and elytra as in female. Declivity more deeply impressed than in female, otherwise as in female.

**Distribution.** This species is known from Grenada.

**Etymology.** From *incola*, Latin for dweller or inhabitant.

**Comments.** Adults of *A. incolus* may be recognized by the convex frons of both sexes, the male with a distinct, longitudinal carina and the female with a brush of short setae. The lateral portion of the epistomal margin is slightly elevated just above the mandibular insertion, this elevation is more distinct in the male.

***Araptus ineditus* Bright, sp. nov.**

Figure 256.

**Type Material.** **HOLOTYPE** (female) labeled: “DOMINICA, Fortune, VIII.6.1964, T. J. Spilman” / “Bredin-Archbold-Smithsonian Survey” / “HOLOTYPE *Araptus ineditus* D. E. Bright 2016” (USNM). **PARATYPES** (9): 1 labeled with same data as holotype (USNM); 2 labeled: “MONTSERRAT: Upper Cassava Ghaut, 24 July 2005, I. A. Foley” (CNCI, WIBF); 2 labeled: “DOMINICAN REP: Province Barahona, nr. Filipinas, Larimar Mine, 26.VI-7.VII.1992, Woodruff and Skelley, flight trap” (CNCI, RHTC); 1 labeled: “PUERTO RICO: El Verde Res. Stat., Plot 11, 05 NOV 1999, K. Beard, leaf litter” (WIBF); 1 labeled with same data as previous record except date is “05 DEC 1999” (CNCI); 1 labeled: “PUERTO RICO: El Verde Research Sta., ridge top in forest, 02–30 SEP 1996, E. Nazario, pitfall” (WIBF); 1 labeled: “PUERTO RICO: Cubuy Pine Forest, Canovanas, *Pinus caribaea*” (USNM).

**Description (Female).** Length 1.2–1.4 mm, 2.8 times longer than wide; light yellowish-brown. Frons weakly convex from epistoma to above upper level of eyes, with a very obscure, short, longitudinal carina extending a short distance above epistomal margin; surface shining, finely punctured, with a few, scattered, short, erect setae; epistomal margin transverse, with a pair of very obscure, close granules at midpoint. Antennal club 1.1 times longer than wide; suture 1 obscure, very weakly arcuate, slightly chitinized at lateral margins, suture 2 slightly more arcuate, not chitinized. Pronotum 1.1 times longer than wide, widest just before base; sides arcuate on basal two-thirds, very slightly constricted before anterior margin; anterior margin narrowly rounded, with six basally contiguous, very low, obscure serrations; anterior slope bearing numerous, scattered, low asperities, not arranged in any order; posterior and lateral areas moderately shining, with close, obscure punctures, these separated by a distance much less than

their diameters; lateral margin with an acute, elevated line on basal three-quarters. Elytra 1.7 times longer than wide; sides weakly arcuate on anterior two-thirds, apex narrowly rounded; discal striae (except 1) not impressed, punctured in vague rows, punctures obscure, close, moderately impressed; discal interstriae 2.0 times wider than striae, flat, smooth, shining, with distinct punctures equal in size to those in striae, resulting in a vaguely random appearance, each interstriae bearing a median row of short, erect, narrowly spatulate setae, rows extending from base to apex. Declivity evenly convex, unmodified except striae 1 very weakly impressed and a few minute granules visible on lateral areas; each interstriae with a median row of setae as on disc.

**Male.** As in female, recognized by abdominal segmentation.

**Distribution.** This species is known from Dominica, the Dominican Republic, Montserrat and Puerto Rico.

**Etymology.** From *in*, Latin for not, plus *editus*, Latin for high, referring to the low elevation localities.

**Comments.** Adults of this species may be recognized by the even rows of erect, narrowly spatulate setae in each discal and declivital interstriae and by the small size.

The host plant listed on one specimen from Puerto Rico is *Pinus caribaea*. It was collected in a multi-funnel *Ips* trap.

#### ***Araptus insulanus* Bright, sp. nov.**

**Type Material.** HOLOTYPE (male) labeled: "CURAÇAO: Carmabi, 12°07'20"N, 68°58'06"W, black-light, 15 Nov 2014, R. Turnbow" / "HOLOTYPE *Araptus insulanus* D. E. Bright 2016" (RHTC [FSCA]).

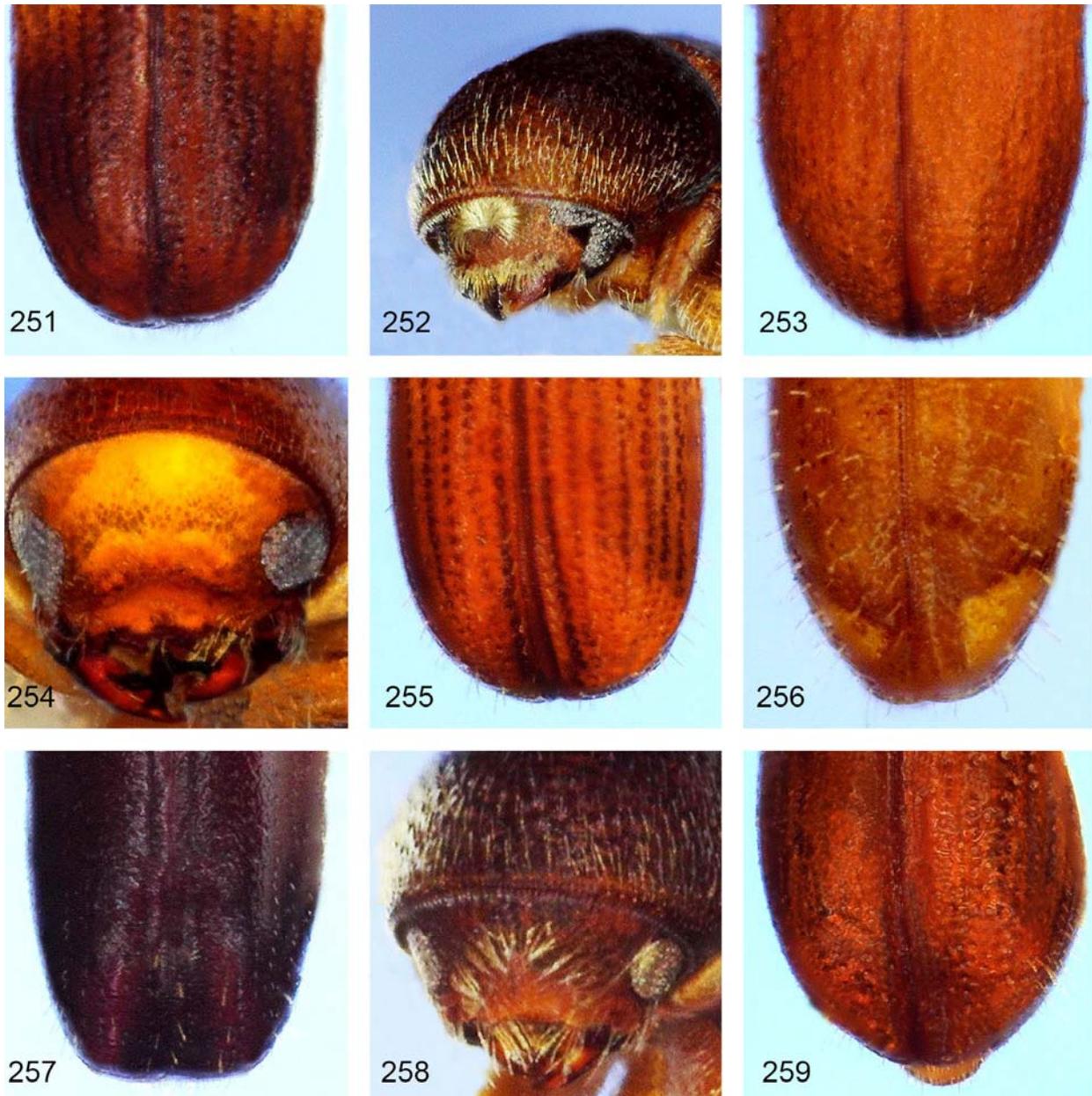
**Description (Male).** Length 1.9 mm, 1.7 times longer than wide; pronotum black, elytra very dark reddish-black. Frons narrowly, transversely impressed above epistoma, convex above with a distinct, longitudinal carina extending from impression to vertex, each lateral margin of impression bearing a small, rounded granule or elevation; surface above impression shining, densely punctured, with short setae; longitudinal carina moderately elevated, smooth. Antennal club 1.3 times longer than wide, widest on apical third; suture 1 strongly arcuate, chitinized, other sutures not discernable. Pronotum 1.1 times longer than wide, widest behind middle; sides weakly arcuate, more strongly so on anterior half; anterior margin broadly rounded, with an elevated, very weakly undulating ridge; anterior slope bearing numerous, scattered, low asperities, not arranged in any order; posterior and lateral areas with deeply impressed punctures, these separated by a distance less than their diameters, interspaces shining, with numerous, minute fine punctures; median line weakly elevated, impunctate; lateral margin with an acute elevated line extending from basal angles almost to anterior margin. Elytra 1.7 times longer than wide; sides parallel on anterior two-thirds, apex broadly rounded; discal striae not impressed, punctured in even rows, punctures moderately coarse, weakly impressed; discal interstriae 1.5–2.0 times wider than striae, flat, weakly shining, minutely reticulate without impressed punctures, interstriae 1, 3, 5 and 7 bearing a few, erect, narrowly flattened setae on posterior area near declivity, these as long as interstitial width. Declivity evenly convex; interstriae 2 slightly impressed, as wide as discal width, smooth, without setae; interstriae 3 slightly higher than interstriae 1, unmodified; striae 1 and 2 very weakly impressed, remaining striae not impressed; surface as on disc, without granules or other modifications, interstriae 1, 3, 5 and 7 bearing a median row of sparse, erect, fine setae.

**Female.** Unknown.

**Distribution.** Known from Curaçao in the Netherlands Antilles.

**Etymology.** From *insula*, Latin for island.

**Comments.** Males of this species may be recognized by the very convex frons which is narrowly impressed above the epistoma and bears a pair of small, rounded granules at the lateral margin and a distinctly elevated, longitudinal carina above the impression, by the antennal club which bears one,



**Figures 251–259.** Adult features of *Araptus* spp. **251)** *A. howdeni* (declivity). **252)** *A. howdeni* (frons). **253)** *A. hymenaeae* (declivity). **254)** *A. hymenaeae* (frons). **255)** *A. incolus* (declivity). **256)** *A. ineditus* (declivity). **257)** *A. melanurus* (declivity). **258)** *A. melanurus* (frons). **259)** *A. montanus* (declivity).

arcuate, chitinized suture and by the weakly impressed, convex elytral declivity. Males are similar to those of *A. bituberculatus* but differ by the characters mentioned in the above key.

***Araptus melanurus* Bright, sp. nov.**

Figures 257, 258.

**Type Material.** **HOLOTYPE** (female) labeled: “WEST INDIES: GRENADA, Saint Andrew, Mirabeau Agric. Lab., 28.X.1990, J. Telesford, light trap” / “HOLOTYPE *Araptus melanurus* D. E. Bright 2016” (FSCA). **PARATYPES** (2): both labeled with same locality as holotype except “4.XII.1990, A. Thomas” (1–CNC) and “23.II.1990, R. E. Woodruff” (1–REWC).

**Description (Female).** Length 1.4–1.6 mm, 2.7 times longer than wide; dark reddish-black; glabrous. Frons weakly, evenly concave from epistoma to just above upper level of eyes; surface shining, finely punctured, with a moderately dense brush of short, erect setae, those on periphery slightly longer than setae in middle; epistomal margin slightly arcuate, with a fringe of short setae. Antennal club as long as wide; suture 1 strongly arcuate, weakly chitinized at lateral margins, suture 2 similar nor chitinized at lateral margins. Pronotum 1.2 times longer than wide, widest at base; sides weakly, evenly arcuate on basal two-thirds; anterior margin narrowly rounded, with 10 basally contiguous, very low, obscure serrations; anterior slope bearing numerous, scattered, low asperities, not arranged in any order; posterior and lateral areas brightly shining, impunctate, minutely rugose, with scattered, low, shining, microasperities; lateral margin with an acute, elevated line on basal half. Elytra 1.5 times longer than wide; sides weakly arcuate on anterior two-thirds, apex broadly rounded, subtruncate; entire discal surface brightly shining, randomly, finely punctured and rugulose, striae and interstriae not discernable, glabrous. Declivity convex, weakly bisulcate; interstriae 2 weakly impressed; interstriae 1 and 3 of equal height; surface as on disc, densely minutely-punctate, unmodified.

**Male.** Unknown.

**Distribution.** This species is known from Grenada.

**Etymology.** From *melanos*, Greek for black, referring to the color of the adult.

**Comments.** Females of this species may be recognized by the densely minutely-punctate elytral surface, by the concave frons with a brush of short setae and by the elytral declivity as described above.

***Araptus montanus* (Bright)**

Figures 259, 260.

*Neodryocoetes montanus* Bright 1972: 93.

*Araptus montanus*: Wood and Bright 1992: 959.

**Description (sex?).** Length 1.9–2.1 mm, 2.7 times longer than wide; reddish. Frons convex, narrowly, weakly impressed just above epistomal margin; surface shining, minutely reticulate above upper level of eyes and on lateral portions, punctate with large and small punctures intermixed in median portion, the larger punctures weakly impressed, closely placed, of moderate size, the smaller punctures minute. Antennal club 1.3 times longer than wide, with two slightly arcuate, chitinized sutures. Pronotum as wide as long, widest near base; sides distinctly arcuate, faintly constricted just before narrowly rounded anterior margin; anterior margin bearing an acutely elevated, undulating ridge, distinct serrations absent; anterior slope bearing numerous asperities, these arranged in broken concentric rows; posterior and lateral portions densely punctured with large and small punctures intermixed, the large punctures deeply impressed, the surface between these punctures bearing dense, minute punctures. Elytra 1.6 times longer than wide; sides parallel on posterior three-fourths, broadly rounded behind; striae weakly impressed, distinctly punctured in distinct rows, the impressed punctures large, closely placed; interstriae smooth, impunctate except near declivity. Declivity steep; suture impressed below general elytral surface; striae as on disc; interstriae bearing a uniserrate row of short, stout setae.

The sexes were not distinguishable in the material examined.

**Distribution.** This species is known from Jamaica.

**Specimens examined. JAMAICA:** Saint Andrew Parish, Hardwar Gap, 4000', various dates in July 1966, Howden and Becker (13–CNCI).

**Comments.** Specimens in the type series range in size from 1.95–2.1 mm. Other variations are not obvious but consist of minute differences in surface punctation, vestiture and color.

Adults of this species can be distinguished from those of the other members of the genus in the West Indies by the distinctly, acutely elevated, undulating anterior margin of the pronotum, by the impressed

elytral declivity, by the vestiture which is confined to the declivital region and by the lack of a longitudinal carina on the frons.

This species is probably endemic to the high elevations of Jamaica.

***Araptus niger* (Bright)**

Figure 261.

*Neodryocoetes niger* Bright 1972: 93.

*Araptus niger*: Wood and Bright 1992: 959.

**Description (sex?).** Length 1.6–2.0 mm, 2.6 times longer than wide; black, antennae and legs light reddish-brown; glabrous. Frons weakly convex, distinctly punctured over entire surface except for a small, smooth area at mid point of epistoma, punctures close together, moderately large, deep, surface between punctures shining, finely reticulate; vestiture consisting of fine, hairlike setae arising from each puncture. Antennal club 1.3 times longer than wide; suture 1 nearly straight, chitinized; remaining sutures marked by rows of setae. Pronotum 1.1 times longer than wide, widest near base; sides weakly arcuate, faintly constricted in anterior third; anterior margin narrowly rounded, acute, with slight indentations resembling basally contiguous serrations; anterior slope bearing numerous, low, scattered asperities; posterior portion and lateral portions dull, distinctly punctured, with widely separated, very small fine punctures. Elytra 1.7 times longer than wide; sides parallel on basal three-fourths, broadly rounded behind; striae not impressed, punctured in nearly regular rows, punctures small, moderately impressed; interstriae flat, shining, very sparsely punctured. Declivity convex, very slightly impressed along suture; striae 1 weakly impressed more so than on disc; striae 2 faintly impressed; 3 and remaining striae not impressed; strial punctures fainter than on disc; interstriae duller than on disc, otherwise the same as on disc.

The sexes were not distinguishable in the material examined.

**Distribution.** This species is known from Jamaica and the Dominican Republic.

**Specimens examined.** DOMINICAN REPUBLIC: Cazabita, 1250 m, October 17, 1971, J. and S. Klapperich (1–NHMB). JAMAICA: Saint Andrew Parish, Hardwar Gap, 4000', 2 July 1966, Howden and Becker (2–CNCI).

**Comments.** Adults of this species and the next may be readily distinguished from other members of the genus by the black body and reddish-brown legs and antennae and by the completely glabrous pronotum and elytra. Adults of *A. niger* differ from those of *A. nigriculus* by the much smaller punctures on the posterior portion of the pronotum and in the striae.

The holotype and one paratype were examined.

***Araptus nigriculus* Bright, sp. nov.**

Figure 262.

**Type Material.** HOLOTYPE (female) labeled: "CUBA: Pinar del Rio, Sierra del Rosario, ca. 15 km S. Cinco Pesos Rangel, 29 June 1990, 429 m, M. A. Ivie" / "HOLOTYPE *Araptus nigriculus* D. E. Bright 2016" (WIBF [CNCI]). PARATYPE (1) labeled: "DOM. REP., La Vega Province, 10 km NE Jarabacoa Raquet Club, 550 m, FIT, 20.VII-4.VIII.95, mixed forest, S. and J. Peck, 95–37" (SBPC [CNCI]).

**Description (Female).** Length 1.5–1.6 mm, 2.6 times longer than wide; antennae and legs light reddish-brown; glabrous. Frons flattened, very slightly concave from epistoma to well above upper eye level, closely, densely punctured over entire surface except for a small, smooth area at mid point of epistoma, punctures close together, moderately large, deep, surface between punctures shining, finely reticulate; vestiture consisting of fine, hairlike setae arising from each puncture. Antennal club 1.3 times longer than wide; suture 1 nearly straight, chitinized; remaining sutures marked by rows of setae. Pronotum as in *A. niger* except punctures on posterior surface larger, deeper, closer. Elytra as in *A. niger* except strial punctures larger, deeper. Declivity as in *A. niger*.

**Male.** Unknown.

**Distribution.** This species is known from Cuba and the Dominican Republic.

**Etymology.** From *nigriculus*, Latin for dark, dusky, referring to the color of the adult.

**Comments.** Adults of this species are very similar to those of *A. niger* but differ by the characters given above.

***Araptus pallidus* (Blackman)**

Figure 263.

*Neodryocoetes pallidus* Blackman 1942: 193.

*Araptus pallidus*: Wood and Bright 1992: 960; Bright 2014: 240.

*Neodryocoetes portoricensis* Schedl 1951: 109 (Puerto Rico).

*Neodryocoetes devius* Schedl 1972: 61 (Cuba).

**Description (Male).** Length 1.7 mm, 2.7 times longer than wide; light yellowish-brown. Frons weakly transversely flattened from epistoma to upper level of eyes; surface of flattened area shining, minutely punctured, with scattered, fine setae, smoother and more distinctly punctured above. Antennal club broadly oval, as long as wide; first suture 1 moderately arcuate, remaining sutures not visible, marked by arcuate rows of setae (both antennae missing from holotype). Pronotum 1.1 times longer than wide, widest at base; sides parallel on posterior half, converging to broadly bounded anterior margin; anterior margin very weakly serrate; anterior slope with numerous, small, scattered asperities; summit weakly elevated; posterior portion weakly shining, rugulose, with weakly impressed, close punctures and small granulates. Elytra 1.7 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae (except 1) not impressed, punctures very small, weakly impressed; discal interstriae moderately shining, impunctate. Declivity convex; interstriae 1 weakly elevated, weakly impressed below level of interstriae 3, bearing a median row of very fine granules and a row of fine setae; interstriae 2 flattened, weakly impressed, without setae; interstriae 3 rounded, slightly higher than suture, bearing a few, very weak granules and a row of fine setae; striae 1 moderately deeply impressed, punctures distinct; remaining striae extremely weakly visible; remaining interstriae each bearing a median row of fine setae.

**Female.** Very similar to male except frons more convex and setae on frons slightly longer.

**Distribution.** This species is recorded in the West Indies from Cuba, the Dominican Republic and Puerto Rico.

**Specimens examined.** **CUBA:** Cayamas, 8.5 / E. A. Schwarz (3–USNM). **DOMINICAN REPUBLIC:** Rio Camu, 19 km NE Jarabacoa, June 12, 1969, Flint and Gomery (1–USNM). **PUERTO RICO:** San Germán, San Germán, Site 9, EDRR, 18.15118, 66.99364, 30.VII.2013, C. Torres and H. Rivera (4–MSUC, CNCI).

**Record from literature.** **CUBA:** Valle Ancon, Province Pinar del Rio, ex: *Callophyllum brasiliensis* var. *antellanum* (Schedl 1972) [types of *Neodryocoetes devius* Schedl].

**Comments.** Adults of this relatively non-descript species may be recognized by the weakly impressed elytral declivity which bears a row of setae on each interstriae (except 2), by the slightly flattened or impressed frons which does not have a carina or other modification and which bears a few fine setae, by the very weakly undulating anterior margin of the pronotum and by the dull to weakly shining, rugulose posterior portion of the pronotum. The size plus the characters given above will permit identification of this species.

The antennae and legs of the holotype were removed and mounted on slides many years ago by M. W. Blackman. They were examined several years ago but were not re-examined during this study. The antenna from one of the Puerto Rico specimens was removed and placed in lacto-phenol for examination. The male (?) holotype from Cuba was examined.

Vázquez et al. (2003) record *Macuna* as a host in Cuba.

***Araptus politus* (Blandford)**

Figure 264.

*Pityophthorus politus* Blandford 1904: 244.*Araptus politus*: Wood and Bright 1992: 960; Bright 2014: 240.*Neodryocoetes hubbardi* Blackman 1942: 182 (Jamaica).

**Description (Female).** Length 2.0–2.4 mm, 2.4 times longer than wide; reddish-brown. Frons convex, weakly flattened on a semicircular region from eye to eye, bearing a fine, very slightly elevated, longitudinal carina, this carina more strongly elevated at upper end; surface subopaque, finely, closely reticulate-granulate, bearing moderately long, stout setae. Antennal club 1.3 times longer than wide; suture 1 arcuate, chitinized except in center portion; remaining sutures not obvious. Pronotum 1.1 times longer than wide; sides distinctly arcuate, slightly constricted in anterior one-fourth, anterior margin narrowly rounded, bearing 12 to 15 close-set asperities, the median ones somewhat subopaque, minutely reticulate; posterior area finely asperate at sides, punctured on disc, the punctures fine, slightly impressed and widely separated, surface between punctures dull, minutely reticulate; median line broad, impunctate, very faintly elevated on posterior area; a fine, raised, lateral line extends from posterior angles almost to anterior margin. Elytra 1.5 times longer than wide; sides parallel on anterior three-fourths, broadly rounded behind; discal striae (except 1) not impressed, punctured in regular rows, punctures closely placed, of moderate size, finely impressed; interstriae shining, finely rugulose, occasionally bearing a few punctures. Declivity convex; interstriae 1 slightly elevated; striae 1 and 9 slightly impressed, remaining striae not impressed; interstriae as on disc; vestiture consisting of minute, inconspicuous, striae setae and a short row of longer setae in interstriae 9 at elytral apex.

**Male.** Similar to females in most respects. Frons somewhat more coarsely punctured; median carina fine, not extending to epistomal margin.

**Distribution.** This species is known from southern Mexico, Costa Rica and, in the West Indies, from Cuba, Haiti and Jamaica.

**Specimens examined. JAMAICA:** Island record only, intercepted in quarantine at Washington, D.C., 7 August 1964, F. T. Kenworthy, in ornamental seed heads (5–USNM); Kingston, Jan. 1971, J. H. Frank / *Hymenaea courbarii* pods (12–CNCI, USNM); London, Ontario, 23 October 1968, W. W. Judd, in seeds from Jamaica (25–CNCI).

**Records from literature. CUBA:** Island record only (Vázquez et al. 2003). **HAITI:** Island record only (Wood and Bright 1992). **JAMAICA:** Kingston, ex seed heads of *Mucuna fawcetti* (Blackman 1942).

**Comments.** The nearly glabrous pronotum and elytra, the fine median carina on the frons, the long lateral margin on the pronotum and the unmodified elytral declivity should distinguish adults of this species from those of the other known representatives of the genus in Jamaica.

This species is apparently common in seeds, nuts, etc., in Jamaica. It has been intercepted at quarantine stations several times in the United States. It has been found in Canada in seeds strung as beads and purchased in Jamaica. The host seeds were: *Mucuna urens* (Sea Bean), *Hevea brasiliensis* (Para Rubber) and *Delonix regia* (Poinciana) (Judd 1970).

***Araptus squamosus* Bright, sp. nov.**

Figure 265.

**Type Material. HOLOTYPE** (male) labeled: “WEST INDIES: **DOMINICA:** Springfield Estate, 330–360 m, 30.V-16.VI.2004, S. and J. Peck, N15°20.796, W61°22.142, mature second forest FIT” / “HOLOTYPE *Araptus squamosus* D. E. Bright 2016” (SBPC [CNCI]). **ALLOTYPE** labeled with same data as holotype plus my allotype label (SBPC [CNCI]). **PARATYPES** (5): 1 labeled with same data as holotype (CNCI); 2 labeled: “WEST INDIES: **SAINT VINCENT:** Stubbs, 9.VI.2007” / “pastures, fallow-field, uv light, S. and J. Peck” (CNCI, SBPC); 1 labeled: “WEST INDIES: **SAINT LUCIA:** Mon Repos, Fox Grove Inn, 90 m, 20–28.VII.2007” / “uv light, S. and J. Peck” (SBPC); 1 labeled: “**MARTINIQUE,** 5.VII.2001, Le Lorrain, Morne Maxime, uv, 180 w, leg. Roguet, Cauvin, M./Marquet, J.” (CNCI).

**Description (Male).** Length 1.6–1.8 mm, 2.4 times longer than wide; dark reddish-brown. Frons shallowly concave from epistoma to just below upper level of eyes, with a distinct, longitudinal carina extending to above upper eye level, upper margin of concave area rounded, with a few, scattered slightly larger granules; surface above evenly convex, moderately shining, minutely reticulate, with weakly impressed punctures; lateral margin of epistoma above base of mandibles with a pair of low, rounded, very small, almost imperceptible granules; epistoma straight, with a fringe of long, yellowish setae, these extending over basal half of mandibles. Antennal club oval, 1.4 times longer than wide; suture 1 strongly procurved, chitinized; suture 2 strongly procurved, not chitinized, marked by a row of short setae; suture 3 procurved, located at apex of club. Pronotum as long as wide, widest near base; sides broadly arcuate, very weakly constricted in front of middle, lateral margin acutely margined from base almost to anterior margin; anterior margin broadly rounded, without distinct serrations; discal surface evenly arched, elevated summit not present, anterior slope with numerous, small asperities, arranged in no apparent order; posterior third weakly shining, with small, shallow punctures, interpuncture surface densely reticulate. Elytra 1.5 times longer than wide; sides weakly arcuate, apex broadly rounded; basal half of elytra appearing randomly punctured, strial rows not evident but becoming more discrete on posterior half; discal interstriae 2.0–3.0 times wider than striae, dull, minutely reticulate, with scattered punctures equal in size to those in striae; interstriae 1, 3, 5 and 7 each with a median row of sparse, very short, narrowly flattened scales, mostly on posterior half. Declivity evenly convex; striae 1 narrow, weakly impressed, remaining striae as on disc; interstriae 1, 3, 5, 7 each with a median row of short, narrowly flattened scales.

**Female.** Similar to male except frons weakly impressed above epistoma, median carina weakly elevated, extending from epistoma to above upper eye level and interstitial scales more abundant and slightly broader.

**Distribution.** This species is known from Dominica, Martinique, Saint Lucia and Saint Vincent.

**Etymology.** From *squama*, Latin for scale or scaly, referring to the flattened interstitial scales.

**Comments.** The adults of this species are similar to those of *A. turnbowi* but may be distinguished by the shallower impression on the male frons, by the slightly longer and more flattened interstitial scales and by the smaller size.

***Araptus turnbowi* Bright, sp. nov.**

**Type Material.** **HOLOTYPE** (male) labeled: “**DOMINICAN REPUBLIC:** Barahona, 2 km E Payoso, mv and blacklight, 13 July 1998, R. Turnbow” / “**HOLOTYPE** *Araptus turnbowi* D. E. Bright 2016” (RHTC [FSCA]). **ALLOTYPE** labeled: “**DOMINICAN REPUBLIC:** La Vega Province, 1 km NW Manabao, 4.VI.1994, M. C. Thomas” / “**ALLOTYPE** *Araptus turnbowi* D. E. Bright 2016” (RHTC [FSCA]). **PARATYPES** (3): 1 labeled “**DOMINICAN REPUBLIC:** Province Barahona, Larimar Mine, nr. Filipinas, 6.II–VII.1993, blacklight trap, R. E. Woodruff, 3300 ft.” (REWC); 1 labeled “**DOMINICAN REPUBLIC:** La Vega, 8 km E Manabao, 6 June 1994, R. Turnbow” (CNCI); 1 labeled “**DOMINICAN REPUBLIC:** La Vega Province, 1 km NW Manabao, 5.VI.1994, M. C. Thomas” (CNCI).

**Description (Male).** Length 1.9 mm, 2.3 times longer than wide; dark reddish-brown. Frons deeply, transversely impressed from epistoma to just below upper level of eyes, concavity with a distinct, longitudinal carina, upper crest of concavity with a few slightly larger granules or smooth; surface above cavity evenly convex, with a narrow, weakly elevated, longitudinal elevation, surface dull, minutely reticulate, with weakly impressed punctures; lateral margin of epistoma above base of mandibles with a pair of very small, granules; epistoma straight, with a fringe of long, yellowish setae, these extending over basal half of mandibles. Antennal club oval, 1.8 times longer than wide; suture 1 strongly procurved, chitinized; suture 2 strongly procurved, not chitinized, marked by a row of short setae; suture 3 procurved, located at apex of club. Pronotum 1.1 times longer than wide, widest just behind middle; sides broadly arcuate, very weakly constricted in front of middle, lateral margin acutely margined from base almost to anterior margin; anterior margin broadly rounded, without serrations; discal surface evenly arched,

elevated summit not present, anterior slope with numerous, small asperities, arranged in no apparent order; posterior third dull, with large, deep punctures, interpuncture surface densely reticulate. Elytra 1.5 times longer than wide; sides weakly arcuate, apex broadly rounded; discal striae not impressed, obscurely punctured in regular rows; discal interstriae 2–3 times wider than striae, dull, minutely reticulate, interstriae 1, 3, 5 and 7 with a median row of sparse, very short, fine setae, mostly on posterior half. Declivity evenly convex; striae 1 narrow, weakly impressed, remaining striae as on disc; interstriae 2 very weakly elevated, remaining interstriae as on disc, all unarmed and glabrous.

**Female.** Similar to male except frons weakly impressed above epistoma, median carina weakly elevated, extending from epistoma to above upper eye level.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** This species is named for the collector of the holotype.

**Comments.** This species is in the same species group with *A. hymenaeae*. Males of *A. turnbowi* may be recognized by the evenly convex, unarmed elytral declivity, by the less deeply concave frons which is divided by a distinct, longitudinal carina, by the much more strongly procurved sutures of the antennal club and by the larger size. The female is similar but the frons is less deeply impressed.

***Araptus ustulatus* Bright, sp. nov.**

Figure 266.

**Type Material.** HOLOTYPE (female) labeled: “WEST INDIES: GRENADA, Saint Andrew, Mirabeau Agric., 26.I.1990, A. Thomas, light trap” / “HOLOTYPE *Araptus ustulatus* D. E. Bright 2016” (FSCA).

**Description (Female).** Length 1.6 mm, 2.7 times longer than wide; dark reddish-brown. Frons broadly, shallowly concave from eye to eye and from epistoma to well above upper level of eyes; surface densely, minutely punctured and reticulate, bearing a dense brush of short, erect setae, those on periphery slightly longer and incurved. Antennal club nearly circular, as long as wide, widest at middle; suture 1 weakly arcuate, strongly chitinized, remaining sutures obsolete, not discernable. Pronotum as long as wide, widest behind middle; sides weakly arcuate; lateral and basal margins bearing an acutely elevated, fine line, this on lateral margin extending from base to near anterior margin; anterior margin broadly rounded, with a row of six very small, indistinct serrations; anterior slope with numerous, small, distinct, separated asperities scattered in no apparent order; surface between asperities moderately shining, minutely reticulate; summit not elevated; posterior surface smooth, moderately shining, minutely reticulate, with very small, very shallow punctures appearing almost micro-rugose; vestiture obscure, inconspicuous. Elytra 1.6 times longer than wide; sides parallel on basal three-fourths; apex broadly rounded; discal surface brightly shining, striae obsolete, marked by rows of extremely short setae, striae 1 slightly impressed; striae 8 and 9 on lateral portion more distinct. Declivity convex, moderately deeply bisulcate; punctures in striae 1 and 2 distinct; interstriae 1 weakly elevated, with a median row of several, very fine setae; interstriae 2 distinctly impressed below level of 1 or 3, as wide as discal width, surface smooth, shining; interstriae 3 slightly elevated above level of 1, with a median row of short, fine, setae.

**Male.** Unknown.

**Distribution.** This species is known from Grenada.

**Etymology.** From *ustulatus*, Latin for brown, referring to the color of the adult.

**Comments.** Only the female of this species is known. It is recognized by the broadly, shallowly concave frons which bears a dense brush of short, erect setae, by the presence of one, slightly arcuate suture on the antennal club, with other sutures not discernable, by the obscure strial punctures on the elytral disc and by the convex, bisulcate elytral declivity which bears a few setae in interstriae 1 and 3.

***Araptus wintoni* Bright, sp. nov.**

Figure 267.

**Type Material.** **HOLOTYPE** (sex?) labeled: "SAINT LUCIA: Barre de L'Isle, 13°934'N, 60°958'W, 320 m, 22–29 May 2009, Malaise, R. C. Winton" / "HOLOTYPE *Araptus wintoni* D. E. Bright 2016" (WIBF [CNCI]). **PARATYPE** (1): labeled with same data as holotype (CNCI).

**Description (sex?).** Length 1.4–1.5 mm, 2.7 times longer than wide; reddish-brown. Frons concealed in holotype, partially visible in paratype, evidently weakly convex, with obscure, shallow punctures and a weak, longitudinal carina, vestiture obscure. Antennal club oval, 1.6 times longer than wide, segment 1 distinctly narrower than 2 or 3; sutures 1 and 2 strongly arcuate. Pronotum as long as wide, widest at posterior angle; sides weakly arcuate; anterior margin narrowly rounded, with a row of six distinct serrations; anterior slope gradually declivous, with numerous, distinct, separated asperities scattered in no apparent order but showing a vague tendency to form a few concentric rows; surface between asperities moderately shining, minutely reticulate; summit not elevated; posterior surface smooth, moderately shining, with large, deep punctures, these separated by a distance equal to or greater than their diameters; vestiture obscure, inconspicuous. Elytra 1.4 times longer than wide; apex broadly rounded; discal striae not impressed, punctured in regular rows, punctures large, deep; discal interstriae wider than striae, impunctate, shining, minutely reticulate. Declivity convex, moderately deeply bisulcate; punctures in striae 1 and 2 distinct, slightly smaller than those on disc; interstriae 1 weakly elevated, with a median row of three to five distinct but very small granules; interstriae 2 distinctly impressed below level of 1 or 3, distinctly wider than discal width, surface smooth, shining; interstriae 3 slightly elevated above level of 1, with a median row of six small, acute granules.

**Distribution.** This species is known from Saint Lucia.

**Etymology.** This species is named for the collector of the holotype.

**Comments.** Adults of this species may be distinguished by the moderately deeply impressed, bisulcate elytral declivity on which interstriae 2 is distinctly widened and smooth and interstriae 3 is elevated slightly above the level of interstriae 1 and bears a row of distinct, small granules. In addition, the elytral striae are deeply punctured in regular rows. The frons of both specimens in the type series is obscured and withdrawn into the pronotum and therefore not readily visible.

**Genus *Conophthorus* Hopkins**

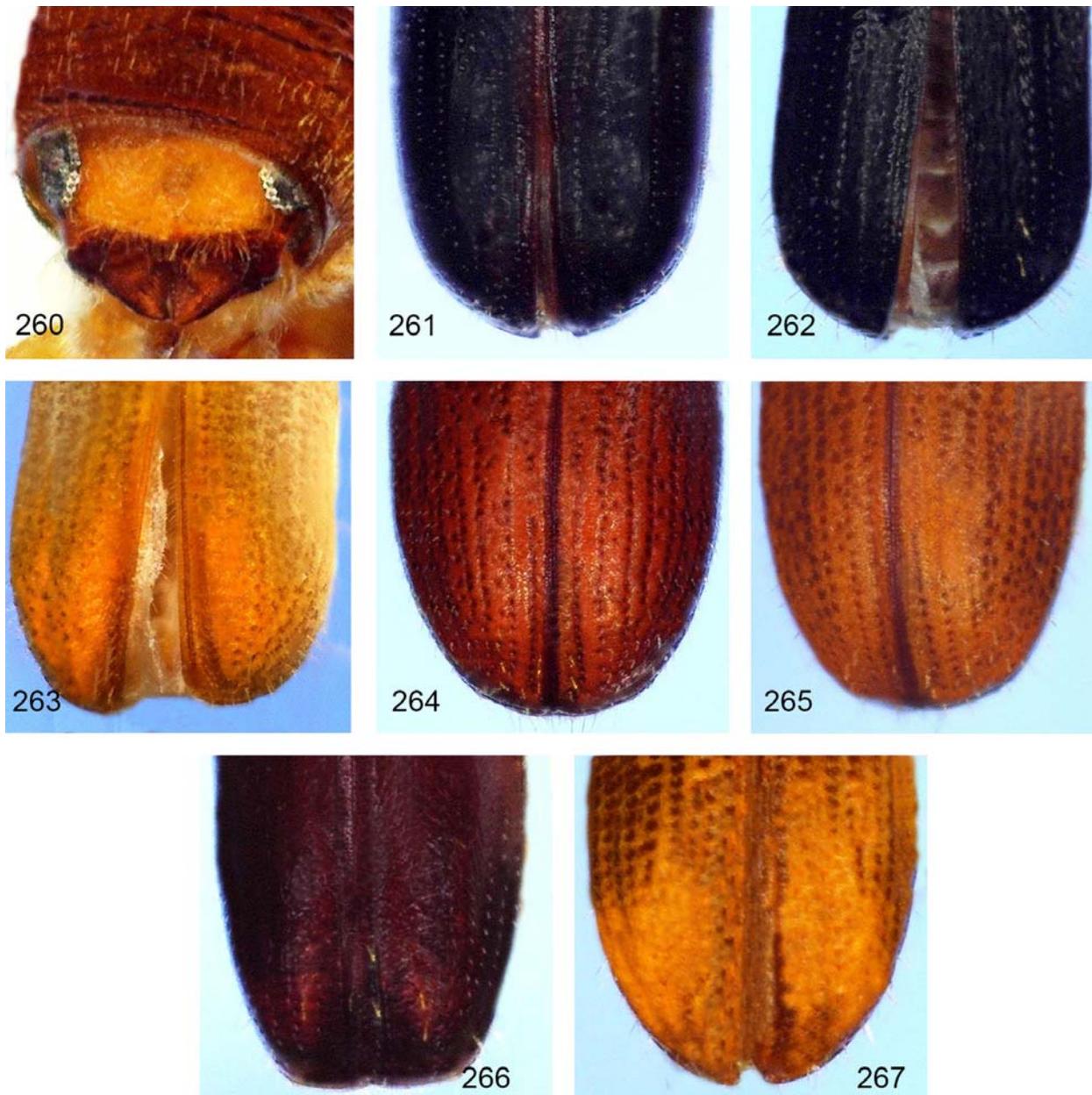
*Conophthorus* Hopkins 1915b: 430; Wood and Bright 1992: 963; Bright and Skidmore 1997: 201; Bright and Skidmore 2002: 321 (checklist); Bright 2014: 244.

Members of this genus are very similar to those in *Pityophthorus* and may be difficult to distinguish. Because of the large degree of overlap in both morphological and biological characters, *Conophthorus* may eventually have to be synonymized with *Pityophthorus*. In general, *Conophthorus* species may be distinguished from those in *Pityophthorus* by the larger, stouter size, by the non-septate sutures on the antennal club, by the more evenly convex pronotal profile with the summit indistinctly elevated and by the cone-infesting habit. These are virtually the same characters used to distinguish the pulicarius group of *Pityophthorus* (Bright 1981b).

All species of *Conophthorus* infest pine cones and often are found in buds and twig terminals. Thirteen species are recorded in North America, mostly in the western and northern United States and Canada (Bright and Skidmore 2002). Two species occur in the eastern United States, one of which occurs as far south as North Carolina. One West Indian species is herein described.

***Conophthorus insulatus* Bright, sp. nov.**

Figures 473, 543.



**Figures 260–267.** **Figure 260.** Frons of *A. montanus*. **Figures 261–267.** Declivities of *Araptus* spp. **261)** *A. niger*. **262)** *A. nigriculus*. **263)** *A. pallidus*. **264)** *A. politus*. **265)** *A. squamosus*. **266)** *A. ustulatus*. **267)** *A. wintoni*.

**Type Material.** **HOLOTYPE** (sex?) labeled: “DOM. REP: Province Santiago, Par. Nac. Armando Bermudez, 19°02’N, 70°58’W, 2575 m, 08 APR 1992, Aquita Fria, M. A. and R. O. Ivie, dead pine” / “HOLOTYPE *Conophthorus insulatus* D. E. Bright 2016” (WIBF [CNCI]).

**Description (sex?).** Length 4.2 mm, 2.3 times longer than wide; black, antenna and tarsi reddish. Frons weakly convex, slightly impressed at middle, with a very finely elevated line extending from epistoma to lower margin of impression; surface smooth, shining, with small, scattered punctures, those on lower half very small, those above impression slightly larger. Antennal scape club-shaped, 3.5 times longer than wide, 1.3 times longer than club; club 1.4 times longer than wide; sutures slightly arcuate. Pronotum as long as wide, widest at base; sides on basal half weakly arcuate, slightly constricted in front of middle; anterior margin broadly rounded, with a row of 14 small serrations; anterior slope convex, densely,

roughly asperate; summit not evident; posterior portion densely punctured, punctures close, deeply impressed; interpuncture space minutely reticulate, dull. Elytra 1.4 times longer than wide; sides parallel on basal three-fourths, broadly rounded at apex; discal striae 1 deeply impressed, with small punctures; remaining discal striae weakly impressed, with large, deep punctures, especially on basal one-fourth; discal interstriae strongly, transversely crenulate, with distinct punctures especially on basal 1/4th. Declivity convex, steep; interstriae 1 narrow, weakly elevated, slightly impressed; interstriae 2 much broader than discal width, flat, smooth, distinctly impressed; interstriae 3 slightly higher than 1, not elevated, with several, very small granules.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** From *insulatus*, Latin for isolated, referring to the distribution of this species.

**Comments.** Since most species in this genus are found infesting pine cones and small branches, adults of this species will certainly be found in the same habitat.

This is the only species of this genus known from the West Indies and adults may be distinguished by the large size, by the black color and by the strongly punctured and strongly sculptured elytra, in addition to the generic characters outlined in the above key to genera.

### Genus *Gnatholeptus* Blackman

*Gnatholeptus* Blackman 1943c: 34; Wood and Bright 1992: 970; Bright and Skidmore 2002: 353 (checklist); Bright 2014: 245.

Females in this genus may be distinguished by the slightly to enormously elongated mandibles and by the greatly enlarged oral area. In addition, the eyes of both sexes are coarsely faceted, evidently an adaptation correlated with a nocturnal habit. Males resemble the males of *Pityophthorus*.

Wood (2007) comments that this genus is poorly defined and except for the greatly enlarged oral area of the female and the unique, elongate mandibles of the females it could easily be confused with *Araptus*. In 1982 I commented that this genus may eventually be combined with *Pityophthorus* and previously I (1981b) treated this genus as a subgenus of *Pityophthorus*. Wood (1982) tentatively maintained this taxon as a distinct genus. Further studies are needed to properly evaluate the generic status of this taxon.

Wood (2007) states that the species are outbreeding, polygynous and form radiate galleries in the phloem of limbs and branches of the host plant, mostly *Protium* spp. Larval mines are in the phloem and are visible on the surface of peeled bark.

Three species of this genus are listed in Bright and Skidmore (2002); four species, known from Costa Rica to northern South America, are treated by Wood (2007). Three additional species from the West Indies are described herein.

### Key to the species of *Gnatholeptus* in the West Indies

1. Asperities on anterior slope of pronotum randomly scattered in no apparent order; apex of fifth visible abdominal sternite acutely produced and margined; length 1.7 mm, 2.9 times longer than wide; Dominican Republic ..... ***G. hispanicus* Bright, sp. nov.** (p. 344)
- Asperities on anterior slope of pronotum arranged in even or broken, arcuate, concentric rows; apex of fifth visible abdominal sternite not elevated ..... **2**
- 2(1). Anterior slope of pronotum with five or six very even, arcuate rows of asperities; body stout, 2.6 times longer than wide; length 1.6 mm, 2.6 times longer than wide; Dominican Republic ..... ***G. concinnus* Bright, sp. nov.** (p. 343)



**Figures 268–273.** Adult features of *Gnatholeptus* spp. **268** *G. hispanicus* (declivity). **269** *G. hispanicus* (frons and mandibles). **270** *G. concinnus* (declivity). **271** *G. concinnus* (frons and mandible). **272** *G. insularis* (declivity). **273** *G. insularis* (frons and mandible).

— Anterior slope of pronotum with three uneven, broken rows of asperities; body slender, 3.4 times longer than wide; length 1.7 mm, 3.4 times longer than wide; Martinique .....  
 ..... *G. insularis* Bright, sp. nov. (p. 345)

***Gnatholeptus concinnus* Bright, sp. nov.**

Figures 270, 271.

**Type Material.** HOLOTYPE (female) labeled: “DOMINICAN REPUBLIC: Duarte, Reserva Loma Quita Espuela, Canelo, 13.2 km NNE Sari Francisco de Macoris, 19–24–47N, 70–09–54W” / “523 m, 6 Apr 2004, C. Young, R. Davidson, J. Rawlins, disturbed field near wet forest fragment, uv light, sample 11113” / “HOLOTYPE *Gnatholeptus concinnus* D. E. Bright 2016” (CMNH).

**Description (Female).** Length 1.6 mm, 2.6 times longer than wide; light yellowish-brown. Frons convex from epistoma to well above upper level of eyes; surface shining, densely, finely, obscurely punctured; vestiture scattered, inconspicuous except along epistomal margin. Epistoma with a few small granules, a median, larger granule located just above median tuft of setae, epistomal lobe with single tuft of long, yellowish setae, with scattered setae on each side. Mandibles long, slender, strongly extended, glabrous; apex (cutting edge) of mandibles not readily visible. Antennal club circular, as long as wide, widest through segment 3; sutures 1 and 2 weakly arcuate, chitinized at lateral margins. Pronotum 1.1 times longer than wide, widest near base; anterior margin with seven low, weakly elevated, basally contiguous serrations; sides very weakly arcuate, very slightly constricted before anterior margin; anterior slope with asperities arranged into six concentric rows with several asperities clustered at summit, these rows very regular, slightly interrupted at middle of row; summit slightly elevated; posterior area shining,

interpuncture space with numerous, fine punctures, punctures obscure, weakly impressed. Elytra 1.5 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae punctured in regular rows (somewhat irregular in striae 1 and 3), not impressed, with moderate sized, weakly impressed punctures; discal interstriae moderately shining, finely reticulate, with scattered, very fine, minute punctures, glabrous. Declivity convex; striae 1 narrowly impressed; interstriae 1 very slightly elevated, without granules; interstriae 2 very slightly impressed, without granules or setae; remaining interstriae with scattered, very fine granules and setae; each interstriae with a row of very fine, erect, yellowish setae; costal margin emarginate at suture. Apex of last visible abdominal sternite evenly procurved, not acutely margined.

**Male.** Unknown.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** From *concinus*, Latin for beautiful or striking, referring to the appearance of the adult.

**Comments.** Females of this species can be recognized by the five or six concentric rows of asperities on the anterior slope of the pronotum and by the stout body. The male is unknown.

***Gnatholeptus hispanicus* Bright, sp. nov.**

Figures 268, 269, 408.

**Type Material.** **HOLOTYPE** (female) labeled: “**DOMINICAN REPUBLIC:** Province Pedernales, N. of Pedernales, border rd Rio Banana, S. of Arroyos, 18°09.291'N, 71°45.540'W, 21 July 1999, Ivie and Guerrero” / “**HOLOTYPE** *Gnatholeptus hispanicus* D. E. Bright 2016” (WIBF [CNCI]). **ALLOTYPE** labeled: “**DOMINICAN REPUBLIC:** Province Pedernales, N. of Pedernales, 188 m, La Aquita, 21 July 1999, 18°09.172'N, 71°44.786'W, M. A. Ivie, Guerrero and Dominici” / “**ALLOTYPE** *Gnatholeptus hispanicus* D. E. Bright 2016” (WIBF [CNCI]). **PARATYPES** (4): 1 labeled: “**DOMINICAN REPUBLIC:** Province La Vega, nr. Buena Vista, Hotel La Montana, 10 April 1992, in pool, M. A. Ivie, D. S. Sikes and W. Lanier” (WIBF); 3 labeled with same data as allotype (CNCI, WIBF).

**Description (Female).** Length 1.7 mm, 2.9 times longer than wide; light yellowish-brown. Frons weakly flattened from epistoma to level of upper margin of eyes; surface shining, densely, finely punctured except on a very small area just above median lobe on epistoma; vestiture scattered, consisting of very fine, yellowish, semirecumbent setae. Epistoma with three tufts of long, yellowish setae, one on median lobe and one on each side at level of inner base of mandible. Mandibles long, slender, strongly extended, with a small tuft of long setae near base on dorsal surface. Antennal club circular, as long as wide, widest through segment 3; suture 1 weakly arcuate, chitinized at lateral margins; suture 2 more strongly arcuate, not chitinized at lateral margins. Pronotum 1.1 times longer than wide, widest near base; anterior margin with an acutely elevated, not serrate ridge; sides very weakly arcuate, very slightly constricted before anterior margin; anterior slope with numerous, very small asperities scattered in no apparent order; summit weakly elevated; posterior area dull, densely minutely reticulate, punctures obscure. Elytra 1.7 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded, slightly notched at sutural apex; discal striae punctured in regular rows, not impressed, with very small, weakly impressed punctures; discal interstriae moderately shining, finely reticulate, with scattered very fine, minute punctures, glabrous. Declivity convex; each interstriae (except 2) with a row of very fine, erect, yellowish setae; interstriae 1 very slightly elevated, with a median row of very fine granules; interstriae 2 very slightly impressed, without granules or setae; remaining interstriae with scattered, very fine granules and setae; costal margin emarginate at suture. Apex of last visible abdominal sternite acutely produced and acutely margined.

**Male.** Very similar to female. Frons weakly, transversely impressed from epistoma to upper level of eye; epistoma without special tufts of setae; mandibles not produced. Declivity as in female except granules very slightly larger.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** This species is named for the island location.

**Comments.** In the adults of this species the asperities on the anterior slope of the pronotum are randomly scattered in no apparent order and the apex of the fifth visible abdominal sternite is acutely produced and margined. The mandibles of the females are long, slender, strongly extended, with a small tuft of long setae near base on the dorsal surface.

***Gnatholeptus insularis* Bright, sp. nov.**

Figures 272, 273.

**Type Material.** HOLOTYPE (female) labeled: "MARTINIQUE, 20.VII.2001, Gros-Morne, Route forest de Paloude, 619m-400 m, Leg. Roguet/Marquet" / "HOLOTYPE *Gnatholeptus insularis* D. E. Bright 2016" (CNCI).

**Description (Female).** Length 1.7 mm, 3.4 times longer than wide; light brown. Frons flattened from epistomal margin to above upper level of eyes and from eye to eye; surface with a dense brush of long, yellowish setae, these longer and incurved on periphery. Antennal club slightly longer than wide, suture 1 transverse, suture 2 strongly arcuate. Pronotum 1.3 times longer than wide, widest at base; sides straight, anterior margin broadly rounded; anterior margin with a row of 10 small, basally contiguous serrations; anterior slope with numerous, close asperities, these forming vague concentric rows, especially on lateral areas, first row of asperities behind anterior margin more evenly concentric; summit weakly elevated, located before middle; posterior surface smooth, shining, with distinct, widely separated, small punctures. Elytra 1.9 times longer than wide; sides parallel on anterior three-fourths, apex narrowly rounded; discal striae not impressed, punctured in regular rows, punctures shallow, close; discal interstriae smooth, impunctate, narrower than striae. Declivity convex; interstriae 1 wider than on disc, slightly elevated, unarmed, with two long setae; interstriae 2 as wide as 1, very slightly impressed; remaining interstriae unmodified, 3 and 5 each bearing two or three long setae; striae 1 very narrow, slightly but distinctly impressed; striae 2 not impressed, with large, distinct punctures; remaining striae as on disc.

**Male.** Unknown.

**Distribution.** This species is known from the unique female from Martinique.

**Etymology.** From *insularis*, Latin for island.

**Comments.** The female of this species may be most easily distinguished by the slender body form (3.4 times longer than wide), by the dense brush of setae on the frons and by the convex declivity on which striae 1 is distinctly impressed while the remaining striae are unimpressed. The available specimen is very similar to those in *Araptus* or *Pityophthorus* but is placed in *Gnatholeptus* based on the slender mandibles and on the shape of the elytral declivity which resembles that of other species of *Gnatholeptus*.

**Genus *Gnathoraptus* Bright, genus nov.**

With the usual character states of the Pityophthorina as given by Wood (2007), except antennal funicle 4-segmented (pedicel excluded); antennal club flat, with three weakly arcuate, transverse sutures; prosternum acutely pointed between coxae and declivity flattened and bisulcate. Pronotum more than 1.3 times longer than wide; mandibles very large, stout and conspicuous; oral region very large; sutures of antennal club weakly arcuate, suture 1 distinctly darkened, chitinized; body more than 3.0 times longer than wide.

**Type species.** *Gnathoraptus mandibularis* Bright, sp. nov., monotypic.

**Etymology.** From *gnathos*, Greek for jaw (in this case, mouthparts) plus *raptus*, Latin for plunderer. Gender feminine.

**Comments.** This genus is established for one species from Grenada that differs significantly from any other currently recognized species in the Pityophthorini. The species could be placed in *Araptus* sensu Wood (1982, 2007), except for the characters mentioned below. *Araptus* (sensu Wood) is a polyphyletic genus with a number of disparate species groups that will most likely be recognized as distinct genera when a complete phylogenetic analysis is conducted. In this work, I have recognized one of the species groups of *Araptus* as the genus *Sphenoceros* Schedl and *Gnathoraptus* represents another distinctive species group. Adults can be readily recognized by the very elongate body, by the enlarged oral cavity, with long setae on the labrum and the maxillae and by the large, prominent mandibles of both sexes.

***Gnathoraptus mandibularis* Bright, sp. nov.**

Figures 409, 474, 544.

**Type Material.** **HOLOTYPE** (male) labeled: "WEST INDIES, GRENADA: Lance aux Epines, Coral Cove, N11°59.57', W61°45.227', 16.VIII.2010" / "1 m, beach uv trap, S. Peck, collr." / "HOLOTYPE *Gnathoraptus mandibularis* D. E. Bright 2016" (SBPC [CNCI]). **ALLOTYPE** labeled with same data as the holotype plus my allotype label (SBPC [CNCI]). **PARATYPES** (20): all labeled with same data as the holotype (SBPC, CNCI).

**Description (Male).** Length 2.2–3.2 mm, 3.0 times longer than wide; very dark reddish-brown. Frons strongly, broadly convex from just above epistomal margin to vertex, with a distinct, median tubercle on epistomal margin, a weak, narrow, transverse impression above tubercle and a distinct, weakly elevated, longitudinal carina extending from upper margin of impression to vertex; surface of frons densely granulate, with a few scattered, long, fine setae in impressed area above epistomal tubercle; epistomal margin deeply, narrowly, transversely impressed above mandibles, bordered by a fringe of densely placed, moderately long, yellowish setae. Mandibles very large, stout, heavily chitinized. Antennal club flattened, as long as wide, with two distinct, arcuate sutures visible and a third, indistinct suture just before apex; suture 1 chitinized for half its length, remaining sutures not chitinized, marked by rows of short setae. Pronotum 1.4 times longer than wide; sides parallel on basal three-fourths, lateral margin with a fine, acute line extending from basal angles to near anterior margin; anterior margin broadly rounded, with a row of 16 low serrations; anterior one-quarter with numerous, small, closely and randomly placed asperities; posterior three-fourth smooth, shining, with dense, close, deeply impressed punctures, these separated by a distance much less than their diameters; median line distinct, wide, impunctate; basal margin with a fine, raised line. Elytra 1.7 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal surface glabrous, densely, randomly punctured, striae and interstriae vaguely discernable, punctures equal in size and depth as those on posterior portion of pronotum. Declivity steep, flattened, weakly impressed; striae 1 narrowly impressed, with minute punctures; interstriae 1 weakly impressed below level of 3, a median row of moderately long setae and very fine granules; interstriae 2 weakly impressed, with a median row of short setae; interstriae 3 slightly higher than suture, with a median row of longer setae, without granules.

**Female.** Similar in size and proportions to male. Frons similar to male with a median, epistomal tubercle, a weak, transverse impression above tubercle and a longitudinal carina but with a dense brush of close, erect, incurved setae on lower portion along upper margin of transverse impression. Otherwise similar to male, except declivity may be very slightly deeper.

**Distribution.** This species is known from Grenada.

**Etymology.** This species is named for the remarkable mandibles.

**Comments.** Adults of this species may be readily distinguished by the characters mentioned in the description and by the comments above.

**Genus *Pityoborus* Blackman**

*Pityoborus* Blackman 1922: 96; Wood and Bright 1992: 968; Bright and Skidmore 2002: 400 (checklist); Bright 2014: 246.

Species in this genus may be easily recognized by the large, circular patch of dense, short setae on the lateral portion of the female pronotum. The same area on the male pronotum is devoid of setae and the area is unusually smooth. Other generic characters are the comparatively large antennal club and the absence of a lateral or basal elevated line on the pronotum.

Seven species are recorded from the United States and Mexico by Bright and Skidmore (2002), one of these occurs in the Bahamas. All species construct galleries in branches of various species of pines (*Pinus*).

***Pityoborus comatus* (Zimmermann)**

Figures 475, 545.

*Crypturgus comatus* Zimmerman, 1868: 143.

*Pityoborus comatus*: Wood and Bright 1992: 968; Bright and Skidmore 1997: 202; Bright and Skidmore 2002: 149; Bright 2014: 246.

**Description (Female).** Length 1.7–1.9 mm, 2.9 times longer than wide; light to dark reddish-brown. Frons weakly convex, slightly flattened in middle; epistoma slightly elevated, widened at mid-point, shining; surface dull, minutely reticulate, with scattered, shallow punctures and with abundant, long setae, these longer on periphery. Antennal club 1.3 times longer than wide. Pronotum as long as wide, widest just behind middle; sides moderately arcuate, anterior margin broadly rounded, with more than 10 coarse serrations; summit at middle, very slightly elevated; anterior slope densely asperate; posterior portion smooth, with scattered, close, impressed punctures, interpuncture space reticulate; lateral areas before middle with two large, oval patches of very short, very dense setae. Elytra 1.6 times longer than wide; sides parallel on basal 3/4ths, apex broadly rounded; discal striae not impressed, punctures small, shallowly impressed; discal interstriae as wide as striae, minutely rugulose, impunctate. Declivity evenly convex; strial punctures obscure, shallower than those on disc; interstriae 1 weakly elevated, with a median row of very fine granules; interstriae 2 not impressed, without granules or punctures; interstriae 3 not elevated but with a median row of very small granules; all interstriae (except 2) with a median row of several, longer setae.

**Male.** Frons flattened, densely reticulate, dull, with a weak, longitudinal carina or elevation at middle, setae sparse. Pronotum as in female except oval patches of setae absent and serrations on anterior margin of pronotum slightly larger. Elytra and declivity as in female.

**Distribution.** This species occurs in the eastern and southeastern United States from Maryland to Mississippi and Florida, it occurs in the Bahamas.

**Specimens examined. BAHAMAS: Andros Island,** Forfar Field Station, nr Stafford Creek, 22–28.VII.2006, M. C. Thomas, T. R. Smith, uv trap in coastal coppice (1–FSCA); Mennonite's Farm, 31.VII.1987, J. Browne, crop blacklight (4–RHTC, CNCI); San Andros, Robinson's Place, J. Browne, 10.VI.1987, wet pineland blacklight (6–RHTC, CNCI); 5.5 mi. North "T" junction, 5 mi E. old lumber road, 30.VII.1987, J. Browne, coastal coppice blacklight (2–RHTC); Owen's Town, 13.VI.1987, J. Browne, pineland blacklight (1–RHTC); 2 mi S Forfar on Queen's Hwy., 15.VII.1987, J. Browne, high interior coppice blacklight (2–RHTC); Maidenhair Coppice, 11.VI.2004, M. C. Thomas, BLT (9–FSCA, CNCI); Atala Coppice, blacklight trap, 8 June 2004, R. Turnbow (8–RHTC). **New Providence Island,** Carmichael area, 25°01'N, 77°25'W, 14 April 2007 / at blacklight in Caribbean pine forest and scrub, W. E. Steiner and J. M. Swearingen (2–USNM).

**Comments.** This is the only species of this genus known from the West Indies. Females may be easily recognized by the two oval patches of short, dense setae on the pronotum, by the evenly convex elytral declivity and by the densely reticulate, dull frons. Males are similar in size but differ by the absence of the

oval patches on the pronotum, the same area on the male pronotum is smooth and without asperities or punctures and by the flatter frons with a weak, longitudinal median carina or elevation (variable).

Adults of this species occur in small limbs and branches of pines.

### Genus *Pityophthorus* Eichhoff

*Pityophthorus* Eichhoff 1864: 39; Wood and Bright 1992: 976; Bright and Skidmore 1997: 203; Bright and Skidmore 2002: 402 (checklist); Bright 2014: 246.

This large and diverse genus is one of the most difficult groups of Scolytidae in which to identify species. The small size of specimens, combined with sexual dimorphism and numerous species and the difficulty in observing and interpreting minute and obscure morphological characters results in extreme difficulty in making positive identification for many species. Both sexes are usually required for identification and access to a large collection of authentic species for comparison purposes is definitely an asset.

Bright and Skidmore (2002) list almost 400 species worldwide. I treated 220 species in 42 species groups in North and Central America in 1981b and added an additional 18 species from Mexico in 1985 and 1986. Wood (2007) treated 55 species from South America. Fifteen species are reported from the West Indies in Wood and Bright (1992); 47 species are treated herein.

Species in this genus are very similar to those in *Araptus* and generic distinction may be difficult and may depend on authors' choice. The antennal club of *Pityophthorus* spp. almost always has two straight to weakly arcuate, septate sutures, the pronotal summit is usually elevated with a definite transverse impression behind the summit and the basal third of the lateral margin of the protibia is usually devoid of granules or rugae (variable). In *Araptus*, suture 1 on the antennal club may occasionally be straight but is often strongly to profoundly procurved and chitinized; suture 2 may be weakly to strongly procurved and is not chitinized; the pronotal disc usually does not bear an elevated summit and therefore does not have a transverse impression and the basal fourth of the lateral margin of the protibia is usually devoid of granules or rugae. This latter character is very variable and probably is not of generic significance.

Among the species placed in *Pityophthorus* and *Araptus*, complete intergradation of the character states of the features noted above can be observed. In addition, adults of some species of *Pityophthorus* and *Araptus* may display one important character and not display another, while adults of another species may display an opposite combination of characters. Both genera contain species groups that conceivably could be placed in either genus. Under usual circumstances, these two genera almost certainly would be combined since there is almost complete intergradation of characters with no apparent distinct separation between genera. However, to combine the two would not solve any problems and would not be in the interest of scolytid systematics. The resulting genus would contain over 600 diverse species, mostly in the New World, for which identification would be difficult if not impossible. Additionally, some of the species groups in each genus would probably have to be designated as separate genera.

For the purpose of this monograph, I have made an arbitrary decision to regard those species with a distinctly elevated pronotal summit and a straight to weakly arcuate and chitinized first and second antennal sutures as members of *Pityophthorus* and those species without an elevated pronotal summit and with the first suture of the antennal club either straight to profoundly procurved and septate and the second suture not septate as members of *Araptus*. This decision will maintain the original generic designation of most species and will result in the fewest new combinations and potential nomenclatural problems.

Species of this genus infest cut or broken small branches, twigs, seedlings, etc of numerous species of shrubs, vines and both coniferous and deciduous trees.

Key to the species of *Pityophthorus* in the West Indies

1. Pronotal asperities scattered, not arranged in any apparent order with no indication of concentric rows ..... **2**  
 — Pronotal asperities arranged into two or more, even or broken, concentric rows, or at least an indication of concentric rows is evident, especially on lateral areas of pronotum ..... **25**
- 2(1). Elytral apex acuminate at suture ..... **3**  
 — Elytral apex narrowly to broadly rounded at suture ..... **6**
- 3(2). Lateral margin of pronotum rounded throughout, without a narrow groove; elytral declivity deeply impressed, interstriae 3 higher than 1 and 2 with several granules on summit; female frons flat with a dense brush of long setae, these longer on periphery and incurved; length 1.8 mm, 3.3 times longer than wide; Cuba ..... ***P. procerus* Bright, sp. nov.** (p. 382)  
 — Lateral margin of pronotum with a narrow groove on posterior half; elytral declivity moderately impressed, interstriae 3 slightly higher than 1 and 2 with distinct granules on summit; female frons concave, with abundant setae; length 1.4–2.4 mm, 3.0 times longer than wide ..... **4**
- 4(3). Female frons deeply concave from eye to eye with long, incurved setae on periphery; male frons weakly to strongly concave in middle; length 1.8–2.4 mm; Dominican Republic and Bahamas ..... **5**  
 — Female frons slightly flattened to weakly concave, with dense, incurved setae on periphery; male frons flattened to shallowly, transversely impressed; length 1.4–1.7 mm; Bahamas ..... ***P. annectens* LeConte** (p. 356)
- 5(4). Occurs in pines in Bahamas ..... ***P. confusus bellus* Blackman** (p. 363)  
 — Occurs in Dominican Republic ..... ***P. confusus sequestus* Bright, subsp. nov.** (p. 364)
- 6(2). Elytral apex narrowly rounded at suture, may appear to be weakly acuminate; declivital interstriae 2 weakly to strongly impressed, as wide as discal width; declivital interstriae 1 and 3 each with a median row of large, acute granules (males) or granules absent or very small (females); length 1.3–1.6 mm, 3.0 times longer than wide; Dominican Republic, Guadeloupe, Saint Lucia, Saint Vincent ..... ***P. eggersianus* Eggers** (in part) (p. 368)  
 — Elytral apex broadly rounded at suture; elytral declivity evenly convex to impressed ..... **7**
- 7(6). Antennal club without visible sutures; anterior margin of pronotum bearing 14 serrations; length 1.6 mm, 3.0 times longer than wide; Martinique ..... ***P. inusitatus* Bright, sp. nov.** (p. 374)  
 — Antennal club with distinct sutures, these either septate or not, marked by rows of setae or obviously chitinized; anterior margin of pronotum bearing weak to strongly elevated serrations or with an acutely elevated ridge without serrations ..... **8**
- 8(7). Pronotum evenly arched from base to anterior margin, without an elevated summit ..... **9**  
 — Pronotum with a weak to distinct elevated summit, usually transversely impressed behind summit ..... **22**
- 9(8). Male declivity impressed with interstriae 3 higher than 1, more strongly elevated on upper half with one acute granule on upper half, female declivity more weakly impressed, with a very weak tubercle or slight swelling on interstriae 3; male frons moderately transversely impressed from epistoma to upper eye level, female frons dull, densely reticulate in median area; anterior margin of pronotum bearing an acute ridge, not serrate; length 1.4–1.6 mm, 2.9 times longer than wide; Puerto Rico ..... ***P. bigranulatus* Bright, sp. nov.** (in part) (p. 359)  
 — Male and female declivity variable but not as above, interstriae 3 either smooth or bearing more than one granule; other characters not as above ..... **10**

- 10(9). Declivital interstriae 1 and 2 deeply impressed below interstriae 3; interstriae 3 on declivity with a median row of distinct granules; antennal club, with first two sutures very slightly arcuate; Dominican Republic ..... **11**  
 — Declivital interstriae 1 and 2 not impressed or very weakly impressed below level of interstriae 3; interstriae 3 with or without granules; antennal club with variable sutures ..... **12**
- 11(10). Length 2.3 mm, 2.6 times longer than wide; elytral striae punctured in slightly irregular rows, punctures very large; male frons weakly convex, very weakly transversely impressed above epistoma, with a very small granule at middle of epistomal margin ..... ***P. auspicatus* Bright, sp. nov.** (p. 358)  
 — Length 1.9 mm, 3.1 times longer than wide; elytral striae punctured in regular, even rows, punctures large; male frons slightly flattened, without a granule on epistomal margin ..... ***P. congruus* Bright, sp. nov.** (p. 364)
- 12(10). Declivital interstriae 1 and 3 with a median row of small granules; declivital interstriae 2 slightly wider than discal width; posterior half of pronotum with obscure punctures; length 1.3 mm, 2.7 times longer than wide; Grenada ..... ***P. grenadacolens* Bright, sp. nov.** (p. 372)  
 — Declivital interstriae 1 and 3 without granules, or, if granules present, then they are large and conspicuous; declivital interstriae 2 not wider than discal width; posterior half of pronotum with or without punctures ..... **13**
- 13(12). Posterior half of pronotal disc densely, minutely reticulate, dull, without punctures, with or without granules ..... **14**  
 — Posterior half of pronotal disc shining or dull, with distinct punctures; elytral disc with distinct striae punctures; elytral declivity variable ..... **15**
- 14(13). Posterior portion of pronotum without granules, punctures often very weakly impressed in lateral areas; elytral disc minutely reticulate, striae punctures absent or very vague in some areas; declivital interstriae 1 elevated above interstriae 2 and 3; striae 1 on declivity distinctly impressed; apex of abdominal sternite 5 not acutely margined; length 1.4 mm, 2.8 times longer than wide; Saint Lucia ..... ***P. gimmeli* Bright, sp. nov.** (p. 371)  
 — Posterior portion of pronotum with isolated granules or rugae, punctures completely absent; elytral disc shining, with distinct rows of striae punctures; declivity convex, interstriae 2 weakly impressed; apex of abdominal sternite 5 acutely margined and slightly produced; length 1.7 mm, 2.6 times longer than wide; Puerto Rico ..... ***P. torresi* Bright, sp. nov.** (p. 390)
- 15(13). Elytral declivity evenly convex, interstriae 2 not impressed below level of 1 or 3 ..... **16**  
 — Elytral declivity with interstriae 2 very slightly impressed below level of interstriae 1 and 3 .... **20**
- 16(15). Length 1.1–1.3 mm ..... **17**  
 — Length 2.5 mm or 0.9–1.1 mm ..... **19**
- 17(16). Each elytral interstriae on disc and declivity with a median row of erect, narrowly flattened to spatulate setae; body 2.7 times longer than wide; Montserrat, Saint Lucia ..... ***P. pauculus* Bright, sp. nov.** (p. 380)  
 — Elytral interstriae on disc glabrous; declivital interstriae with short, fine setae; body 2.5–2.8 times longer than wide ..... **18**
- 18(17). Length 1.2 mm; anterior margin of pronotum with six, distinct serrations; setae in declivital interstriae very short, as long as interstitial width; body 2.5 times longer than wide; Saint Lucia ..... ***P. vulgaris* Bright, sp. nov.** (p. 391)

- Length 1.3 mm; anterior margin of pronotum with six obscure, weakly elevated serrations; setae in declivital interstriae longer than interstitial width; body 2.6 times longer than wide; Puerto Rico ..... *P. nesocolus* Bright, sp. nov. (p. 379)
- 19(16). Declivital striae and interstriae strongly punctured in regular rows; elytral disc densely, randomly punctured, punctures large, deep; length 2.5 mm, 2.7 times longer than wide; Cuba ..... *P. eccentricus* Bright, sp. nov. (p. 368)
- Declivity punctured in even rows, striae 1 more deeply impressed; elytral disc punctured in even striae rows; length 0.9–1.1 mm, 2.7–2.8 times longer than wide; Puerto Rico ..... *P. convexicollis* Bright (p. 365)
- 20(15). Declivital interstriae 1 and 3 each bearing a median row of large, distinct granules; all declivital interstriae (except 2) with a row of spatulate setae, these longer than interstriae width, striae with shorter, slightly flattened scales; length 1.4 mm, 2.8 times longer than wide; Saint Lucia ..... *P. tomentosus* Bright, sp. nov. (p. 389)
- Declivital interstriae 1 and 3 not as above; declivital setae all hairlike ..... **21**
- 21(20). Interpuncture space on posterior half of pronotum shining, smooth, punctures very close, separated by a distance less than their diameters; body black; male frons flattened, epistoma not impressed; female unknown; length 2.8 mm, 2.8 times longer than wide; Dominican Republic ..... *P. illuminus* Bright, sp. nov. (p. 373)
- Interpuncture space on posterior half of pronotum dull, densely minutely reticulate, punctures more widely spaced, separated by a distance equal to their diameters; reddish-brown; male frons strongly convex, with epistoma deeply impressed except for a small median portion, impression densely fringed with setae; female frons flattened, epistoma not impressed; length 1.3–2.0 mm, 2.6 times longer than wide; Cuba, Bahamas ..... *P. pulicarius* (Zimmermann) (in part) (p. 382)
- 22(8). Elytral discal surface with short, abundant setae in both striae and interstitial rows, setae in interstriae slightly longer and more erect than those in striae; elytral apex broadly rounded; striae punctures on declivity obsolete, interstriae 3 with several minute granules; length 1.4 mm, 2.8 times longer than wide; Puerto Rico ..... *P. capillosus* Bright, sp. nov. (p. 360)
- Elytral discal surface glabrous; elytral apex broadly to narrowly rounded; declivity evenly convex, with or without distinct striae punctures, interstriae 3 with or without granules ..... **23**
- 23(22). Elytral surface dull, minutely rugose, without visible rows of striae punctures; each declivital interstriae with a median row of short, spatulate setae; posterior surface of pronotum dull, minutely rugose, with very faint, minute punctures; length 1.3 mm, 2.9 times longer than wide; widely distributed ..... *P. laevis* (Schedl) (p. 375)
- Elytral surface shining, with or without definite rows of striae punctures; declivital interstriae glabrous or with fine setae; posterior surface of pronotum weakly shining, minutely reticulate, with distinct punctures ..... **24**
- 24(23). Female frons flattened, with a brush of setae, these longer on periphery; male frons with a faint, longitudinal carina; apex of last abdominal sternite of female often with a distinct brush or clump of longer setae, male sternite with a few longer setae not in a distinct brush; body light brown; length 1.2–1.4 mm, 2.5 times longer than wide; Dominican Republic ..... *P. pinavorus* Bright (p. 381)
- Female frons weakly concave, with short, scattered setae, without a carina; male frons weakly convex, with a faint longitudinal carina; body black; length 1.6 mm, 2.6 times longer than wide; Dominican Republic, Haiti ..... *P. favorabilis* Bright, sp. nov. (p. 370)

- 25(1). Mandibles of female with an evident spine-like or elongate process rising from cutting edge (Fig. 275), mandible of male without process; frons of female broadly, shallowly concave from epistoma to above upper level of eyes; frons of male flattened to weakly transversely impressed above epistoma to upper eye level; pronotum of both sexes with four evenly arcuate rows of asperities; declivity with suture impressed below level of interstriae 3, interstriae 3 rounded and without granules, punctures in striae 1 and 2 usually obsolete ..... **26**  
 — Mandibles of both sexes normal, without special modifications; frons variable but not as above; declivity variable ..... **27**
- 26(25). Process on female mandible very long, extending to or above upper eye level; length 1.3 mm, 2.8 times longer than wide; Jamaica ..... ***P. abnormalis* Bright** (p. 355)  
 — Process on female mandible very short, extending to just above epistomal margin; length 1.6 mm, 2.7 times longer than wide; Dominican Republic ..... ***P. senticosus* Bright, sp. nov.** (p. 386)
- 27(25). Pronotum evenly convex, without a distinct, elevated summit ..... **28**  
 — Pronotum with a distinct elevated summit at or near middle ..... **42**
- 28(27). Elytral apex, viewed dorsally, subacuminate or narrowly rounded; elytral declivity bisulcate .... **29**  
 — Elytral apex, viewed dorsally, broadly rounded; elytral declivity evenly convex or variously impressed ..... **31**
- 29(28). Length 0.9–1.0 mm, 2.7 times longer than wide; declivital interstriae 3 slightly higher than interstriae 1, with distinct, large granules; Netherlands Antilles (Saba), Saint Lucia ..... ***P. minutissimus* Bright, sp. nov.** (p. 379)  
 — Length greater than 1.0 mm; declivity variable but not as above ..... **30**
- 30(29). Declivital interstriae 2 wider than discal width; punctures in declivital striae 2 distinct; declivital interstriae 1 and 3 with very small granules; length 1.4 mm, 3.0 times longer than wide; Dominican Republic ..... ***P. masneri* Bright, sp. nov.** (p. 378)  
 — Declivital interstriae 2 as wide as discal width; punctures in declivital striae 1 and 3 distinct; declivital interstriae 1 and 3 with large, acute granules (males) or small granules (female) and with numerous, short setae; length 1.3–1.6 mm, 3.0 times longer than wide; Dominican Republic, Guadeloupe, Saint Lucia, Saint Vincent ..... ***P. eggersianus* Schedl** (in part) (p. 368)
- 31(28). Anterior margin of pronotum bearing four serrations, median pair slightly larger and separated by a distance equal to basal width; elytral declivity bearing three or four, short, erect setae in interstriae 1, 3, 5 and 7; length 1.1 mm, 2.6 times longer than wide; Puerto Rico ..... ***P. acolus* Bright, sp. nov.** (p. 356)  
 — Anterior margin of pronotum bearing various combinations of serrations but not as above; elytral declivity bearing more than three or four setae in each interstriae; length greater than 1.1 mm ..... **32**
- 32(31). Elytral declivity evenly convex, striae 1 often weakly impressed; very small species, length 1.2–1.4 mm ..... **33**  
 — Elytral declivity sloping, not distinctly convex, striae 1 distinctly impressed, punctures in striae 1 and 2 (especially 2) distinct; interstriae 2 not impressed below level of interstriae 1 and 3, as wide as or distinctly wider than discal width, flat; length usually greater than 1.3 mm ..... **35**
- 33(32). Sides of pronotum broadly rounded, distinctly constricted just before anterior margin; anterior slope of pronotum with three even, concentric rows of asperities; all interstriae on posterior third of elytra, except 2, bearing a median row of long setae; length 1.4 mm, 2.5 times longer than wide; Dominican Republic ..... ***P. gratus* Bright, sp. nov.** (p. 372)

- Sides of pronotum straight to weakly rounded, not strongly constricted behind anterior margin; anterior slope of pronotum usually with more than three even row of asperities; length 1.2–1.3 mm ..... **34**
- 34(33). Interstitial setae on declivity slightly flattened, shorter than width of interstriae; interpuncture surface on posterior portion of pronotum shining, with very small, fine punctures; length 1.2–1.3 mm, 2.5 times longer than wide; Cuba ..... ***P. regularis* Blackman** (p. 384)
- Interstitial setae on declivity narrowly spatulate to hairlike, slightly longer than interstitial width; interpuncture surface on posterior portion of pronotum dull, densely minutely reticulate; length 1.3 mm, 2.6 times longer than wide; Jamaica, Virgin Islands ..... ***P. diversus* Bright** (p. 367)
- 35(32). Pronotal asperities either scattered or arranged into irregular, broken concentric rows especially noticeable on lateral portions of pronotum; interpuncture space on posterior half of pronotum dull, densely minutely reticulate, punctures more widely spaced, separated by a distance equal to their diameters; male frons strongly convex, with epistoma deeply impressed except for a small median portion, impression densely fringed with setae; female frons flattened, epistoma not impressed; length 1.3–2.0 mm, 2.6 times longer than wide; Cuba, Bahamas ..... ***P. pulicarius* (Zimmermann)** (in part) (p. 382)
- Pronotal asperities arranged into clearly concentric rows; other characters variable, not as above ..... **36**
- 36(35). Lateral margins of male epistoma with a small, smooth, slightly elevated, shining callus or elevation, this swelling directed mesad, slightly notched at apex, epistomal margin between swellings straight, with a brush of long setae; female frons with a small brush of dense, moderately long, erect setae, all of equal or nearly equal length, brush occupying median area from epistoma to upper level of eyes; male frons flattened, weakly transversely impressed above epistoma, lateral margins with a small, smooth, shining callus or elevation; length 1.6–1.7 mm, 2.5 times longer than wide; Dominican Republic ..... ***P. subtilis* Bright, sp. nov.** (in part) (p. 388)
- Lateral margins of male epistoma devoid of special modifications; female frons with scattered setae; other characters not as above ..... **37**
- 37(36). Length 1.4 mm; declivity weakly impressed, with interstriae 2 very slightly impressed below level of interstriae 3; female frons with a sparse brush of moderately long setae; length 1.4 mm, 2.9 times longer than wide; Cayman Islands ..... ***P. sepositus* Bright, sp. nov.** (p. 386)
- Length greater than 1.4 mm; declivity varying from not impressed to deeply impressed ..... **38**
- 38(37). Declivital interstriae 3 slightly higher than 1, interstriae 1 and 3 with a row of moderately large, acute granules; length 1.4–1.7 mm, 2.7 times longer than wide; Dominican Republic, Puerto Rico ..... ***P. antillicus* Bright** (in part) (p. 357)
- Declivital interstriae 3 equal in height to lower than 1, granules small to absent ..... **39**
- 39(38). Elytral declivity not impressed, declivital interstriae 3 not elevated, equal in height to 2; punctures in declivital striae 2 large, distinct ..... **40**
- Interstriae 2 on elytral declivity impressed below level of interstriae 1 and 3 ..... **41**
- 40(39). Length 1.5 mm, 3.0 times longer than wide; Saint Lucia ..... ***P. foleyi* Bright, sp. nov.** (p. 371)
- Length 1.6 mm, 3.2 times longer than wide; Guadeloupe ..... ***P. punctatus* Schedl** (p. 383)

- 41(39). Declivital interstriae 2 distinctly impressed, as wide as discal width; declivital interstriae 1 slightly lower than 3, each with a median row of fine granules; each declivital interstriae (except 2) with a median row of long, fine setae; interpuncture surface on posterior portion of pronotum smooth, dull, with distinct, impressed punctures; length 1.5–1.8 mm, 2.9 times longer than wide; Bahamas (?), Dominican Republic, Guadeloupe, Haiti, Puerto Rico, Jamaica to Montserrat ..... *P. subconcentralis* Schedl (p. 387)
- Declivity moderately to deeply impressed; declivital interstriae 1 and 2 deeply impressed below level of 3, 1 and 3 each with a median row of distinct granules and long setae, granules on 3 randomly scattered; interpuncture surface on posterior portion of pronotum dull to weakly shining, with numerous, scattered, very minute punctures; length 2.3 mm, 2.8 times longer than wide; Jamaica ..... *P. suspiciosus* Bright (p. 389)
- 42(27). Punctures in striae 1 and 2 indistinct, obsolete on declivity; interstriae 2 on declivity usually narrower than discal width; length 1.3–1.5 mm, 2.4 times longer than wide; Florida Keys .... *P. pecki* Atkinson (p. 381)
- Punctures in striae 1 and 2 (especially 2) distinct on declivity, usually equal in size to those on disc; declivital interstriae 2 usually as wide as discal width ..... **43**
- 43(42). Elytral declivity evenly convex, interstriae 2 not impressed below level of 3 ..... **44**
- Elytral declivity flattened to weakly impressed along suture; interstriae 2 slightly impressed below level of 3 ..... **46**
- 44(42). Strial punctures on disc and declivity distinct, strongly impressed; each interstriae on disc and declivity with a median row of short, erect setae; length 1.6 mm, 2.6 times longer than wide; Jamaica ..... *P. dissidens* Bright, sp. nov. (p. 366)
- Strial punctures on disc and declivity small to moderately large, weakly impressed; setae on disc and declivity sparse, usually on interstriae 1, 3, 5 and 7 ..... **45**
- 45(44). Each elytral striae and interstriae on posterior half of elytra (including interstriae 2) with an even row of erect setae, these narrowly flattened on declivital area; strial punctures large, close, deeply impressed; length 1.4 mm, 2.8 times longer than wide; Jamaica ..... *P. convexus* Bright, sp. nov. (p. 366)
- Alternate odd-numbered elytral striae and interstriae on declivity with very short, inconspicuous setae; strial punctures obsolete, weakly impressed; length 1.1 mm, 2.2 times longer than wide; Martinique ..... *P. rogueti* Bright, sp. nov. (p. 384)
- 46(43). Declivital interstriae 2 slightly to distinctly wider than discal width ..... **47**
- Declivital interstriae 2 as wide as or wider than discal width ..... **48**
- 47(46). Declivital interstriae 3 as high as suture, with a row of minute granules; length 1.1–1.2 mm, 2.8 times longer than wide; Virgin Islands ..... *P. insulatus* Bright, sp. nov. (p. 374)
- Declivital interstriae 3 slightly higher than suture, interstriae 1 and 3 with a row of moderately large, acute granules; length 1.4–1.7 mm, 2.7 times longer than wide; Dominican Republic, Puerto Rico ..... *P. antillicus* Bright (in part) (p. 357)
- 48(46). Declivital interstriae 1 and 3 without granules; length 1.6–1.8 mm, 2.8 times longer than wide; Jamaica ..... *P. confractus* Bright (p. 363)
- Declivital interstriae 1 and 3 each with a row of small granules ..... **49**
- 49(48). Female frons with a small brush of moderately long setae, brush occupying area from epistoma to upper level of eyes; male frons flattened, weakly transversely impressed above epistoma; lateral margins of male epistoma with a small, smooth, shining callus or elevation; length 1.6–1.7 mm, 2.5 times longer than wide; Dominican Republic ..... *P. subtilus* Bright, sp. nov. (in part) (p. 388)

- Female frons convex to flattened, punctured, with a few setae; male frons transversely impressed from epistoma to upper level of eyes, convex above, often with a narrow, longitudinal elevation on vertex ..... **50**
- 50(49). Female frons pubescent on upper margin above upper eye level, lower half smooth, brightly shining; male frons flattened, densely pubescent; 1.3–1.6 mm, 2.8 times longer than wide; Haiti ..... ***P. liquidambarus* Blackman** (p. 376)
- Female frons variable, not as above; declivital interstriae 2 as wide as discal width ..... **51**
- 51(50). Elytral apex narrowly rounded, nearly subacuminate; female frons densely pubescent, setae all of equal or nearly equal length; length 1.0 mm, 3.0 times longer than wide; Saint Lucia ..... ***P. astringens* Bright, sp. nov.** (p. 358)
- Elytral apex broadly, evenly rounded; female frons variable, setae not all of equal length ..... **52**
- 52(51). Surface of posterior portion of pronotum reticulate between punctures; female frons glabrous; length 1.0–1.3 mm, 2.8 times longer than wide; Florida Keys .... ***P. borrichiae* Wood** (p. 360)
- Length greater than 1.3 mm; combination of characters not as above ..... **53**
- 53(52). Antennal club longer than scape, 1.4 times longer than wide; elytral declivity shallowly impressed, punctures in striae 1 and 2 distinct; length 2.0–2.1 mm, 3.0 times longer than wide; Dominican Republic ..... ***P. youngi* Bright, sp. nov.** (p. 391)
- Antennal club shorter than scape, 1.4–1.5 times longer than wide; elytral declivity convex, punctures in striae 1 and 2 not clearly visible; length 1.2–1.5 mm, 3.0 times longer than wide; Bahamas, Cuba ..... ***P. centralis* Eichhoff** (p. 362)

***Pityophthorus abnormalis* Bright**

Figures 274, 275.

*Pityophthorus abnormalis* Bright 1972: 88; Wood and Bright 1992: 978.

**Description (Female).** Length 1.3 mm, 2.8 times longer than wide; light reddish-brown. Frons flattened, slightly concave from eye to eye and from epistomal margin to well above eyes; surface smooth, shining, minutely punctate, sparsely pubescent; a long, sinuate, horn-like process arises from the cutting edge of each mandible and extends upward to near upper level of eyes. Antennal club oval, 1.6 times longer than wide, widest at middle; sutures 1 and 2 slightly arcuate. Pronotum 1.1 times longer than wide; sides arcuate, very faintly constricted in front of middle; anterior margin broadly rounded, serrate; anterior slope bearing numerous asperities, these contiguous and arranged in four concentric rows. Elytra 1.7 times longer than wide; sides parallel on anterior three-fourths, broadly rounded behind; discal striae not impressed, punctures shallowly impressed, separated by a distance equal to half their diameters; discal interstriae as wide as striae, shining, impunctate except near declivity. Declivity convex, flattened; suture slightly elevated; striae 1 weakly impressed; interstriae 2 slightly widened, unmodified; remaining striae and interstriae as on disc except striae punctures finer; vestiture consisting of sparse, widely separated, hairlike setae on declivital interstriae.

**Male.** Similar to female in size; frons flattened on a smaller area, distinctly punctured; mandibles lacking horn-like structure; declivity deeper, impression broader; declivital setae narrowly flattened, not hairlike.

**Distribution.** This species is known from Jamaica.

**Specimens examined. JAMAICA:** Trelawny Parish, Duncans, 15 August 1966, Howden and Becker (210–CNCI).

**Comments.** Adults of this remarkable species may be easily recognized by the peculiar, horn-like projections on the mandibles of the female. In addition, the flat frons of both sexes, the concentric rows of pronotal asperities and the unmodified declivity should distinguish this species.

***Pityophthorus acolus* Bright, sp. nov.**

Figure 276.

**Type Material:** HOLOTYPE (female?) labeled: “Puerto Rico: San Juan, San Juan, Site 2, EDRR, 18.38911, 66.05533, 23.IX.2013, C. Torres & H. Rivera” / “HOLOTYPE *Pityophthorus acolus* D. E. Bright 2016” (MSUC).

**Description (Female?).** Length 1.1 mm, 2.6 times longer than wide. Frons weakly flattened in median area from epistomal margin to level of upper margin of eyes; surface finely punctured with a very weak, longitudinal carina on lower half of flattened portion and with a sparse brush of moderately long, yellowish setae, these longer along epistomal margin. Antennal club narrowly oval, 1.4 times longer than wide, widest through segment 2, sutures 1 and 2 obscure, transverse, faintly chitinized at lateral margins. Pronotum as long as wide, widest behind middle; sides slightly arcuate on posterior half; anterior margin broadly rounded, bearing four serrations, median pair slightly longer and separated by a distance equal to basal width; anterior slope with two vague concentric rows of small asperities; summit not elevated; posterior area deeply punctured, punctures large, close, separated by a distance less than their diameters, surface between punctures moderately shining, slightly reticulate. Elytra 1.4 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae punctured in even regular rows, punctures large, deeply impressed and close; discal interstriae wider than striae, surface brightly shining, smooth to weakly reticulate, glabrous to declivital base. Declivity steeply convex, very weakly impressed along suture; interstriae 1 weakly elevated, bearing a median row of three, fine, erect setae, these longer than interstitial width; interstriae 2 very weakly impressed, flat, smooth, as wide as discal width, glabrous; interstriae 3 elevated as high as 1, bearing a median row of three or four erect setae; punctures in striae 1 and 2 distinct.

**Male.** Unknown.

**Distribution.** This species is known from Puerto Rico.

**Etymology.** From *akolos*, Greek for bit or morsal, referring to the small size of the adult.

**Comments.** The adults of this species may be distinguished by the very small size, by the weakly flattened frons of the female (?) which bears a weak, longitudinal carina on the lower half and a sparse brush of erect setae, by the large, close punctures on the posterior half of the pronotum, by the presence of four serrations on the anterior margin of the pronotum, of which the median pair are slightly longer and more widely separated and by the presence of three erect setae in declivital interstriae 1 and 3. Other characteristics are mentioned in the above description.

The holotype was collected in a survey trap, thus no host information is available.

***Pityophthorus annectens* LeConte**

*Pityophthorus annectens* LeConte 1878: 622; Wood and Bright 1992: 980; Bright and Skidmore 1997: 204; Bright and Skidmore 2002: 150.

**Description (Female).** Length 1.4–1.7 mm, 3.0 times longer than wide. Frons weakly concave to flattened from epistomal margin to well above upper eye level; surface finely punctured, with a dense brush of long, incurved, yellowish setae. Antennal club slightly longer than wide, widest at segment 2; sutures 1 and 2 transverse, weakly visible. Pronotum 1.1 times longer than wide, widest at middle; sides straight to weakly arcuate on posterior two-thirds; anterior margin broadly rounded; anterior slope with asperities small, sharply elevated, scattered in no apparent order; summit weakly elevated; posterior area deeply punctured, punctures of moderate size, widely separated, surface between punctures moderately shining, with numerous, scattered, minute punctures and weak reticulation; lateral margins bearing a narrow, shallow groove on posterior half. Elytra 1.9–2.0 times longer than wide; apex distinctly acuminate; discal striae punctured in even regular rows, punctures large, deeply impressed and close; discal interstriae narrower than striae, surface moderately shining, weakly reticulate; interstriae 1, 3, 5, 7 and

9 each with three to five short, erect setae. Declivity steep, weakly bisulcate, shining; interstriae 1 moderately elevated, bearing a median row of very fine granules; interstriae 2 weakly impressed, flat, slightly wider than discal width, smooth, shining; interstriae 3 weakly elevated, as high as or very slightly higher than 1, bearing a median row of very fine granules; punctures in striae 1 and 2 obsolete.

**Male.** Frons weakly transversely impressed from epistoma to upper eye level; surface with large, deep punctures and short setae. Otherwise as in female except declivity more deeply sulcate and granules on interstriae 1 and 3 slightly larger.

**Distribution.** This species occurs throughout the southeastern United States, west to Arizona and south to southern Mexico. In the West Indies it is recorded from the Bahamas, but should occur on other islands where pines occur naturally.

**Specimens examined. BAHAMAS: New Providence Island,** Carmichael area, 25°01'N, 77°25'W, 14 February 2005 / at blacklight in Caribbean pine forest and shrub; W. E. Steiner and J. M. Swearingen (5-USNM).

**Record from literature. BAHAMAS: Andros Island,** Stafford Creek (Turnbow and Thomas 2008).

**Comments.** Adults of this species may be recognized by their small size, by the dense brush of long, yellowish setae on the female frons and by the narrow, shallow groove on the basal portion of the lateral margin of the pronotum. Adults of this species are similar to those of *P. confusus sequestus* Bright but differ by the smaller size and the smaller, shallower pronotal groove.

This is a common species found in limbs, branches and small twigs of various species of *Pinus* in Florida and the Bahamas.

### ***Pityophthorus antillicus* Bright**

Figures 277, 476, 546.

*Pityophthorus antillicus* Bright 1981a: 162; Wood and Bright 1992: 981.

**Description (Female).** Length 1.4–1.7 mm, 2.7 times longer than wide. Frons broadly, shallowly concave from epistoma to well above eyes and laterally from eye to eye; surface shining, densely and finely punctured with numerous fine, erect, moderately long setae, those on periphery distinctly longer. Antennal club oval, 1.4 times longer than wide, widest at middle; sutures 1 and 2 very weakly arcuate, suture 3 more strongly arcuate. Pronotum 1.2–1.3 times longer than wide; anterior margin broadly rounded, bearing a fringe of longer setae; anterior slope with asperities arranged in three distinct, arcuate rows with several additional rows clustered around summit; summit weakly elevated; posterior area deeply punctured, punctures widely separated, surface between punctures brightly shining, with numerous scattered, minute punctures. Elytra 1.7 times longer than wide; discal striae punctured in even regular rows, punctures large, deeply impressed and close; discal interstriae narrower than striae, surface shining, with fine, impressed, minute punctures. Declivity steep, moderately deeply bisulcate; interstriae 1 bearing two or three, large, acute granules; interstriae 2 moderately impressed, flat, distinctly widened apically; interstriae 3 moderately elevated, distinctly arcuate, bearing three or four acute granules, these equal in size to those on 1; punctures in striae 1 and 2 obsolete or small, moderately impressed.

**Male.** Frons weakly flattened above epistoma, convex above eyes; surface densely punctured except on a narrow, obscure median area above a small, median, epistomal granule. Pronotum and elytra as described for female. Declivity more deeply sulcate; granules on interstriae 1 and 3 slightly larger; interstriae 2 broader, deeper.

**Distribution.** This species is known from the Dominican Republic, Puerto Rico and the U. S. Virgin Islands.

**Specimens examined. DOMINICAN REPUBLIC:** Barahona, Eastern Sierra, Bahoruco, Reserva Cachote, 12.8 km NE Paraiso, 18–0558N, 71–11–26W, 1219 m, 21–23Mar 2004 / J. Rawlins, C. Young, R. Davidson, C. Nurez, M. Rial, disturbed cloud forest on road, uv light, Sample 44113 (1-CMNH); Jarabacoa, VI.15.4 / *Pinus occidentalis* / D. DeLeon, (59-USNM, CNCI); La Vega, Jarabacoa, 21 mi. E Hotel Montoya, 10.VIII.1980, A. Norrbom / under bark of dead standing pine (6-CMNH); Province La Vega, La Ceinega, 1100 m, 19°04.07'N, 70°51.68'W, 29 July 1999, at light, M. A. Ivie and K. A. Guererro (1-WIBF); La Vega, Constanza, 17 July 1996, R. Turnbow (1-RHTC); La Vega, 1.4–2.6 km E Manabao, 6 June 1994, R. Turnbow (2-RHTC); La Vega, Hotel Montana, 4 June 1994, R.

Turnbow (1-RHTC); Dajabon, 1 km S. of Restauracion, 12.VIII.1980, 600 m, A. Norrbom / under bark of dead standing pine (1-CMNH); Colonia, 10.3.1972, 1000 m, J. and S. Klapperich (4-NMHB); Pedernales, 26 km. N Cabo Rojo, 700 m, 10 July 1996, R. Turnbow (1-RHTC); Province Pedernales, km. 19 N Cabo Rojo, 12.VI.1998, R. E. Woodruff: H. Freytag, blacklight trap, 1000 ft. (1-REWC); San Jose de las Malas, 19.XI.87, 500 m, *Pinus occidentalis*, R. A. Haack (4-FSCA, CNCI); Province Santiago, N. slope Pico del Yaque, 2515 m, 08 Apr-07 July 1992, M. A. Ivie: N. A. Bermud, flight intercept trap (1-WIBF). **PUERTO RICO:** Carite Forest, Patillas, 16.V.2013 (2-PRDA). **VIRGIN ISLANDS (U. S.): Saint Croix,** Est. William Frederiksted, 5-12 Feb. 1981, D. Hutchins (1-CNCI).

**Comments.** Adults of this species resemble *P. oclusus* Bright, from Honduras and Mexico, but differ by the broader and shallower elytral declivity, by the broader declivital interstriae 2 and by the smaller and shallower punctures on declivital striae 2 and, in the female, by the broadly sulcate frons (convex in *P. oclusus*).

The host plant for this species in the Dominican Republic is *Pinus occidentalis*. Presumably adults and larvae occur in branches and limbs of the host tree. Two specimens (males) were seen from Puerto Rico that have slightly larger granules in declivital interstriae 1 and 3 and have a smooth frons, without a longitudinal elevation. Otherwise they closely resemble specimens in the type material of *P. antillicus*. They were collected in traps so no host association is available.

***Pityophthorus astringens* Bright, sp. nov.**

Figure 278.

**Type Material.** **HOLOTYPE** (female) labeled: “WEST INDIES: **SAINT LUCIA**, nr. Micoud, trail towards Fond Bay, 13°49’48”N, 60°53’42”W, 15 m, S. D. Gaimari, A. R. Cline, 16-22 May 2009 (09-01B)” / “HOLOTYPE *Pityophthorus astringens* D. E. Bright 2016” (WIBF[CNCI]).

**Description (Female).** Length 1.0 mm, 3.0 times longer than wide; light yellowish-brown. Frons flattened from epistoma to slightly above upper eye level and laterally nearly from eye to eye; surface densely, finely punctured, covered by a dense brush of short setae, all of equal or nearly equal length. Antennal club very small, slightly longer than wide, widest through segment 2; sutures 1 and 2 transverse, weakly visible. Pronotum 1.2 times longer than wide, widest at middle; sides straight to weakly arcuate on posterior two-thirds; anterior margin broadly rounded; anterior slope with asperities very small, arranged into four evenly concentric rows; summit weakly elevated; posterior area shining, punctures vague, weakly impressed. Elytra 2.0 times longer than wide; apex narrowly rounded, almost subacuminate; discal striae not impressed, punctured in even regular rows, punctures moderately large, shallowly impressed; discal interstriae narrower than striae, surface moderately shining, weakly reticulate, interstriae 1, 3, 5, 7 and 9 each with three to five short, inconspicuous setae. Declivity convex, weakly bisulcate, shining; interstriae 1 weakly elevated, bearing a median row of minute granules; interstriae 2 weakly impressed, flat, as wide as discal width, smooth, shining; interstriae 3 weakly elevated, as high as or very slightly higher than 1, bearing a median row of minute granules; punctures in striae 1 and 2 obsolete.

**Male.** Unknown.

**Distribution.** This species is known from Saint Lucia.

**Etymology.** From *astringens*, Latin for shrinking, referring to small size of the adult.

**Comments.** Females of this species may be most easily distinguished by the small size of the adults, by the concentric rows of asperities on the anterior slope of the pronotum, by dense brush of equal length setae on the frons and by the subacuminate elytral apex.

***Pityophthorus auspicatus* Bright, sp. nov.**

Figure 279.

**Type Material.** **HOLOTYPE** (male) labeled: “**DOMINICAN REPUBLIC:** La Vega, 2.5 km SW Pinar Bonito, 18-51N, 70-43W, 1430 m, 26 Nov 1992” / “J. Rawlins, R. Davidson, M. Klinger, S. Thompson,

riparian vegetation near stream in pine woodland" / "Carnegie Museum Specimen Number CMNH-350.475" / "HOLOTYPE *Pityophthorus auspicatus* D. E. Bright 2016" (CMNH).

**Description (Male).** Length 2.3 mm, 2.6 times longer than wide; light brown. Frons weakly convex, with a weakly elevated, longitudinal smooth space, this space interrupted just above epistomal margin and with a minute granule on epistoma; surface shining, with close, large, weakly impressed punctures and scattered inconspicuous, short setae. Antennal club broadly oval, 1.7 times longer than wide, widest at segment 2; sutures 1 and 2 weakly arcuate, weakly chitinized at lateral margins; segment 1 as wide as 2. Pronotum very slightly longer than wide, widest on basal fourth; sides weakly arcuate on basal half; anterior margin broadly rounded, bearing an acutely elevated, weakly undulating line, distinct serrations absent; anterior slope bearing numerous, low, wide asperities, these scattered in no apparent order; summit not elevated; posterior area not impressed behind summit, surface smooth, shining, with large, very close, impressed punctures, interpuncture space with densely placed minute punctures. Elytra 1.3 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae not impressed, punctured in regular rows, punctures distinct, moderately large, deeply impressed; discal interstriae as wide as striae, brightly shining, smooth, with a few scattered punctures similar to those in striae especially at base, glabrous except near declivity where interstriae 3–5 each bear a few long, erect setae. Declivity bisulcate; interstriae 2 moderately impressed below level of interstriae 1 and 3, as wide as discal width, unarmed; interstriae 1 slightly elevated, unarmed; interstriae 3 distinctly elevated, rounded on summit, bearing seven large, rounded granules; punctures in striae 1 and 2 distinct; all interstriae (except 1 and 2) bearing a median row of several long setae.

**Female.** Unknown.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** From *auspicatus*, Latin for favorable or fortunate.

**Comments.** Males of this species may be recognized by the scattered asperities on the anterior slope of the pronotum, by the acutely elevated anterior pronotal margin which is devoid of distinct serrations, by the weakly convex frons which bears a minute granule on the middle of the epistoma and by the declivital characters mentioned above.

***Pityophthorus bigranulatus* Bright, sp. nov.**

Figure 280.

**Type Material.** HOLOTYPE (male) labeled: "Puerto Rico, San Juan, San Juan, Site 4, EDRR, VII-VIII.2013, Coll: C. Torres and H. Rivera" / "male sign" / "HOLOTYPE *Pityophthorus bigranulatus* D. E. Bright 2016" (MSUC). ALLOTYPE: labeled with same data as holotype plus my allotype label (MSUC). PARATYPES (11): 10 labeled with same data as holotype except for dates as follow: (3) VII-VIII 2013, (1) 15.VIII 2013, (1) 19.VI-VII, (4) 29.VIII 2013, (1) VIII 2013 (4–CNCI, 5–MSUC); 1 labeled "Puerto Rico, Aquadilla, Aquadilla, Site 11, EDRR, 18.49829, -67.13795, 10.IX.2013, Coll: C. Torres and H. Rivera" (CNCI).

**Description (Male).** Length 1.4–1.6 mm, 2.9 times longer than wide; reddish-brown. Frons moderately deeply transversely impressed from epistoma to upper eye level, upper margin of impression arcuate; surface shining, punctures obscure; epistomal margin transverse, bearing a few, sparse setae. Antennal club oval, 1.4 times longer than wide, widest at middle; suture 1 very weakly arcuate, almost straight, chitinized at lateral angles; suture 2 more strongly arcuate, chitinized at lateral margins; suture 3 strongly arcuate. Pronotum 1.2 times longer than wide, widest at middle; lateral margins weakly arcuate, anterior margin broadly rounded, margined by an acute, arcuate, very slightly undulate ridge without serrations; anterior slope with numerous, scattered, low serrations, several if these sometimes joined into short ridges; summit not elevated; posterior portion dull, densely minutely reticulate, with scattered, very small, weakly impressed, obscure punctures, these separated by a distance at least 1.5–2.0 times greater than their diameters; a very weak, obscure median line extends from basal margin to

summit area. Elytra 1.6 times longer than wide; sides parallel, apex broadly rounded; discal striae not impressed, punctured in regular rows, punctures shallow, each with an extremely short seta shorter than diameter of puncture; discal interstriae dull, densely minutely reticulate, impunctate. Declivity sulcate; interstriae 1 lower than 3, devoid of granules or setae; interstriae 2 as wide as on disc, unmodified; interstriae 3 distinctly elevated above 1, more highly elevated on upper half, bearing a single, acute granule at middle, this granule bearing a single, short seta on lower base; punctures in striae 1 and 2 distinct.

**Female.** Similar in size and in most characters given above. Frons flattened, with a large, oval, slightly elevated, densely reticulate area extending from just above epistoma almost to upper eye level, area on each side of this area and along epistomal margin bearing long setae. Declivity shallowly impressed; interstriae 3 slightly higher than 1 and not bearing a distinct, single, acute granule but a very small granule or slight swelling can be detected in the same position as in the male.

**Distribution.** This species is known from Puerto Rico.

**Etymology.** From *bi-*, Latin for two, and *granum*, Latin for small kernel or pellet, referring to the presence of two small granules on the elytral declivity, one in each interstriae 3.

**Comments.** This is a unique species characterized in the males by the presence of a single acute granule in declivital interstriae 3. Females may be distinguished by the characters of the frons as given above and by the lack, or near lack, of a granule in declivital interstriae 3. Females may have a very minute granule in interstriae 3 or the granule may be absent, but a slight swelling can be detected. This species was, on first examination, thought to represent an undescribed species of *Araptus*. One antenna was removed and mounted in lacto-phenol for closer examination. Sutures 1 and 2 are clearly chitinized at the lateral angles and therefore the species is placed in *Pityophthorus*.

Specimens were collected as part of the 2013 Bark and Ambrosia Beetle Early Detection Survey in Puerto Rico. No host records are therefore available.

### ***Pityophthorus borrichiae* Wood**

*Pityophthorus borrichiae* Wood 1964: 60; Wood and Bright 1992: 984; Bright and Skidmore 1997: 204; Bright and Skidmore 2002: 151.

No specimens of this species have been seen from the West Indies. It is included here because the type series (and only known specimens) were collected in the Florida Keys and the host plants, *Borrichia arborescens* (L.) DC. and *B. frutescens* (L.) DC. both occur in the West Indies. It should be looked for in these host plants. Adults may be recognized by the characters listed in the above key.

This species is not included in Appendix 2 nor is it included in any counts of the West Indian fauna.

### ***Pityophthorus capillosus* Bright, sp. nov.**

Figure 281.

**Type Material.** HOLOTYPE (male?) labeled: "PUERTO RICO: El Yunque, II.21, 2000 ft." / "HOLOTYPE *Pityophthorus capillosus* D. E Bright 2016" (CNCI). PARATYPES (2): labeled with same data as holotype (CNCI).

**Description (Male?).** Length 1.4 mm, 2.8 times longer than wide; reddish-brown. Frons evenly, weakly convex, with a very faint longitudinal carina or line extending from epistoma to above upper eye level; surface moderately shining, with faint, weakly impressed punctures and short, scattered setae. Antennal club missing. Pronotum as long as wide, widest at middle; sides strongly arcuate on basal half, constricted in front of middle; anterior margin broadly rounded, bearing six distinctly elevated, separated serrations with several very small serrations placed between larger serrations; anterior slope bearing numerous, low, asperities in no apparent order; summit distinctly elevated; posterior area weakly impressed behind summit, surface smooth, shining, with large, very close, impressed punctures, each with



**Figures 274–282.** Adult features of *Pityophthorus* spp. **274)** *P. abnormalis* (declivity). **275)** *P. abnormalis* (mandibles). **276)** *P. acolus* (declivity). **277)** *P. antillicus* (declivity). **278)** *P. astringens* (declivity). **279)** *P. auspicatus* (declivity). **280)** *P. bigranulatus* (declivity). **281)** *P. capillosus* (declivity). **282)** *P. centralis* (declivity).

a small, erect seta, interpuncture space very narrow, with scattered, minute punctures. Elytra 2.0 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae not impressed, punctured in regular rows, each puncture bearing a short, recumbent seta slightly longer than diameter of puncture, row of setae extending from elytral base to apex; discal interstriae each with a row of fine punctures and a row of setae, each seta slightly longer than strial setae. Declivity evenly convex; interstriae 1 slightly elevated, unarmed; interstriae 2 as wide as or narrower than discal width, unarmed, glabrous; interstriae 3 not elevated, with a few, extremely minute granules; remaining surface with short strial and interstitial setae; striae 1 weakly impressed.

**Female.** Unknown.

**Distribution.** This species is known from Puerto Rico.

**Etymology.** From *capillus*, Latin for hair, referring to the presence of short setae on the elytra.

**Comments.** Adults of this species may be distinguished by the conspicuous rows of striae and interstriae setae on the elytra and by the small size. The holotype is thought to be a male based on the extremely faint longitudinal carina on the frons, a feature commonly associated with males.

***Pityophthorus centralis* Eichhoff**

Figure 282.

*Pityophthorus centralis* Eichhoff 1878b: 188; Wood and Bright 1992: 989.

*Pityophthorus lateralis* Swaine 1917: 27 (Key West, Florida).

**Description (Female).** Length 1.2–1.5 mm, 2.7–3.0 times longer than wide. Frons convex, very weakly, transversely flattened above epistoma; surface shining, deeply, densely punctured, with inconspicuous setae. Antennal club elongate-oval, 1.4–1.5 times longer than wide, widest through segments 2 and 3; sutures 1 and 2 transverse. Pronotum as long as wide; sides weakly arcuate; asperities on anterior slope arranged into three or four, regular, concentric rows, with several additional, broken, indistinct rows at summit; summit distinctly elevated; posterior area of disc densely, deeply punctured, punctures separated by a distance less than their diameters, interpuncture space shining, with numerous, fine punctures. Elytra 1.5–1.7 times longer than wide; apex broadly rounded; discal striae punctured in regular rows, with large, distinctly impressed punctures, these almost touching; discal interstriae shining, narrower than striae, surface smooth, with fine lines and points. Declivity convex; interstriae 1 slightly elevated above 2, usually smooth or with a median row of very fine granules; interstriae 2 shallowly impressed, as wide as discal width, surface shining, with a median row of very fine punctures and very fine setae (variable); interstriae 3 moderately elevated, slightly higher than interstriae 1, with a row of several, very fine granules; punctures in striae 1 and 2 not readily visible, reduced in size and obscure.

**Male.** Nearly identical to female except frons slightly more strongly impressed, declivital setae stouter and pronotal punctures slightly deeper and slightly larger.

**Distribution.** This species is known from extreme southern peninsular Florida and the Florida Keys and in the West Indies from the Bahamas and Cuba.

**Specimens examined.** **BAHAMAS: Andros Island**, Forfar Field Sta., Stafford Creek, various dates in June, 2001, M. C. Thomas, blacklight trap in coastal coppice (14–FSCA, CNCI); Forfar Field Station, mercury vapor and blacklight, 4 June 2001, R. Turnbow (5–RHTC, CNCI); Atala Coppice, blacklight trap, 8 June 2004 (1–RHTC); Maidenhair Coppice, blacklight trap, 10 June 2004, R. Turnbow (1–RHTC); Blanket 2<sup>nd</sup>(N), Emily Johnson's place, 08.VII.1987, J. Browne, low coast coppice-blacklight (5–FDAC, CNCI). **Great Inagua Island**, South Bay beach, 14 June 2007, R. Turnbow (1–RHTC); north coast road, N21.10813, W73.60196, 13.VIII.2007, Thomas, Turnbow and Smith (1–FSCA). **San Salvador Island**, Gerace Research Ctr., 24°07'N, 74°27'W, 15–20 February 2004 / at blacklight, scrub forest edge at open catchment, W. E. Steiner and J. M. Swearingen (5–USNM). **South Bimini Island**, July 1951, C. and P. Vaurie (1–AMNH).

**Records from literature.** **CUBA:** Island record only (Vázquez et al. 2003).

**Comments.** Adults of this common species may be recognized by the concentric rows of asperities on the anterior slope of the pronotum, by the distinctly impressed, flat, not widened declivital interstriae 2 which bears a median row of short setae and by the small size. Adults are very similar to those of *P. lautus* Eichhoff, a species that occurs in the eastern United States south to Mississippi (Bright 1981b) and which Atkinson and Peck (1994) record from Collier Co. in southern peninsular Florida. Close examination of all the specimens of *P. centralis* available from the West Indies and comparison with numerous specimens of *P. lautus* from the eastern United States revealed no specimens that I could confidently refer to *P. lautus*.

The species is recorded from *Metopium toxiferum* and *Pinus elliottii*.

The species was described by Eichhoff (1878) from Cuba and the type was destroyed during World War II. A neotype was designated (Bright 1978) and is deposited in the USNM.

***Pityophthorus contractus* Bright**

Figure 283.

*Pityophthorus contractus* Bright 1985: 179; Wood and Bright 1992: 990.

**Description (Female).** Length 1.6–1.8 mm, 2.8 times longer than wide. Frons very weakly, transversely flattened from epistoma to just below upper eye level, with a very weakly, transverse median carina extending across impression or reduced to a very short line just above epistoma or absent, vertex more strongly convex with a weakly elevated, longitudinal callus; surface distinctly to obscurely punctured, punctures fine, sparser and finer on vertex with interpuncture space minutely reticulate. Antennal club narrowly oval, 1.2 times longer than wide, widest at middle; sutures 1 and 2 transverse. Pronotum 1.1 times longer than wide; sides weakly arcuate; asperities on anterior slope arranged into three, regular, concentric rows, with several additional, broken, indistinct rows at summit; summit not elevated; posterior area of disc smooth, densely punctured, punctures distinct, deeply impressed, separated by a distance less than their diameters, interpuncture space shining, with numerous, fine, minute punctures. Elytra 1.9 times longer than wide; apex broadly rounded; discal striae punctured in regular rows, with large, distinctly impressed punctures, these almost touching; discal interstriae as wide as striae, surface smooth, shining, impunctate but occasionally with one or two punctures, these bearing a fine, erect seta. Declivity convex; interstriae 1 shallowly impressed below level of 3, shining, devoid of granules but with a median row of fine, erect setae; interstriae 2 shallowly impressed, as wide as discal width, surface shining, devoid of setae or granules; interstriae 3 not elevated, bearing a row of large, deep punctures and a row of fine, erect setae, these longer than those on interstriae 1; striae 1 narrowly impressed, punctures much smaller than those on disc; striae 2 and 3 with large, deep punctures equal in size to those on disc.

**Male.** Identical to female, distinguished by the abdominal segmentation.

**Distribution.** This species is known from Jamaica.

**Specimens examined. JAMAICA:** Portland between Hardwar Gap and Green Hills, 1100 m, 21.VIII.1980, A. Norrbom / under bark of fallen tree (26-CMNH, CNCI).

**Comments.** Adults of this species may be recognized by the concentric row of asperities on the anterior pronotal slope, by the presence of a distinct, slightly elevated summit on the pronotum and by the flattened elytral declivity with interstriae 1 and 3 devoid of granules.

***Pityophthorus confusus bellus* Blackman**

*Pityophthorus bellus* Blackman 1928a: 123; Wood and Bright 1992: 990 (as synonym of *P. confusus*).

*Pityophthorus confusus bellus*: Bright 1981b: 291.

**Description (Female and Male).** As described below for *P. confusus sequestrus*.

**Distribution.** This subspecies occurs in eastern and southeastern United States from Pennsylvania and West Virginia to Texas and Florida and northern Mexico from Durango, Guerrero and Jalisco (Bright 1981b). The Bahamas record is a new range extension.

**Specimens examined. BAHAMAS: New Providence,** Carmichael Area, 25°01'N, 77°25'W, 14 February 2005 / At blacklight in Caribbean pine forest and scrub, coll. W. E. Steiner and J. M. Swearingen (2-USNM).

**Comments.** Adults of this subspecies occur throughout the eastern and southeastern United States in numerous species of *Pinus*, but in the Bahamas, they occur in *P. caribaea*, which is native to the Bahamas and the Turks and Caicos islands. The Dominican Republic population, described below as another subspecies, evidently occurs in *P. occidentalis* which is endemic to Hispaniola and a small area in southern Cuba (Critchfield and Little 1966). See additional comments below.

***Pityophthorus confusus sequestus* Bright, subsp. nov.**

Figure 284.

**Type Material.** **HOLOTYPE** (female) labeled: “**DOM. REP.:** Province Pedernales, ca. 35 km NNW Cabo Rojo, 1370 m, El Aceitillar, 26 Aug-09 SEPT 1988, pine forest intercept trap” / “M. A. Ivie, T. K. Philips and K. A. Johnson colrs.” / “**HOLOTYPE** *Pityophthorus confusus sequestus* D. E. Bright 2016” (WIBF [CNCI]). **PARATYPES** (7): 3 labeled same as holotype (WIBF, CNCI); 1 labeled: “**DOMINICAN REPUBLIC:** La Vega, vic. Salto de Aguas Blancos, 19 July 1996, R. Turnbow” (RHTC); 1 labeled: “**DOMINICAN REPUBLIC:** Pedernales, 30 km N Cabo Rojo, 1070 m, 18.07N, 71.39W” / “27 September 1991, R. Davidson, C. Young, S. Thompson, J. Rawlins, Reservior, pine woods” (CMNH); 2 labeled: “**DOMINICAN REPUBLIC:** Pedernales, Sierra de Baoruco, Aceitillar, 25.4 km ENE Pedernales, 18.05.27N, 71.31.08W, 1270 m, 14 June 2003” / “C. Young, J. Rawlins, C. Nunez, R. Davidson: Acevedo, M. de Cruz, dense broadleaf seasonal forest, pine, uv light, Sample 42312” (CMNH, CNCI).

**Description (Female).** Length 1.8–2.4 mm, 3.0 times longer than wide. Frons moderately to strongly concave from epistoma to just below upper eye level and laterally from eye to eye; surface shining, finely punctured, bearing setae of moderate length, those on periphery longer and incurved. Antennal club narrowly oval, 1.4 times longer than wide, all segments equal in width; sutures 1 and 2 transverse. Pronotum 1.1–1.2 times longer than wide; sides nearly straight on posterior half; asperities on anterior slope low, broad, very numerous, scattered in no apparent order; summit very low to not elevated; posterior area moderately punctured, punctures deep; interpuncture space shining, with numerous, fine, minute punctures; lateral margin bearing a wide, deep groove on posterior half. Elytra 1.7–1.8 times longer than wide; apex moderately acuminate; discal striae punctured in irregular rows, with large, distinctly impressed punctures, these almost touching; discal interstriae equal to or narrower than striae, all bearing a few irregular punctures, these equal in size and depth to those in striae. Declivity sloping; interstriae 1 moderately elevated, with a median row of six to eight fine granules; interstriae 2 shallowly impressed, as wide as discal width, surface dull, minutely reticulate, devoid of setae or granules; interstriae 3 moderately elevated, bearing a median row of fine granules, these equal in size to those in interstriae 1; punctures in striae 1 and 2 obsolete.

**Male.** Frons concave in middle, setae sparse and fine, all of equal length. Pronotum and elytra as in female except declivital interstriae 2 more deeply impressed and granules on declivital interstriae 1 and 3 larger.

**Distribution.** This subspecies is known from the Dominican Republic, but should be found on other islands in the Greater Antilles where pines occur naturally.

**Etymology.** From *sequestro*, Latin for set apart or separate, referring to the subspecies status.

**Comments.** This subspecies is here recognized as a geographically isolated population of *P. confusus* Blandford (Bright 1981b). Two subspecies of *P. confusus* were recognized by me in 1981, one occurring in southern Mexico (the nominate one) and one occurring in the southeastern United States and northern Mexico which was designated as *P. confusus bellus* Blackman (see comments above). The Dominican Republic population represents a third subspecies. Wood, in Wood and Bright (1992), considered *P. bellus* as a synonym of *P. confusus* but my examination of numerous specimens showed that the species could be divided into several, discrete geographical populations.

Adults of this subspecies resemble those of *P. annectens* but differs by their larger size, by the more deeply concave frons of the female, by the concave male frons and by the wider, deeper pronotal groove.

***Pityophthorus congruus* Bright, sp. nov.**

Figure 285.

**Type Material.** **HOLOTYPE** (male) labeled: “**DOMINICAN REPUBLIC:** Independencia, Sierra de Neiba south slope near summit, 4.0 km N Angel Feliz, 18.40.21N, 71.45.05W” / “1825 m, 1–2 Apr 2004, J. Rawlins, C. Young, R. Davidson, broadleaf cloud forest without pine, hand collected, Sample 34243” /

“Carnegie Museum Specimen Number CMNH-350.370” / “HOLOTYPE *Pityophthorus congruus* D. E. Bright 2016” (CMNH). **PARATYPE** (1) labeled: “**DOMINICAN REPUBLIC**: Pedernales, La Abeja, 38 km NNW Cabo Rojo, 18.09N, 71.38W, 1160 m, 14 July 1987, R. Davidson, J. Rawlins” / “Carnegie Museum Specimen Number CMNH-350.187” (CNCI).

**Description (Male).** Length 1.9 mm, 3.1 times longer than wide; light brown. Frons weakly convex; surface shining, with close, large, weakly impressed punctures and scattered inconspicuous, short setae. Antennal club oval, 1.1 times longer than wide, widest at segment 2; first and second sutures 1 and 2 nearly straight, weakly chitinized at lateral margins, suture 3 strongly arcuate; segment 1 as wide as 2. Pronotum 1.2 times longer than wide, widest on basal fourth; sides weakly arcuate on basal half; anterior margin broadly rounded, bearing 10 acutely elevated serrations; anterior slope bearing numerous, low, wide asperities, these scattered in no apparent order, although several asperities are usually basally joined; summit not distinctly elevated; posterior area not impressed behind summit, surface smooth, shining, with large, very close, impressed punctures, interpuncture space with densely placed minute punctures. Elytra 1.9 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae not impressed, punctured in regular rows, punctures distinct, large, deeply impressed; discal interstriae as wide as or slightly narrower than striae, brightly shining, smooth, with a few scattered punctures, glabrous except near declivity where all interstriae bear a few long, erect setae. Declivity bisulcate; interstriae 2 moderately impressed below level of interstriae 1 and 3, as wide as discal width, unarmed; interstriae 1 slightly elevated, with three to five small granules; interstriae 3 distinctly elevated, rounded on summit, bearing seven rounded granules; punctures in striae 1 and 2 distinct; all interstriae (except 2) bearing a median row of several long setae.

**Female.** Unknown.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** From *congruus*, Latin for suitable or fit, referring to the placement of the species in *Pityophthorus*.

**Comments.** Adults of this species may be recognized by the larger, more slender body, by the large strial punctures arranged in even rows and by the long setae in each declivital interstriae except 2.

***Pityophthorus convexicollis* Bright and Torres**

Figure 286.

*Pityophthorus convexicollis* Bright and Torres 2006: 422.

**Description (Female).** Length 0.9–1.1 mm, 2.7–2.8 times longer than wide; dark to light brown. Frons convex, weakly flattened from epistoma to upper level of eyes; surface shining, minutely reticulate, generally glabrous but with a few, scattered, long, yellowish setae. Antennal club oval, as long as wide, widest at middle; sutures visible at lateral margins, evidently transverse, chitinized at lateral margins. Pronotum 1.2 times longer than wide, widest on posterior half; sides weakly arcuate on basal two-thirds; anterior margin with an acutely elevated ridge, without serrations; anterior one-third of disc convex, with numerous, scattered, low asperities; summit not elevated; posterior two-thirds smooth, moderately shining, densely, minutely reticulate, with scattered, large, deeply impressed punctures; vestiture absent. Elytra 1.8 times longer than wide; sides parallel on basal three-quarters, converging to broadly rounded apex; disc shining, glabrous, with striae distinctly punctured in regular rows, not impressed except striae 1 is weakly impressed, more so toward declivity; strial punctures large, deeply impressed; interstriae narrower than striae. Declivity evenly convex; strial punctures distinct; striae 1 distinctly but weakly impressed; interstriae 1 weakly elevated, flat, smooth; remaining interstriae not elevated, each interstriae with a median row of erect, hairlike to very narrowly spatulate setae and a few very minute granules.

**Male.** Not represented in the material examined.

**Distribution.** This species is known from Puerto Rico.

**Specimens examined. PUERTO RICO:** Caribbean National Forest, Mt. Britton Summit, 4–12 Aug 1999, 941 m: Kovarik, flight intercept trap (holotype WIBF[CNCI]; 2 paratypes WIBF). One paratype has been lost.

**Comments.** Adults of this species superficially resemble those of *P. laevis* but are distinguished by their smaller size, by the lack of an elevated summit on the pronotal disc, by the more deeply impressed striae 1 on the declivity, by the distinctly punctured elytral striae and by the much narrower declivital setae.

***Pityophthorus convexus* Bright, sp. nov.**

Figure 287.

**Type Material. HOLOTYPE** (female) labeled: “**JAMAICA:** Manchester Par., Mandeville, DeCarteret College, 19.V.1969, R. E. Woodruff and K. Stanton, blacklight trap” / “HOLOTYPE *Pityophthorus convexus* D. E. Bright 2016” (FSCA). **ALLOTYPE** labeled with same data as holotype plus my allotype label (FSCA).

**Description (Female).** Length 1.4 mm, 2.8 times longer than wide; light brown. Frons broadly, weakly concave from eye to eye and from epistomal margin to slightly above upper level of eyes; surface smooth, brightly shining, appearing impunctate and glabrous, but a few long setae can be seen; epistomal margin straight, weakly, acutely elevated, bearing a few, scattered setae. Antennal club small, oval, 1.5 times longer than wide widest at middle; sutures 1 and 2 straight, weakly chitinized at lateral margins; segment 1 as wide as 2. Pronotum as long as wide, widest at middle; sides weakly arcuate on basal half; anterior margin broadly rounded, bearing a row of eight broad, basally contiguous serrations; anterior slope bearing four evenly concentric rows of asperities; summit weakly elevated; posterior area weakly impressed behind summit, surface smooth, weakly shining, minutely reticulate, with small, widely separated, impressed punctures, these separated by a distance 4.0–5.0 times greater than their diameters. Elytra 1.5 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae not impressed, punctured in regular rows, punctures distinct, moderately large, each bearing a very short seta; discal interstriae as wide as or slightly wider than striae, brightly shining, smooth, glabrous except near declivity. Declivity evenly convex; striae 1 very weakly impressed; all interstriae (including 2) bearing a median row of erect setae, these as long as interstitial width; striae punctures obscure; interstitial granules absent.

**Male.** Similar in size and proportions to female. Frons flattened on a smaller area, flattened portion extending to slightly below upper eye level, less brightly shining, with scattered, distinct punctures; declivital setae shorter.

**Distribution.** This species is known from Jamaica.

**Etymology.** From *convexus*, Latin for arched outward, referring to the evenly convex elytral apex.

**Comments.** Adults of this species may be easily recognized by the evenly convex elytral declivity, by the presence of a median row of erect setae in all declivital interstriae and by the broadly concave, brightly shining female frons.

***Pityophthorus dissidens* Bright, sp. nov.**

Figure 288.

**Type Material. HOLOTYPE** (male) labeled: “**JAMAICA:** Westmoreland Par., Negril, 22.VI.1970, E. G. Farnsworth, mosquito light trap” / “HOLOTYPE *Pityophthorus dissidens* D. E. Bright 2016” (CNCI).

**Description (Male).** Length 1.6 mm, 2.6 times longer than wide; dark brown. Frons weakly convex from epistoma to above upper level of eyes; surface smooth, brightly shining, glabrous, punctures weakly impressed, obscure. Antennal club oval, 1.5 times longer than wide, widest at middle; sutures 1 and 2 weakly arcuate, weakly chitinized at lateral margins; segment 1 narrower than 2. Pronotum 1.1 times longer than wide, widest near base; sides broadly arcuate; anterior margin broadly rounded, bearing a

row of 10 low, basally contiguous serrations; anterior slope bearing four evenly concentric rows of asperities; summit weakly elevated; posterior area weakly impressed behind summit, surface smooth, weakly shining, minutely reticulate, with large, deeply impressed punctures, these separated by a distance equal to less than their diameters. Elytra 1.5 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae not impressed, punctured in regular rows, punctures distinct, moderately large, each bearing a very short seta; discal interstriae 1.5 times wider than striae, brightly shining, smooth, each with a median row of erect setae, these slightly longer than interstitial width. Declivity evenly convex; striae 1 distinctly impressed, 2 and 3 weakly impressed; all interstriae (including 2) bearing a median row of erect setae, these as long as interstitial width, granules or other modifications not present; striae punctures large, distinctly impressed.

**Female.** Unknown.

**Distribution.** This species is known from Jamaica.

**Etymology.** From *dissidens*, Latin for differing.

**Comments.** The male of this species may be recognized by the large, deeply impressed striae punctures, by the presence of a distinct row of short, erect setae in each elytral and declivital interstriae and by the broadly convex declivity. The female is unknown.

***Pityophthorus diversus* Bright**

Figure 289.

*Pityophthorus diversus* Bright 1972: 87; Wood and Bright 1992: 996.

**Description (Male).** Length 1.3 mm, 2.6 times longer than wide; reddish-brown, apical half of elytra darker. Frons convex, somewhat flattened to upper level of eyes; a short, longitudinal, median carina on vertex, the lowest point of this just below upper level of eyes, faintly elevated below; surface shining, faintly minutely reticulate, punctures close, deep; vestiture sparse, consisting of short, hairlike setae. Antennal club 1.5 times longer than wide, widest at middle; sutures 1 and 2 nearly straight, chitinized near lateral margin. Pronotum as long as wide; sides arcuate, distinctly but weakly constricted in front of middle; anterior margin broadly rounded, serrate; anterior slope bearing numerous asperities, these joined and arranged in three or four distinct, concentric rows; summit weakly elevated; posterior and lateral portions smooth, faintly reticulate, punctures of moderate size, deeply impressed, separated by their own diameter; median line impunctate, very faintly elevated. Elytra 1.6 times longer than wide; sides parallel on anterior two-thirds, broadly rounded behind; discal striae (except 1) not impressed, punctured in regular rows, these punctures large, deep; interstriae wider than striae, smooth, shining, impunctate except near declivity. Declivity convex; striae 1 deeply impressed; other striae as on disc except punctures smaller; each interstriae bearing a median row of narrow, flattened to subspatulate setae, these hairlike on sides.

**Female.** A specimen thought to be the female of this species is very similar to the male but it slightly larger at 1.5 mm and the frons is slightly flatter and the vestiture of the declivity is more abundant.

**Distribution.** This species is known from Jamaica and Saint John in the U. S. Virgin Islands

**Specimens examined. JAMAICA:** Westmorland Parish, Cornwall Mountain, 15 August 1966, H. F. Howden (4-CNCI). **VIRGIN ISLANDS: Saint John,** Est. Lameshur Bay, Reef Bay Trail, 5 ft., 27 JUL- 14 OCT 1994, M. A. and L. L. Ivie (1-WIBF).

**Comments.** Adults of this species may be recognized by the narrowly spatulate to hairlike interstitial setae which are slightly longer than interstitial width on the declivity and by the dull, minutely reticulate interpuncture surface on the posterior portion of pronotum.

***Pityophthorus eccentricus* Bright, sp. nov.**

Figure 290.

**Type Material. HOLOTYPE** (female) labeled: “CUBA: Santiago Province, Gran Piedra Met. Radar, 6–17.XII.95, 1100 m, elfin for. FIT, S. Peck, 95–76” / “HOLOTYPE *Pityophthorus eccentricus* D. E. Bright 2016” (SBPC [CNCI]).

**Description (Female).** Length 2.5 mm, 2.7 times longer than wide; dark reddish-brown. Frons weakly convex from eye to eye and from epistoma to above upper eye level; surface shining, with close, weakly impressed, obscure punctures and close, scattered setae, these slightly longer around periphery. Antennal club oval, 1.3 times longer than wide; suture 1 straight, weakly chitinized at lateral margins, suture 2 very weakly arcuate, not chitinized at margins; segment 1 as wide as 2. Pronotum as long as wide, widest on basal fourth; sides weakly arcuate on basal half; anterior margin broadly rounded, bearing eight weakly elevated serrations; anterior slope bearing numerous, low, wide asperities, these scattered in no apparent order; summit not elevated; posterior area not impressed behind summit, surface smooth, moderately shining, with obscure, close, impressed punctures, interpuncture space with dense, obscure, minute punctures. Elytra 1.5 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae and interstriae not discernable, punctures randomly placed, large, deeply impressed. Declivity very evenly convex; punctures randomly placed, deeply impressed, with indication of striae scarcely evident.

**Male.** Unknown.

**Distribution.** This species is known from Cuba.

**Etymology.** From *eccentricus*, Latin for different or odd.

**Comments.** Females of this species are very similar to those of *P. pulicarius*, but differ by the very evenly convex elytral declivity and by the lack of granules in interstriae 1. The elytral declivity of *P. pulicarius* is slightly impressed, interstriae 3 is slightly elevated and interstriae 1 bears a median row of very small granules.

***Pityophthorus eggersianus* Schedl**

Figure 315.

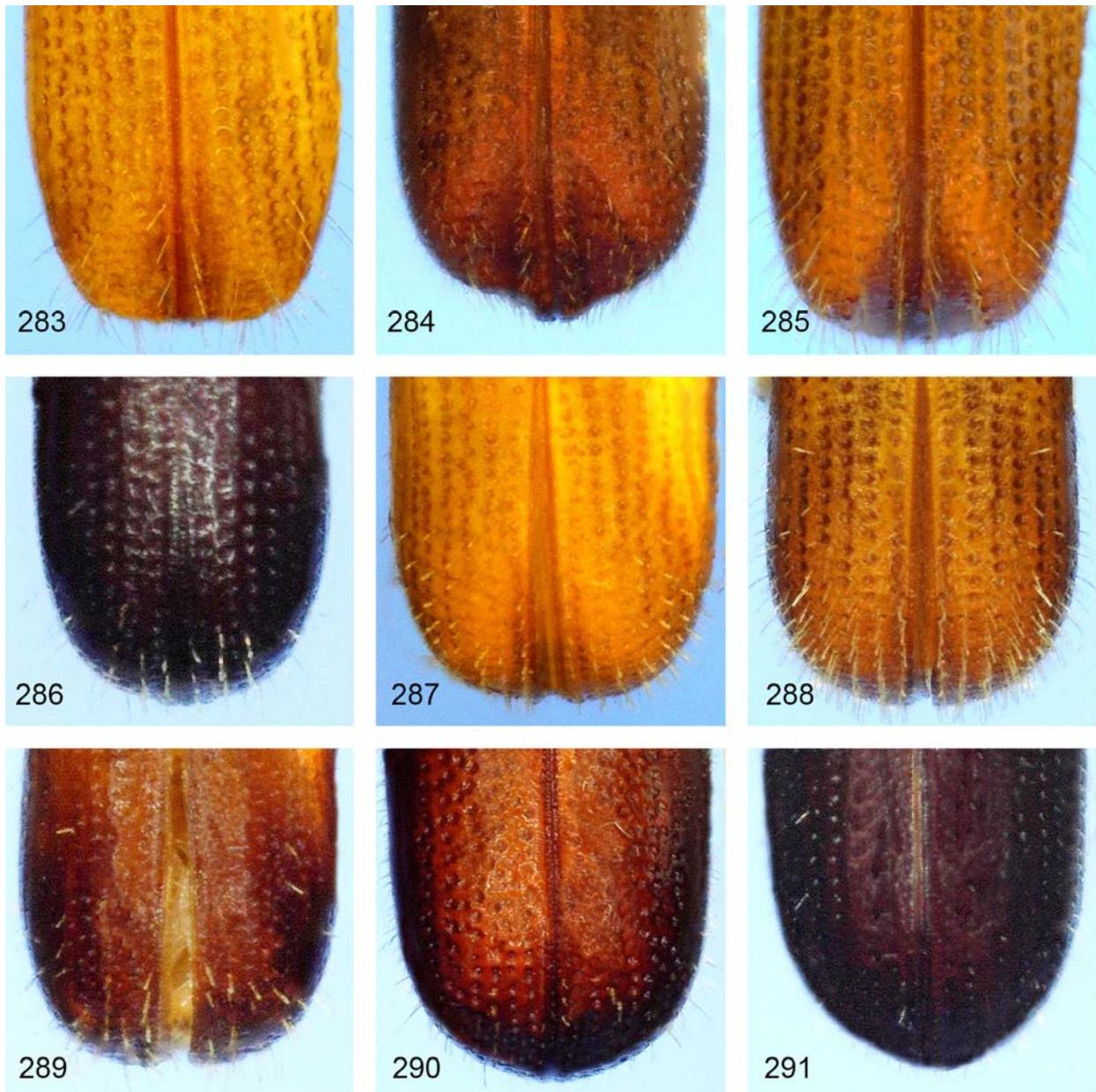
*Pityophthorus denticulatus* Eggers 1940: 129 (preoccupied by Wichmann 1915).

*Pityophthorus guadeloupensis* Nunberg 1956: 208 (replacement name, preoccupied by Schedl 1951).

*Pityophthorus eggersianus* Schedl 1958: 144 (replacement name).

*Araptus eggersianus*: Wood and Bright 1992: 955.

**Description (Male).** Length 1.3–1.6 mm, 3.0 times longer than wide; light yellowish-brown. Frons weakly flattened from epistoma to slightly above upper eye level; surface shining, with scattered, fine punctures and scattered, inconspicuous, short setae. Antennal club oval, 1.2 times longer than wide; suture 1 inconspicuous, transverse, weakly chitinized at lateral margins; suture 2 transverse, inconspicuous, marked by a clump of short setae at lateral margins; segment 1 as wide as 2. Pronotum 1.3 times longer than wide, widest at posterior fourth; sides parallel on basal half; anterior margin broadly rounded, bearing a row of ten distinct serrations; anterior slope bearing numerous, small asperities, these arranged into irregular concentric rows, seemingly more scattered in median portion, more evenly concentric laterally; summit not elevated; posterior area not impressed behind summit, surface smooth, shining, with close, impressed punctures, interpuncture space with numerous minute punctures. Elytra 1.5 times longer than wide; sides parallel on basal two-thirds, apex narrowly rounded, almost acuminate; discal striae not impressed, punctured in regular rows, punctures distinct, moderately large; discal interstriae moderately shining, micro-rugulose, 1.5 times wider than striae, glabrous. Declivity bisulcate; interstriae 2 deeply impressed below level of interstriae 1 and 3, as wide as discal width, unarmed; interstriae 1 slightly elevated, bearing three or four small, acute granules; interstriae 3 distinctly el-



**Figures 283–291.** Declivities of *Pityophthorus* spp. **283)** *P. confractus*. **284)** *P. confusus sequestus*. **285)** *P. congruus*. **286)** *P. convexicollis*. **287)** *P. convexus*. **288)** *P. dissidens*. **289)** *P. diversus*. **290)** *P. eccentricus*. **291)** *P. favorabilis*.

evated, rounded on summit, bearing three or four large, acute granules; punctures in striae 1 and 2 distinct; interstriae 1, 3, 5 and 7 bearing several long setae.

**Female.** Similar in size and proportions to male. Frons flattened, bearing numerous, long, erect setae, these longer and incurved on periphery. Asperities on anterior slope of pronotum arranged in more even concentric rows than in male. Elytral declivity more evenly convex; interstriae 2 not impressed, granules in interstriae 1 and 3 much smaller than in male, or apparently absent.

**Distribution.** This species is known from the Dominican Republic, Guadeloupe, Saint Lucia and Saint Vincent.

**Specimens examined. DOMINICAN REPUBLIC:** Pedernales, 26 km. N Cabo Rojo, 725 m, 18–06N, 71–38W / 21 October 1991, C. Young, S. Thompson, R. Davidson, J. Rawlins, wet deciduous forest / Carnegie Museum

Number CMNH 350.410 (1-CMNH). **GUADELOUPE:** BT: Fefe Forest, near Capesterre, V.25.1985, C. W. and L. B. O'Brien (1-CNCI): Gourbeyre, Acc. 4860 (12-AMNH, CNCI). **SAINT LUCIA:** Barre d'Isle, north side, 13.93268°N, 60.95775°W, A. R. Cline, S. D. Gaimari, R. Winton, 22 May 2009, ex: canopy Malaise (1-WIBF); Barre de L'Isle, 13.9368°N, 60.9593°W, 340 m, 25–28 June 2009, uv light, E. A. Ivie (1-WIBF); Mon Repos, 6.5 km W Fox Grove Inn, 10–28.VI.2007, submontane forest flight intercept trap, 300 m, S. and J. Peck (5-SBPC, CNCI); Mon Repos, 6.5 km W Fox Grove Inn, 9.VII.2007 / S. and J. Peck, submontane litter, 300 m (3-SBPC). **SAINT VINCENT AND THE GRENADINES: Saint Vincent,** Hermitage Forest, E of Spring Village, 15–27.VIII.2006, forest edge flight intercept trap and Malaise trap, 348 m, S. and J. Peck (1-SBPC).

**Comments.** Adults of this species may be distinguished by their narrow, elongate body shape, by the small or absent granules (female) or small, acute spines or granules (male) on declivital interstriae 3, by the narrow declivital interstriae 2, by the distinct punctures in declivital interstriae 1 and 2 and by the presence of abundant setae on the female frons.

The holotype and cotype in the NHMW were examined in July 2014. Both specimens are males.

***Pityophthorus favorabilis* Bright, sp. nov.**

Figure 291.

**Type Material.** **HOLOTYPE** (female) labeled: “**DOMIN. REP.:** Province San Juan, 19°02'N, 70°56'W, 2545 m, Aquita Fria: N.A. Berm, 08 APR-07 JUL 1992, M. A. Ivie, flight interc. trap” / “**HOLOTYPE** *Pityophthorus favorabilis* D. E. Bright 2016” (WIBF [CNCI]). **ALLOTYPE** labeled: “**DOM. REP.:** Province Santiago, N. slope Pico del Yaque, 2515 m, 08 APR-07 JUL 1992, M. A. Ivie: N.A. Bermud, flight intercept trap” / “**ALLOTYPE** *Pityophthorus favorabilis* D. E. Bright 2016” (WIBF [CNCI]). **PARATYPES** (4): 1 labeled with same data as holotype (CNCI); 2 labeled: “**DOM. REP.:** P. San Juan” / “Sant Pico Duarte Weather Sta., 19°02'N, 70°00'W, 2855 m, 6–7 APR 1992, flight int. trap, M. A. Ivie and D. Sikes” (CNCI, WIBF); 1 labeled: “**HAITI:** Department Sud-Oueste, Parc Nat'l La Visite depression, 1 km W.” / “pk. hdqtrs., 1850 m, 11–V-1984, M. C. Thomas” (FSCA).

**Description (Female).** Length 1.6 mm, 2.6 times longer than wide; black. Frons weakly concave from epistoma to upper eye level; surface moderately shining, densely, obscurely punctured, with short, scattered setae of equal or nearly equal length. Antennal club circular, as long as wide; sutures 1 and 2 straight. Pronotum as long as wide, widest at middle; sides strongly arcuate on basal half, constricted in front of middle; anterior margin broadly rounded, bearing six to eight distinctly elevated, separated serrations with several very small serrations placed between larger serrations, median pair of serrations slightly larger and basally contiguous; anterior slope bearing numerous, low, asperities in no apparent order; summit distinctly elevated; posterior area weakly impressed behind summit, surface smooth, shining, with large, very close, impressed punctures, interpuncture space very narrow, with scattered, minute punctures. Elytra 1.7 times longer than wide; sides parallel on basal two-thirds, apex narrowly rounded; discal striae (except 1) not impressed, punctured in regular rows, each puncture bearing a very short, recumbent seta shorter than diameter of puncture; discal interstriae as wide as striae, smooth, glabrous, interstriae 1, 3, 5 and 7 each with a few setae on apical third, each seta distinctly longer than strial setae. Declivity evenly convex; interstriae 1 slightly elevated, unarmed; interstriae 2 as wide as or narrower than discal width, unarmed, glabrous; interstriae 3 not elevated, unarmed; interstriae 1, 3, 5 and 7 each with a median row of longer setae; striae 1 distinctly impressed.

**Male.** Similar in size and proportions to female. Frons weakly convex, with large, deep punctures and a few short, scattered setae.

**Distribution.** This species is known from Haiti and the Dominican Republic.

**Etymology.** From *favorabilis*, Latin for agreeable.

**Comments.** Adults of this species are very similar to those of *P. laevis* but are distinctly larger. Other minor differences are mentioned in the above description.

Evidently, adults of this species inhabit higher elevations on the island of Hispaniola.

***Pityophthorus foleyi* Bright, sp. nov.**

Figure 292.

**Type Material. HOLOTYPE** (female) labeled: "SAINT LUCIA: Quilles Forest Reserve, 323 m, 13.85332°N, 60.98282°W, 10 May 2009, on log, I. A. Foley and R. C. Winton" / "HOLOTYPE *Pityophthorus foleyi* D. E. Bright 2016" (WIBF [CNCI]).

**Description (Female).** Length 1.5 mm, 3.0 times longer than wide; light yellowish-brown. Frons broadly flattened on a large semicircular area extending from epistomal margin to well above upper eye level and laterally almost from eye to eye; surface shining, densely minutely punctured, bearing a brush of long setae, those on periphery slightly longer and incurved. Antennal club 1.4 times longer than wide, with two transverse sutures; each segment equal in length. Pronotum 1.4 times longer than wide, widest on basal half; sides parallel on basal half; apex broadly rounded, with a row of 10 low, basally contiguous serrations, these decreasing in size laterally; anterior slope with two, irregular, broken concentric rows of asperities, additional asperities scattered around summit area; summit weakly elevated; posterior area moderately shining, punctures deeply impressed, separated by a distance less than their diameters, interpuncture space with minute, impressed punctures. Elytra 1.8 times longer than wide; sides parallel on basal two-thirds, apex narrowly rounded; discal striae not impressed, punctured in regular rows, punctures deeply impressed, large, separated by a distance less than their diameters; discal interstriae weakly shining, weakly convex, as wide as striae, glabrous. Declivity convex; interstriae 1 slightly elevated, bearing three erect, very fine setae; interstriae 2 slightly wider than discal width, flat; other interstriae not elevated; striae 1 slightly impressed, punctures obscure; striae 2 and remaining striae with deep punctures.

**Male.** Unknown.

**Distribution.** This species is known from the type locality in Saint Lucia.

**Etymology.** This species is named for I. A. Foley, one of the collectors of the holotype.

**Comments.** Females of this species may be most easily distinguished by the dense brush of setae on the frons, by the slender, elongate body shape and by the unmodified elytral declivity with striae 2 distinctly punctured.

***Pityophthorus gimmeli* Bright, sp. nov.**

Figure 293.

**Type Material. HOLOTYPE** (male) labeled: "SAINT LUCIA: Barre de L'Isle, 13.93682°N, 60.95936°W, 340 m, 08 JULY 2009, M. L. Gimmel, at uv light" / "HOLOTYPE *Pityophthorus gimmeli* D. E. Bright 2016" (WIBF [CNCI]).

**Description (Male).** Length 1.4 mm, 2.8 times longer than wide; light yellowish-brown. Frons evenly convex with a weakly elevated, longitudinal carina extending from epistomal margin to level of upper margin of eyes; surface dull, minutely reticulate, with densely placed, obscure punctures; epistomal margin weakly emarginate, shining; vestiture sparse, inconspicuous. Antennal club 1.4 times longer than wide, suture 1 slightly arcuate, 2 more strongly arcuate; segment 2 2.0 times longer than 1. Pronotum 1.2 times longer than wide, widest at basal angle; sides weakly arcuate, converging to apex; apex narrowly rounded, with a row of six very faint, obscure, widely separated serrations; anterior slope with numerous, scattered asperities; summit not elevated; posterior area dull, densely, minutely reticulate, punctures absent or very weakly impressed in some areas. Elytra 1.6 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; entire discal surface dull, minutely reticulate, striae and striae punctures not evident except in striae 1, interstriae not evident. Declivity convex, surface as on disc with striae punctures obsolete except in striae 1; interstriae 1 slightly elevated, bearing a median row of very fine, very slightly flattened setae, a few exceedingly fine granules present; area of interstriae

2 flat, not impressed; area of interstriae 3 not elevated, marked by a row of very obscure granules and a row of narrowly flattened setae; striae 1 narrowly, deeply impressed.

**Female.** Unknown.

**Distribution.** This species is known from Saint Lucia.

**Etymology.** This species is named for M. L. Gimmel, the collector of the holotype.

**Comments.** Males of this species can be readily recognized by the dull, minutely reticulate surface of the elytra in which striae punctures and therefore the striae, cannot be detected, by the similarly sculptured posterior half of the pronotal disc in which the usual punctures cannot be seen, by the unmodified elytral declivity in which striae 1 is deeply impressed. The female is unknown.

***Pityophthorus gratus* Bright, sp. nov.**

Figure 294.

**Type Material.** HOLOTYPE (male) labeled: “DOMINICAN REPUBLIC: La Altagracia, Parque del Este, Caseta Guaraguao, 4.4 km SE Bayahibe, 18–19–59N, 68–48–42W, 3 m, 26–27 May 2004” / “C. Young, J. Rawlins, J. Fetzner, C. Nunez, semihumid forest near sea, limestone, uv light, Sample 51114” / “Carnegie Museum Specimen Number CMNH-350.110” / “HOLOTYPE *Pityophthorus gratus* D. E. Bright 2016” (CMNH).

**Description (Male).** Length 1.4 mm, 2.5 times longer than wide; dark brown. Frons convex, very weakly flattened from epistoma to upper eye level, with a smooth, glabrous, weakly elevated, narrow elevation extending from upper level of eyes to vertex; surface shining, with numerous, scattered, fine punctures and scattered, inconspicuous, short setae. Antennal club oval, 1.4 times longer than wide; sutures 1 and 2 straight, transverse, distinctly chitinized at lateral margins; segment 1 very slightly narrower than 2. Pronotum as long as wide, widest anterior to base; sides distinctly arcuate on basal half, constricted just before anterior margin; anterior margin broadly rounded, bearing a row of six low, basally contiguous serrations; anterior slope bearing three concentric rows of basally contiguous, small asperities, an inconspicuous fourth row present at summit; summit not elevated; posterior area not impressed behind summit, surface smooth, shining, with close, almost touching, impressed punctures, interpuncture space with numerous, minute punctures. Elytra 1.5 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae not impressed, punctured in very slightly irregular rows, punctures distinct, small, separated in a row by a distance greater than their diameters; discal interstriae shining, impunctate, 2.0 times wider than striae, glabrous on anterior two-thirds. Declivity convex; interstriae 1 impressed below general surface, with a row of several, minute granules; interstriae 2 not impressed, as wide as discal width, glabrous; remaining interstriae not impressed, each with a median row of long, erect setae, these distinctly longer in interstitial width and with a few minute granules.

**Female.** Unknown.

**Distribution.** This species is known from the type locality in the Dominican Republic.

**Etymology.** From *gratus*, Latin for agreeable or pleasing, referring to the appearance of the adult.

**Comments.** Males of this species may be distinguished by the convex elytral declivity with interstriae 1 impressed below the general elytral surface, by the arcuate lateral margins of the pronotum which are constricted just before the anterior margin and by the three distinct concentric rows of asperities on the anterior slope of the pronotum. The female is unknown.

***Pityophthorus grenadacolens* Bright, sp. nov.**

Figure 319.

**Type Material. HOLOTYPE** (male) labeled: "WEST INDIES: GRENADA, St. Andrew, Mirabeau Agric. Lab., 10.IX.1990, J. Telesford, Light trap" / "HOLOTYPE *Pityophthorus grenadacolens* D. E. Bright 2016" (FSCA).

**Description (Male).** Length 1.3 mm, 2.7 times longer than wide; light brown. Frons convex, very slightly transversely impressed just above epistoma, with a weakly elevated, longitudinal carina extending from epistoma to level of upper eye level surface above impression dull, minutely reticulate, with scattered small punctures, these mostly separated by a distance equal to or slightly greater than their diameters; vestiture inconspicuous, consisting of very short, fine setae. Antennal club 1.1 times longer than wide, widest at segment 3; first two segments occupy one-half of club length; sutures 1 and 2 weakly arcuate, both chitinized at lateral margins. Pronotum 1.1 times longer than wide, widest on basal half; sides moderately arcuate, anterior margin broadly rounded, with eight distinct serrations; anterior slope with numerous, scattered asperities, these basally separated and not arranged in any order, may appear as concentric rows near summit; summit not elevated; posterior area dull, densely minutely reticulate, with obscure, small punctures. Elytra 1.7 times longer than wide; sides parallel on basal three-fourths; apex broadly rounded; discal striae punctured in even rows, punctures in striae 1 half as large as those in remaining striae, each with a very short seta shorter than diameter of puncture; discal interstriae mostly wider than striae, surface brightly shining. Declivity convex, striae 1 slightly impressed, punctures obsolete; interstriae 1 slightly elevated, bearing a median row of widely separated, very small granules and short, fine setae; interstriae 2 very slightly impressed, slightly wider than discal width, flat, glabrous; interstriae 3 not elevated, bearing a row of small granules, these equal in size to those in interstriae 1 and a row of erect, fine setae; remaining interstriae with a few fine setae; punctures in striae 2 obscure, much smaller than those on disc.

**Female.** Unknown.

**Distribution.** This species is known from Grenada.

**Etymology.** From "Grenada", the type locality and *colo*, Latin for inhabit, or dwell in.

**Comments.** The male of this species may be recognized by the presence of very small granules on declivital interstriae 1 and 3, by the very weakly impressed and glabrous declivital interstriae 2 which is slightly wider than its discal width and by moderately shining, densely minutely reticulate posterior portion of the pronotum which bears a few obscure, widely separated punctures. The antennal club is typical *Pityophthorus*-type, with two slightly arcuate sutures chitinized at the lateral margins. One antenna has been removed from the holotype and mounted in Canada balsam on the point with the holotype.

***Pityophthorus illuminus* Bright, sp. nov.**

Figure 295.

**Type Material. HOLOTYPE** (male) labeled: "DOMINICAN REPUBLIC: La Vega, 10 km NE Jarabacoa, mv and blacklight, 4 June 1994, R. Turnbow" / "HOLOTYPE *Pityophthorus illuminus* D. E. Bright 2016" (RHTC [FSCA]).

**Description (Male).** Length 2.8 mm, 2.8 times longer than wide; black. Frons mostly concealed, evidently flattened from eye to eye, weakly impressed near eye and with a median, longitudinal, broad elevation; surface shining. Mandibles large, heavily chitinized, cutting edge truncate. Antennal club oval, 1.2 times longer than wide; sutures 1 and 2 weakly arcuate, weakly chitinized at lateral margins, suture 3 strongly arcuate; segment 1 as wide as 2. Pronotum as long as wide, widest at middle; sides strongly arcuate on basal half, constricted in front of middle; anterior margin broadly rounded, bearing 10 low, obscure, elevated serrations; anterior slope bearing numerous, low, wide asperities; summit not distinctly elevated; posterior area not impressed behind summit, surface smooth, shining, with large, very close, impressed punctures, interpuncture space very narrow, with scattered, minute punctures. Elytra 1.5 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; disc densely, randomly punctured, punctures distinct, large, deeply impressed, mostly separated by a distance much

less than their diameter; interpuncture space shining, with minute punctures, glabrous. Declivity almost evenly convex; interstriae 1 slightly elevated, with a few extremely minute granules; interstriae 2 as wide as or narrower than its discal width, slightly impressed, unarmed; interstriae 3 weakly elevated, as high as interstriae 1, sometimes with a few granules; remaining surface randomly punctured with scattered minute granules, glabrous; striae 1, 2 and 3 weakly impressed, slightly more obvious.

**Female.** Unknown.

**Distribution.** This species is known from the type locality in the Dominican Republic.

**Etymology.** From *illumino*, Latin for light or embellish.

**Comments.** Adults of this species may be very similar to those of *P. pulicarius* but differ, in the males, by the much larger size, by the stouter body and by the more deeply, densely randomly punctured elytral surface, by the nearly convex elytral declivity with interstriae 2 very slightly impressed and by the larger, closer and deeply impressed punctures of the posterior half of the pronotum.

***Pityophthorus insulatus* Bright, sp. nov.**

Figure 296.

**Type Material.** **HOLOTYPE** (female) labeled: “**VIRGIN IS.: St John**, Lameshure Bay, VIERS, 21–28 July 1994, M. S. Becker, ultraviolet light” / “**HOLOTYPE** *Pityophthorus insulatus* D. E. Bright 2016” (WIBF [CNCI]). **PARATYPES** (4): 1 labeled with same data as holotype (CNCI); 1 labeled: “**VIRGIN IS.: Saint Thomas**, Est. Nazareth, 40 ft., 27 JULY-19 OCT 1994, M. A. and L. L. Ivie, flight intr. trap #9” (WIBF); 1 labeled: “**VIRGIN IS.: Saint Croix**, Est. Fountain, 350 ft., 20 APR-19 May 1993, J. Keularts, flight intercept trap #15” (WIBF); 1 labeled: “**VIRGIN IS.: Saint Croix**, Est. William, Frederiksted, 5–12 FEB 1981, D. Hutchins” (CNCI).

**Description (Female).** Length 1.1–1.2 mm, 2.8 times longer than wide; light brown. Frons evenly convex; surface shining, finely obscurely punctured and bearing scattered, short setae. Antennal club oval, 1.3 times longer than wide; sutures 1 and 2 very weakly arcuate, 3 more strongly arcuate; segment 1 wide as 2. Pronotum 1.2 times longer than wide, widest at middle; anterior margin broadly rounded, bearing an acutely elevated, undulating ridge, discrete serrations not evident; anterior slope with asperities arranged in four distinct, arcuate rows; summit not elevated; posterior area moderately shining, with obscure, small, weakly impressed punctures, the punctures close, surface between punctures with numerous, scattered, fine punctures. Elytra 1.8 times longer than wide; discal striae punctured in even regular rows, punctures large, deeply impressed and close; discal interstriae as wide as striae, surface shining, with fine, impressed punctures, each interstriae (except 2) with a median row of long setae on apical third. Declivity steep, moderately deeply bisulcate; interstriae 1 elevated, bearing a median row of long setae, granules absent; interstriae 2 moderately impressed, flat, distinctly wider apically than discal width; interstriae 3 moderately elevated, as high as 1, bearing a median row of setae as long as those in interstriae 1, granules extremely minute; punctures in striae 1 and 2 small, moderately impressed.

**Male.** Similar to female except frons flatter and elytral setae slightly longer.

**Distribution.** This species is known from the type localities in Saint Thomas, Saint John and Saint Croix in the U. S. Virgin Islands.

**Etymology.** From *insula*, Latin for “of islands”, referring to geographic distribution of this species.

**Comments.** Adults of this small species superficially resemble those of *P. antillicus* but are much smaller. Other distinct differences in the frons and pronotum are mentioned in the above description.

***Pityophthorus inusitatus* Bright, sp. nov.**

Figure 297.

**Type Material.** **HOLOTYPE** (male) labeled: “WEST INDIES, **MARTINIQUE**: 4 km SW Le Marin, Morne Aca, 260 m, N14°27.8, W60°53.9” / “Humid forest hilltop clearing FIT, S. Peck, 13–28.VI.2012” / “**HOLOTYPE** *Pityophthorus inusitatus* D. E. Bright 2016” (SBPC [CNCI]). **PARATYPES** (5): 3 labeled with same data as holotype (SBPC, CNCI); 2 labeled: “W. I.: **MARTINIQUE**: 4 km N Ste-Luce, Foret Montravail, 300 m, N14°29.9, W60°55.7” / “Humid forest FIT, 11–28.VII.2012, S. Peck, collr.” (SBPC, CNCI).

**Description (Male?).** Length 1.6 mm, 3.0 times longer than wide; light brown. Frons shallowly transversely impressed from epistoma to just below upper level of eye, convex above; surface of transverse impression moderately shining, micro-rugulose, surface above impressed area moderately shining, densely granulate, with four larger granules on upper margin of impressed area; vestiture inconspicuous except along epistomal margin. Antennal club flattened, oval, 1.3 times longer than wide, solid, without visible sutures, with small clumps of setae on margin, evidently at lateral margins of obsolete sutures. Pronotum 1.3 times longer than wide, widest at level of summit; lateral margin with a fine, acute line extending from basal angles to near anterior margin; summit very weakly elevated, surface posterior to summit not impressed; anterior margin broadly rounded, with a row of 14 distinct serrations, these decreasing in size from middle toward lateral margin; anterior one-quarter with numerous, small, closely and randomly placed asperities; posterior three-fourths smooth, shining, densely micro-reticulate, with obscure, very fine, almost imperceptible punctures; median line obscure. Elytra 1.7 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae punctured in regular, not impressed rows, punctures obscure, not impressed, each with a minute seta shorter than diameter of puncture; discal interstriae obscurely micro-reticulate, as wide as striae. Declivity convex, surface slightly darker than discal color, more distinctly reticulate; interstriae 1 and 3 slightly elevated, each with a median row of acute granules and long setae; interstriae 2 weakly impressed, as wide as discal width, devoid of granules or setae; remaining interstriae with fine granules and long setae; each striae puncture with a short, very narrow scale, these longer than setae in discal punctures and much shorter than interstitial setae.

**Female.** Not recognized in the specimens examined.

**Distribution.** This species is known from the type locality in Martinique.

**Etymology.** From *inusitatus*, Latin for unusual or strange.

**Comments.** Adults of this species may be most easily recognized by the solid antennal club which is devoid of obvious sutures (sutures may be very weakly visible), by the presence of 14 serrations on the anterior margin of the pronotum and by the elytral declivity which bears distinct granules in interstriae 1 and 3 and a row of long setae.

The sex of the specimens in the type series was not determined but they are probably all males.

### ***Pityophthorus laevis* (Schedl), New Combination**

Figure 298.

*Neopityophthorus laevis* Schedl 1938: 181.

*Araptus laevis*: Wood and Bright 1992: 958.

*Pityophthoroides pudens* Blackman 1942: 199. **New Synonymy.**

*Pityophthorus pudens*: Wood and Bright 1992: 1023; Bright 2014: 253.

*Pityophthorus formosus* Bright 1972: 88; Wood and Bright 1992: 999. **New Synonymy.**

**Description (Female).** Length 1.3 mm, 2.9 times longer than wide; dark reddish-brown, light brown on legs and antenna. Frons convex, very weakly flattened on lower portion above epistoma; surface dull, minutely punctured, with a distinct, slightly elevated, longitudinal, median elevation extending from upper eye level to vertex. Antennal club oval, 1.5 times longer than wide; sutures 1 and 2 without chitinized septa, marked by rows of setae and notches on sides. Pronotum 1.1 times longer than wide; sides subparallel on basal half, faintly constricted in front of middle; anterior margin broadly rounded,

finely serrate; anterior slope bearing numerous, small asperities scattered over surface in no apparent order, surface between asperities dull, minutely reticulate; posterior area smooth, slightly shining, punctures very fine, shallow, sparse; vestiture consisting of short, sparse, inconspicuous, hairlike setae. Elytra 1.7 times longer than wide; sides parallel on basal two-thirds, broadly rounded behind; surface smooth, moderately shining, distinct striae rows not discernable, scattered punctures very faint, minute. Declivity convex; suture very feebly elevated; striae and striae punctures not discernable; vestiture consisting of rows of short, stout, spatulate setae in interstriae 1, 2 and 3.

**Male.** Length 1.2 mm, 3.0 times longer than wide; reddish-brown. Frons flattened to slightly concave below an arcuate, semicircular carina, convex above; space between eye and carina equal to the width at apex of tibia; a small, subtuberculate, median elevation is located at center of transverse carina; flattened area shining, finely punctured and rugose, sparsely pubescent. Antennal club as in female. Pronotum as long as wide; sides subparallel on basal half, faintly constricted in front of middle; anterior margin broadly rounded, finely serrate; anterior slope bearing numerous, small asperities scattered over surface in no apparent order; posterior area smooth, shining, punctures very fine, shallow, sparse; vestiture consisting of short, sparse, inconspicuous, hairlike setae. Elytra 1.7 times longer than wide; sides parallel on basal two-thirds, broadly rounded behind; striae not impressed, punctures very faint, minute, nearly invisible; interstriae smooth, shining, impunctate. Declivity convex; suture very feebly elevated; punctures of striae 1 and 2 slightly more conspicuous than those on elytral disc; interstriae smooth, unmodified; vestiture consisting of interstitial rows of short, stout, spatulate setae.

**Distribution.** This species occurs generally throughout the West Indies.

**Specimens examined.** **CUBA:** Cayamas, 2.24 or 14.2 / E. A. Schwarz (15-USNM, CNCI); Holguin Playa Corinthia just E. Bahia Leyisa, 07 July 90, M. A. Ivie, beating mangroves (1-WIBF). **DOMINICA:** Springfield Estate, Mt. Joy, 31.V-16.VI.2004, N15°20.841', W61°22.000' / ridge-top forest flight intercept trap, S. and J. Peck (1-SBPC). **DOMINICAN REPUBLIC:** La Vega Province, 10 km NE Jarabacoa Raquet Club, 550 m, flight intercept trap, 20.VII-4.VIII.95, mixed forest, S. and J. Peck, 95-37 (1-SBPC); Colonia, 1000 m, March 27, 1972, J. and S. Klapperich (5-NHMB). **GUADELOUPE:** Basse-Terre: Rivière Sens, Sentier Houëlement, N15°58.93, W61°42.62 / humid forest flight intercept trap, 19-31.V.2012, S. Peck (1-SPBC). **JAMAICA:** Trelawny Parish, Barbecue Bottom, 10 August 1966, H. F. Howden (5-CNCI). **MONTSERRAT:** Cassava Ghaut, Beattie House, 16°45.91'N, 62°12.95'W, 21-30 June 2002, 632 ft., M. A. Ivie, uv light (1-WIBF). **PUERTO RICO:** Guaynabo, VIII.2000, ex: light trap, J. Torres (6-CNCI), same locality, IX.2000, ex: light trap, J. Torres (3-CNCI), same locality, VII.1-30.1999, light trap, J. Torres (1-CNCI). **SAINT LUCIA:** Mont LaCombe, 13.9209°N, 60.9592°W, 271 m, 23-28 June 2009, Malaise, C. A. Maier and M. L. Gimmel (2-WIBF, CNCI). **VIRGIN ISLANDS (U. S.): Saint Thomas,** Est. Lilliendahl, 02 Aug 1980 / ex flight intercept trap / Etelman Observatory, Elv. 1200 ft (1-WIBF).

**Comments.** Adults of this species may be recognized by their small size, by the evenly convex elytral declivity which bears a median row of spatulate to narrowly flattened scales in each interstriae, by the dull, reticulate elytra on which the striae punctures are not discernable or are extremely faint and not impressed, by the dull, reticulate, impunctate posterior surface of the pronotum and by the weakly elevated, longitudinal line on the upper portion of the female frons.

*Neopityophthorus laevis* Schedl was described from a syntypic series of two specimens. The "holotype" designation of Schedl (1979) is therefore invalid. I have designated the specimen labeled as holotype as the lectotype of this species. It bears the labels "Col. Vitrac, Guadeloupe" / "37" / "Etang Zonabi" (? , illegible) / "Neopityophthorus laevis Schedl" (red label) / "Pityophthorus laevis n. sp. Type Eggers det." (Eggers hand, on typical Eggers label) / "HOLOTYPE Neopityophthorus laevis Schedl (red-bordered label) and my lectotype label. The types are in the NHMW. The lectotype is in poor condition and lacks one antenna, most legs and the remaining antenna is not readily visible and is covered by glue. It lacks the declivital interstitial rows of setae (rubbed?) that are typical for this species, but matches the holotype and paratypes of *P. pudens* in all other respects, especially the dull, reticulate, impunctate elytral disc and the posterior half of the pronotum and the small size.

The holotype and several paratypes of *P. formosus* were compared to the holotype and two paratypes of *P. pudens* and appear to be the same species.

### *Pityophthorus liquidambarus* Blackman

Figure 299.



**Figures 292–300.** Declivities of *Pityophthorus* spp. **292)** *P. foleyi*. **293)** *P. gimmeli*. **294)** *P. gratus*. **295)** *P. illuminus*. **296)** *P. insulatus*. **297)** *P. inusitatus*. **298)** *P. laevis*. **299)** *P. liquidambaris*. **300)** *P. masneri*.

*Pityophthorus liquidambarus* Blackman 1921: 14; Wood and Bright 1992: 1009; Bright and Skidmore 2002: 153; Bright 2014: 251.

**Description (Female).** Length 1.3–1.6 mm, 2.8 times longer than wide; light brown. Frons weakly concave from epistoma to well above eyes; surface brightly shining, with a few faint punctures, glabrous on lower half, with a dense brush of setae on upper periphery extending from eye to eye. Antennal club elongate-oval, 1.5 times longer than wide, widest through segment 3; suture 1 weakly arcuate, 2 more strongly arcuate, chitinized at lateral margins. Pronotum 1.2 times longer than wide, widest just behind middle; sides weakly arcuate on basal two-thirds; anterior margin with a row of ten low serrations; anterior one-third of disc convex, with three or four even, concentric rows of low asperities; summit

elevated; posterior area behind summit smooth, moderately shining, with scattered, large, deeply impressed punctures, interpuncture surface dull to shining with scattered, impressed, minute punctures. Elytra 1.7 times longer than wide; sides parallel on basal three-quarters, apex broadly rounded; discal striae not impressed, shining, glabrous, distinctly punctured in regular rows, punctures large, deeply impressed; discal interstriae narrower than striae. Declivity convex; interstriae 1 impressed below level of interstriae 3, bearing three or four minute granules; interstriae 2 impressed, equal in width to discal width, without setae; interstriae 3 higher than 1, rounded along summit, with a few very minute granules; punctures in striae 1 and 2 distinct.

**Male.** Similar in size and proportions to female. Frons flattened to slightly concave from epistoma to upper level of eyes; surface closely punctured. Pronotum and elytra as in female except asperities or granules slightly larger.

**Distribution.** This species occurs throughout the eastern and southeastern United States from Washington D. C to Florida, west to Arkansas; recorded herein from Haiti.

**Specimens examined. HAITI:** Port-au-Prince, 25–26.V.1984, M. C. Thomas (1–FSCA).

**Comments.** Females of this species may be easily recognized by the weakly concave, brightly shining and mostly glabrous female frons which bears a conspicuous brush of setae on the upper margins of the frons. Other distinctive characters are mentioned in the above description.

The host for this species in the United States is *Liquidambar styracifera* (Bright 1981b).

One specimen of this species has been seen from the West Indies. The above description is prepared from that specimen, supplemented by characters taken from the description in Bright (1981b).

***Pityophthorus masneri* Bright, sp. nov.**

Figure 300.

**Type Material. HOLOTYPE** (male) labeled: “DOMINICAN REPUBLIC: Pedernales, 3.3 km NE Los Arroyos, 18–15N, 71–45W, 1450 m” / “16–18 July 1990, L. Masner, J. Rawlins, C. Young, wet montane forest, sweep samples” / “HOLOTYPE *Pityophthorus masneri* D. E. Bright 2016” (CMNH).

**Description (Male).** Length 1.4 mm, 3.0 times longer than wide; light brown. Frons evenly convex with a very faintly elevated, small, smooth space at upper eye level; surface smooth, shining, faintly punctured, with short, scattered setae. Antennal club oval, 1.5 times longer than wide; sutures 1 and 2 transverse, straight, with a clump of distinct setae at lateral margins. Pronotum 1.2 times longer than wide, widest on basal half; sides parallel on basal half; anterior margin narrowly rounded, bearing a row of 10 elevated serrations; anterior slope bearing three acutely elevated, even, concentric rows of basally contiguous asperities, these equal in size to those on anterior margin, a vague fourth row is discernable at summit; summit not elevated; posterior area not impressed behind summit, surface shining, with close, deeply impressed punctures, interpuncture space shining, very narrow. Elytra 1.6 times longer than wide; sides parallel on basal two-thirds, apex narrowly rounded, slightly extended at apex of interstriae 1; discal striae not impressed, punctured in even rows, punctures distinct, moderately large, close; discal interstriae moderately shining, micro-rugulose, 1.0–1.5 times wider than striae, glabrous except near declivity where all interstriae bear a median row of long setae. Declivity bisulcate; interstriae 2 impressed below level of 1 and 3, slightly wider than on disc, without setae; interstriae 1 and 3 equal in height, each with a row of minute granules; punctures in striae 1 and 2 slightly impressed, obsolete; all interstriae except 2 bearing a median row of long setae.

**Female.** Unknown.

**Distribution.** This species is known from the Dominican Republic.

**Etymology.** This species is named for Lubomir Masner (at the CNCI) in recognition of his collecting activities over many years.

**Comments.** The male of this species may be recognized by the presence of three distinct concentric rows of asperities on the anterior slope of the pronotum, by the evenly convex frons, by the very slightly explanate apex of interstriae 1 and by the bisulcate elytral declivity with minute granules on interstriae 1 and 3. The female is unknown.

***Pityophthorus minutissimus* Bright, sp. nov.**

Figure 301.

**Type Material.** HOLOTYPE (male?) labeled: "WEST INDIES: SAINT LUCIA, Praslin, 50 m, 25.VII.2007" / "lowland, woodland ravine FIT, S. and J. Peck" / "HOLOTYPE *Pityophthorus minutissimus* D. E. Bright 2016" (SBPC [CNCI]). PARATYPE (1) labeled: "SABA: NETH. ANTL., Near Booby Hill, 401 m, 17.62318°N, 63.22675°W, 13 MAR-01 APR 2008, D. Sikes, J. Slowik, FIT pitfall" (WIBF).

**Description (Male?).** Length 0.9 mm, 2.7 times longer than wide; light brown. Frons flattened, very slightly concave on a semicircular area extending from epistomal margin to above upper eye level and laterally occupying 80% of distance between eyes; surface shining, slightly roughened, punctate, bearing numerous, fine, recumbent setae; epistomal margin straight, fringed by a row of moderately long setae, these equal in length to setae on frons. Antennal club as long as wide, sutures 1 and 2 obscure, transverse. Pronotum 1.2 times longer than wide, widest at middle; sides weakly arcuate; anterior margin broadly rounded, bearing a row of 10 moderately large serrations, these decreasing in size laterally; anterior slope with three distinct, concentric rows of basally contiguous asperities; summit very weakly elevated, appearing not elevated when viewed laterally; posterior portion shining, with large, deep punctures, these separated by a distance equal to less than their diameters, interpuncture space smooth, with scattered, faint, impressed, minute punctures. Elytra 1.9 times longer than wide; sides parallel on basal four-fifths, apex broadly rounded; discal striae not impressed, punctured in regular rows, punctures large, separated in row by a distance less than their diameters, each puncture with a very small seta shorter than diameter of puncture; discal interstriae narrower than striae, smooth, glabrous except on posterior third where interstriae 1, 3, 5 and 7 bear a median row of longer, erect, very narrow scales. Declivity steep, bisulcate; interstriae 2 wider than on disc, impressed below level of interstriae 1 and 3, smooth, glabrous; interstriae 1 and 3 each bearing a row of three or four moderately large granules and a row of erect, narrow scales.

**Female (?).** Length 1.0 mm, 2.9 times longer than wide. Very similar to male except frons evenly convex, shining, bearing very short, scattered setae and declivital scales more slender and hairlike.

**Distribution.** Known from the type localities on Saint Lucia and Saba.

**Etymology.** From *minutulus*, Latin for very small, referring to the small size of the adults.

**Comments.** The adults of this species are the smallest specimens of *Pityophthorus* so far seen from the West Indies. In addition to the small size, adults may be distinguished by the arcuate rows of asperities on the anterior slope of the pronotum, by the large serrations on the anterior margin of the pronotum, by moderately deeply bisulcate elytral declivity, with interstriae 1 and 3 bearing a row of moderately large granules and by the large strial punctures.

The description above was prepared with 200× magnification. With lesser magnification the characters may not be as evident.

***Pityophthorus nesocolus* Bright, sp. nov.**

Figure 302.

**Type Material.** HOLOTYPE (male?) labeled: "PUERTO RICO: Guilarte For. Res., Hwy. 131 & 158, July 23, 1979, G. B. Marshall" / "HOLOTYPE *Pityophthorus nesocolus* D. E. Bright 2016" (CNCI).

**Description (Male?).** Length 1.3 mm, 2.6 times longer than wide; black. Frons very weakly, transversely impressed from epistomal margin to halfway to level of upper margin of eye, convex from impres-

sion to vertex; surface brightly shining, with scattered, fine punctures and with a weakly elevated, impunctate, longitudinal smooth line above transverse impression; vestiture absent. Antennal club 1.2 times longer than wide, widest through segment 2; sutures 1 and 2 transverse, straight, slightly chitinized at lateral portion; segments 1 and 2 occupy two-thirds of total club length. Pronotum very slightly longer than wide, widest at basal angles; sides weakly arcuate; anterior margin narrowly rounded, with an acutely elevated margin with six obscure, weakly elevated serrations; summit not elevated; anterior slope bearing numerous, small, slightly elevated asperities scattered in no apparent order; vestiture consisting of inconspicuous, fine, short setae. Elytra 1.6 times longer than wide; side parallel on basal three-fourths; apex broadly rounded; discal surface shining, striae not impressed, punctures small, weakly impressed, somewhat obscure; discal interstriae narrower than striae, glabrous. Declivity convex, striae 1 distinctly impressed; interstriae 1 slightly elevated, with a median row of narrow, slightly spatulate setae, these slightly longer than interstitial width; interstriae 2 glabrous, not impressed; interstriae 3 convex, not elevated, bearing a median row of narrow scales similar to those on interstriae 1; all remaining interstriae bearing a median row of similar scales; striae (except 1) not evident.

**Female.** Unknown.

**Distribution.** This species is known from the type locality in Puerto Rico.

**Etymology.** From *necos*, Greek for island and *colo*, Latin for inhabiting or living in, referring to the island habitat of this species.

**Comment.** Adults of this species may be recognized by the absence of an elevated summit on the pronotum, by the presence of obscure serrations on the anterior margin of the pronotum, by the presence of scattered small, slightly elevated asperities on the pronotum and by the characters of the frons and the declivity as outlined in the above description.

In several respects, especially those of the pronotum, this species could be placed in *Araptus*. However, the antennal club bears two, straight, transverse sutures which are chitinized at the lateral margins; an essential character of *Pityophthorus*, according to the definition of the genus as I outlined it above. An antenna has been removed from the type specimen and mounted in Canada balsam on the point with the type.

***Pityophthorus pauculus* Bright, sp. nov.**

Figure 303.

**Type Material.** HOLOTYPE (female?) labeled: "MONTSERRAT: Cassava Ghaut, 16°45.91', 62°12.95'W, 24 JULY 2005, 632 ft., I. A. Foley colr." / "HOLOTYPE *Pityophthorus pauculus* D. E. Bright 2016" (WIBF [CNCI]). PARATYPES (4): 2 labeled with same data as holotype (WIBF, CNCI); 1 labeled: "MONTSERRAT: Fogerty Ghaut, fogging canopy, 16°46.24'N, 62°12.53'W, 1224 ft., 06 DEC 2002, J. Daley and L. Aymer" (WIBF); 1 labeled: "WEST INDIES: SAINT LUCIA, Mon Repos, 6.5 km W Fox Grove Inn, 10–28.VI.2007, submontane forest FIT, 300 m, S. and J. Peck" (SBPC).

**Description (Female?).** Length 1.1–1.3 mm, 2.7 times longer than wide; dark reddish-brown. Frons convex, very narrowly, weakly impressed above epistoma; surface shining, distinctly punctured, vestiture absent or inconspicuous. Antennal club round, as long as wide, widest through segment 3; sutures 1 and 2 weakly arcuate; segments 1 and 2 occupy more than half of total club length. Pronotum 1.1 times longer than wide, widest at base; sides weakly arcuate; anterior margin narrowly rounded, with a row of obscure serrations; summit not elevated; asperities on anterior slope small, weakly elevated, arranged in slightly arcuate rows especially on lateral and median portion, these extending well beyond middle on lateral and discal areas; posterior portion of disc with obscure punctures; surface between asperities and punctures minutely reticulate; vestiture consisting of slightly widely separated, erect, narrowly spatulate scales. Elytra 1.6 times longer than wide; sides weakly arcuate, apex broadly rounded; discal surface shining, irregularly, randomly punctured, striae not readily discernable, not impressed; discal interstriae not discernable, marked by even rows of erect, narrowly spatulate scales, these extending in row from base to apex and as long as distance between rows. Declivity evenly convex, striae 1 weakly impressed;

interstrial scales similar to those on disc except slightly longer, especially on lateral portions; interstriae bearing a median row of minute granules.

**Male.** Not recognized in present material. A specimen suspected of being a male is very similar to female as described above except frons seems to bear a very weak, longitudinal carina.

**Distribution.** This species is known from the type localities in Montserrat and Saint Lucia.

**Etymology.** From *pauculus*, Latin for little, referring to the small size of the adults.

**Comments.** The female of this species may be recognized by their small size, by the dense pronotal asperities that extend well beyond the middle of the discal area and, most easily, by the rows of erect, spatulate scales that extend from the elytral base to the apex.

### ***Pityophthorus pecki* Atkinson**

*Pityophthorus pecki* Atkinson 1993b:613; Bright and Skidmore 1997: 212.

This species was described from Big Pine Key in Florida (Atkinson 1993b) but was not recognized among the many specimens of *Pityophthorus* seen during preparation of this monograph. It is mentioned here because it should occur in the Greater Antilles. Adults may be recognized by the presence of concentric rows of asperities on the pronotum, by the weakly, but distinctly, elevated pronotal summit and by the obscure striae punctures on the declivity.

This species is not included in Appendix 2 nor is it included in counts of the West Indian fauna.

### ***Pityophthorus pinavorus* Bright**

Figure 304.

*Pityophthorus pinavorus* Bright 1985: 182; Wood and Bright 1992: 1019; Bright and Skidmore 1997: 210; Bright and Skidmore 2002: 154.

**Description (Female).** Length 1.2–1.4 mm, 2.5 times longer than wide. Frons flattened to very weakly convex, usually with a very weak, median epistomal elevation and an extremely faint, longitudinal carina or carina absent; surface shining, very finely punctured except along longitudinal median line; vestiture sparse, inconspicuous, consisting of short, yellowish setae, these denser along epistoma. Antennal club oval, 1.1 times longer than wide, widest through segments 2 and 3; sutures 1 and 2 weakly arcuate; segments 1 and 2 occupy more than half of total club length. Pronotum 1.1 times longer than wide, widest at a point just behind dorsal summit; sides weakly arcuate, anterior constriction weak; asperities on anterior slope small, randomly placed; summit prominent; posterior portion of disc with large, distinct punctures, these separated by a distance less than their own diameters; surface between punctures minutely reticulate. Elytra 1.7 times longer than wide; apex very narrowly rounded; discal striae punctured in regular rows, punctures large, equal in size and depth as those on posterior portion of pronotum; discal interstriae narrower than striae, smooth. Declivity evenly convex; interstriae 1 weakly elevated, devoid of granules; interstriae 2 as wide as on disc, not impressed; interstriae 3 as on disc, with a few, very fine, obscure punctures; striae 1 very weakly, narrowly impressed, punctures very slightly smaller than those on disc; striae 2 and 3 and those remaining not impressed, with punctures similar to those on disc.

**Male.** Very similar to female except longitudinal carina on frons slightly more evident, but still extremely weak.

**Distribution.** This species is known from southern Florida and the Dominican Republic.

**Specimens examined. DOMINICAN REPUBLIC:** Jarabacoa, VI.15.1946, *Pinus occidentalis*, D. DeLeon (4–CNCI, USNM); La Vega, Constanza, 17 July 1996, R. Turnbow (6–RHTC, CNCI); La Vega, 1.4–2.6 km E Manabao, 5 June 1994, R. Turnbow (6–RHTC, CNCI); La Vega, 1 km S Manabao, 15 July 1996 (1–RHTC).

**Comments.** Adults of this species may be most easily recognized by the very convex elytral declivity on which the striae are punctured in regular rows, by the distinctly punctured discal striae, by the impunctate elytral interstriae and by the narrowly rounded elytral apex. Other characters are mentioned in the above description and in the key to species.

***Pityophthorus procerus* Bright, sp. nov.**

Figure 305.

**Type Material.** HOLOTYPE (female) labeled: "CUBA: Oriente Province, Mtns. NE of Baracoa, 02 JUN 1959, M. W. Sanderson" / "HOLOTYPE *Pityophthorus procerus* D. E. Bright 2016" (WIBF [CNCI]).

**Description (Female).** Length 1.8 mm, 3.3 times longer than wide. Frons flattened from epistoma to well above upper eye level and from eye to eye; surface completely concealed by a dense, round brush of long incurved setae. Antennal club oval, 1.3 times longer than wide, widest through segments 2 and 3; sutures 1 and 2 weakly arcuate; segments 1 and 2 occupy more than half of total club length. Pronotum 1.2 times longer than wide, widest on posterior half; sides subparallel on basal half, anterior constriction weak; anterior margin broadly rounded, with 10 very weak, basally contiguous serrations; asperities on anterior slope small, randomly placed; elevated summit not present; posterior portion of disc with large, distinct punctures, these separated by a distance usually more than their diameters, surface between punctures dull, minutely punctate. Elytra 2.0 times longer than wide; sides parallel on basal four-fifths, rounded to distinctly acuminate apex; discal striae punctured in regular rows, punctures large, close, equal in size and depth as those on posterior portion of pronotum; discal interstriae much narrower than striae, smooth. Declivity steep, deeply bisulcate; interstriae 1 distinctly impressed below level of interstriae 3, bearing a row of small, rounded granules; interstriae 2 wider than on disc, impressed; interstriae 3 strongly elevated, rounded, with a row of acute granules, these slightly larger than those on interstriae 1; striae 1 distinctly, narrowly impressed, punctures very slightly larger than those on disc; striae 2 impressed, with punctures similar to those on disc.

**Male.** Unknown.

**Distribution.** This species is known from the type locality in Cuba.

**Etymology.** From *procerus*, Latin for slender, referring to the slender body shape of the adults.

**Comments.** Females of this species may be recognized by their elongate shape, by the dense brush of long, incurved setae on the female frons and by the declivital characters described above.

***Pityophthorus pulicarius* Zimmermann**

Figure 306.

*Crypturgus pulicarius* Zimmermann, 1868: 144.

*Pityophthorus pulicarius*: Wood and Bright 1992: 1024; Bright and Skidmore 1997: 211; Bright and Skidmore 2002: 155.

*Pityophthorus cubensis* Schedl 1972: 65 (Cuba).

**Description (Male).** Length 1.3–2.0 mm, 2.6 times longer than wide; dark reddish-brown. Frons evenly, broadly convex, very slightly flattened to weakly concave on an oval, median area; surface moderately punctured; epistoma narrow, deeply impressed except for a small, median portion densely fringed with stout, yellowish setae. Antennal club nearly circular, as long as wide; sutures 1 and 2 weakly arcuate, weakly chitinized at lateral margins, suture 3 strongly arcuate; segment 1 as wide as 2. Pronotum 1.2 times as long as wide, widest at middle; sides strongly arcuate on basal half, constricted in front of middle; anterior margin broadly rounded, bearing 10 serrations; anterior slope bearing numerous, low, wide asperities; summit not distinctly elevated; posterior area not impressed behind summit, surface smooth, shining, with large, very close, impressed punctures, interpuncture space very narrow, dull, densely and minutely reticulate, with scattered, minute punctures. Elytra 1.4 times longer than wide;

sides parallel on basal two-thirds, apex broadly rounded; disc densely, randomly punctured, punctures distinct, large, deeply impressed, mostly separated by a distance much less than their diameter; interpuncture space shining, with minute punctures, glabrous. Declivity almost evenly convex; interstriae 1 slightly elevated, with a few, extremely minute granules; interstriae 2 as wide as or narrower than its discal width, slightly impressed, unarmed; interstriae 3 weakly elevated, as high as interstriae 1, sometimes with a few granules; remaining surface randomly punctured with scattered, minute granules, glabrous; striae 1, 2 and 3 weakly impressed.

**Female.** Similar in size and proportions to male. Frons weakly, transversely impressed on area below upper level of eyes; surface shining, deeply, densely punctured, with moderately dense setae, those on periphery slightly longer and incurved.

**Distribution.** This species is widespread in the eastern United States. In the West Indies it is known from Cuba and the Bahamas.

**Specimens examined.** BAHAMAS: Andros Island, Mennonite's Farm, 30.VII.1987, J. Browne, crop black-light (1-CNCI); Money Point, 25 July 2006, R. Turnbow (1-RHTC). CUBA: Oriente Province, Mtns. NE of Baracoa, 02 June 1959, M. W. Sanderson (2-WIBF); Oriente, Moa, 4 June 1959, M. W. Sanderson (1-WIBF).

**Comments.** Adults of this species may be distinguished by the larger, stouter body, by the densely and randomly punctured elytral surface, by the nearly convex elytral declivity with the interstriae 2 very slightly impressed and by the large, close, deeply impressed punctures of the posterior half of the pronotum. Adults of this species are very similar to those of *P. illuminus* but are smaller and less deeply punctured on the pronotum and elytra.

Vázquez et al. (2003) record *Pinus* as a host in Cuba.

### *Pityophthorus punctatus* Eggers

*Pityophthorus punctatus* Eggers 1940: 130; Wood and Bright 1992: 1025.

**Description (Female).** Length 1.6 mm, 3.2 times longer than wide; light yellowish-brown. Frons broadly flattened on a large semicircular area extending from epistomal margin to well above upper eye level and laterally almost from eye to eye; surface shining, densely minutely punctured, bearing a brush of short setae, those on periphery slightly longer and incurved. Antennal club missing. Pronotum 1.2 times longer than wide, widest on basal half; sides parallel on basal half; apex broadly rounded, with a row of 12 low, basally contiguous serrations, these decreasing in size laterally; anterior slope with two, irregular, broken concentric rows of asperities, additional asperities scattered around summit area; summit not elevated; posterior area moderately shining, punctures deeply impressed, separated by a distance less than their diameters, interpuncture space with minute, impressed punctures. Elytra 2.0 times longer than wide; sides parallel on basal two-thirds, apex narrowly rounded; discal striae not impressed, punctured in regular rows, punctures deeply impressed, large, separated by a distance less than their diameters; discal interstriae weakly shining, weakly convex, as wide as striae, glabrous. Declivity convex; interstriae 1 slightly elevated, bearing a median row of five erect, very fine setae; interstriae 2 slightly wider than discal width, flat; other interstriae not elevated; striae 1 slightly impressed, punctures obscure; striae 2 and remaining striae deeply punctured; interstriae 3 not elevated, bearing a median row of four or five very fine setae, granules absent.

**Male.** Unknown.

**Distribution.** This species is known from Guadeloupe.

**Specimen examined.** GUADELOUPE: 3-Riv. (1-NHMW).

**Comments.** Females of this species may be most easily distinguished by the brush of short setae on the frons, by the slender, elongate body shape and by the unmodified elytral declivity with distinctly punctured striae 2.

The above description was prepared from the holotype, the only known specimen of this species. This specimen was compared with all specimens of *Pityophthorus* from the West Indies and no specimen was

found that even remotely resembled this species except for *P. foleyi* described from Saint Lucia. The major difference was in the size and body shape between the two species, as outlined in the above key.

***Pityophthorus regularis* Blackman**

Figure 307.

*Pityophthorus regularis* Blackman 1942: 206; Wood and Bright 1992: 1026.

**Description (Female).** Length 1.2–1.3 mm, 2.5 times longer than wide; yellowish-brown (immature). Frons flattened to weakly concave from epistoma to upper level of eyes; surface shining, faintly punctured, with sparse, inconspicuous, short setae; epistoma with a faint, median granule. Antennal club 1.2 times longer than wide, widest through segment 3; sutures 1 and 2 obscure, nearly straight, chitinized near lateral margin; segment 1 narrower than 2 and 3. Pronotum as long as wide, widest near base; sides straight to weakly arcuate, weakly constricted just behind anterior margin; anterior margin narrowly rounded, with a row of 15 distinct serrations; anterior slope bearing four distinct, concentric rows of basally contiguous asperities; summit weakly elevated; posterior area shining, smooth, faintly reticulate, punctures of moderate size, deeply impressed, separated by their own diameter; median line impunctate, very faintly elevated. Elytra 1.5–1.6 times longer than wide; sides parallel on anterior two-thirds, broadly rounded behind; discal striae (except 1) not impressed, punctured in regular rows, these punctures large, deep; discal interstriae as wide as striae, smooth, shining, impunctate except near declivity. Declivity convex; interstriae 1 elevated, with a few very fine granules; striae 1 deeply impressed, other striae as on disc except punctures smaller; each interstriae bearing a median row of narrow, flattened to subspatulate setae, these shorter than interstitial width, hairlike on sides.

**Male.** Similar in size and proportions to female. Frons convex, transversely impressed above epistoma; epistomal granule obscure to absent.

**Distribution.** This species is known from Cuba.

**Specimens examined. CUBA:** Cayamas, E. A. Schwarz (41–USNM, CNCI).

**Comments.** Adults of this species may be distinguished by the presence of several concentric rows of asperities on the pronotum, by the evenly convex elytral declivity which may be weakly impressed and by the small size.

Vázquez et al. (2003) record *Mangifera* as a host in Cuba.

***Pityophthorus rogueti* Bright, sp. nov.**

Figure 308.

**Type Material. HOLOTYPE** (sex?) labeled: “**MARTINIQUE:** Trinité, Croisée Soldat, 18–21.VII.1997, leg D. Roguet” / “**HOLOTYPE** *Pityophthorus rogueti* D. E. Bright 2016” (CNCI). **PARATYPE** (1): labeled with same data as holotype (CNCI).

**Description (sex?).** Length 1.1 mm, 2.2 times longer than wide; yellowish-brown. Frons concealed, not visible. Pronotum as long as wide; sides broadly, evenly rounded, very weakly constricted before broadly rounded anterior margin; anterior margin bearing six very obscure, very weakly elevated serrations; anterior slope with three concentric rows of very small asperities and a fourth obscure row at summit; summit weakly elevated; posterior surface brightly shining, with moderately large, weakly impressed, obscure punctures, these usually separated by a distance equal to their diameters. Elytra 1.4 times longer than wide; sides parallel on anterior two-thirds, apex broadly rounded; discal surface weakly shining, weakly reticulate, striae punctures obscure, weakly impressed, placed in weakly discernable rows; discal interstriae not discernable. Declivity evenly convex, not impressed; striae 1 very narrowly, weakly impressed, other striae obscure, marked by rows of very short setae; interstriae 1 slightly elevated, with a median row of short, narrowly flattened scales, these shorter than striae width, interstriae 2 not bearing a median row of setae, remaining interstriae each bearing a row of slightly longer setae.



**Figures 301–309.** Declivities of *Pityophthorus* spp. **301)** *P. minutissimus*. **302)** *P. nesocolus*. **303)** *P. pauculus*. **304)** *P. pinavorus*. **305)** *P. procerus*. **306)** *P. pulicarius*. **307)** *P. regularis*. **308)** *P. rogueti*. **309)** *P. senticosus*.

**Distribution.** This species is known from the type locality in Martinique.

**Etymology.** This species is named for D. Roguet, the collector of the holotype.

**Comments.** The frons of both specimens in the type series is concealed so the sex cannot be determined. Adults of this species may be most readily recognized by their small size, by the obscurely punctured discal surface of the elytra, by the evenly convex elytral declivity which bears very short, inconspicuous setae in the interstriae and by the presence of three arcuate, concentric rows of setae on the anterior portion of the pronotum.

***Pityophthorus senticosus* Bright, sp. nov.**

Figure 309.

**Type Material. HOLOTYPE** (female) labeled: “DOMINICAN REPUBLIC: La Altagracia, Parque del Este, 2.9 km SW Boca de Yuma, 18–21–51N, 68–37–05W, 11 m., 28 May 2004” / “J. Rawlins, C. Young, C. Nunez, J. Fetzner, semi humid dry forest, limestone, uv light, Sample 51114” / “HOLOTYPE *Pityophthorus senticosus* D. E. Bright 2016” (CMNH).

**Description (Female).** Length 1.6 mm, 2.7 times longer than wide; light yellowish-brown. Frons broadly, shallowly concave from epistoma to well above upper eye level, more deeply, arcuately impressed on lower portion below upper eye level; surface smooth, shining, densely micro-rugose, glabrous except along epistomal margin; epistomal margin deeply emarginate. Mandibles with a small, thorn-like process arising on cutting edge and extending upwards to level of epistomal margin. Antennal club oval, 1.4 times longer than wide; suture 1 very slightly arcuate, weakly chitinized at lateral margins; suture 2 slightly more strongly arcuate, slightly chitinized; segment 1 as wide as 2. Pronotum 1.15 times longer than wide, widest at middle; anterior margin broadly rounded, bearing an acutely elevated, undulating margin, serrations absent; anterior slope bearing five acutely elevated, even, concentric rows of very small, basally contiguous asperities, a sixth row is vaguely visible at summit; summit not elevated; posterior area not impressed behind summit, surface weakly shining, with close, indistinct, shallowly impressed punctures, interpuncture space micro-rugose and with minute punctures. Elytra 2.0 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae not impressed, punctured in regular rows, punctures distinct, moderately large; discal interstriae moderately shining, micro-rugulose, 1.5 times wider than striae, glabrous except near declivity where interstriae 1, 3, 5, 7 each bear several long setae. Declivity convex, striae 1 and interstriae 1 slightly impressed; interstriae 2 slightly impressed below level of interstriae 3, as wide as discal width, unarmed; interstriae 1 unarmed; interstriae 3 bearing three or four minute granules; striae punctures obscure; interstriae 1, 3, 5 and 7 each bear several long setae.

**Male.** Unknown.

**Distribution.** This species is known from the type locality in the Dominican Republic.

**Etymology.** From *senticosus*, Latin for thorn, referring to the short process on the female mandible.

**Comments.** Females of this species are similar to those of *P. abnormalis* but differ by the much shorter process on the mandible. Males are not known.

***Pityophthorus sepositus* Bright, sp. nov.**

Figure 310.

**Type Material. HOLOTYPE** (female) labeled: “CAYMAN ISLANDS, Grand Cayman, 19.III.1989: Fitzgerald, blacklight trap” / “HOLOTYPE *Pityophthorus sepositus* D. E. Bright 2016” (FSCA). One male, possibly of this species but not designated as an allotype, is labeled: “CAYMAN: Grand Cayman, Georgetown, 20 May 2009, R. Turnbow” (RHTC).

**Description (Female).** Length 1.4 mm, 2.9 times longer than wide; yellowish-brown. Frons very weakly convex from epistoma to above upper level of eyes; surface densely, weakly punctured, with a sparse brush of elongate setae, these slightly longer on periphery; epistomal margin transverse, bordered by a row of short setae. Antennal club as long as wide, with three slightly arcuate sutures. Pronotum 1.1 times longer than wide, widest on basal third; sides weakly arcuate; anterior margin narrowly rounded, bearing an acute weakly serrate ridge; anterior slope bearing four concentric rows of basally contiguous, very small asperities; summit not elevated; posterior area not impressed behind summit, surface moderately shining, with small, widely separated punctures, interpuncture space minutely reticulate. Elytra 1.6 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae not impressed, punctured in regular rows, punctures distinct, moderately large, close; discal interstriae brightly shining, smooth, less than half as wide as striae, glabrous except near declivity. Declivity con-

vex, with interstriae 2 weakly impressed below level of interstriae 1 and 3, as wide as discal width, unarmed; interstriae 1 slightly elevated, unarmed; interstriae 3 not elevated, rounded on summit, unarmed; punctures in striae 1 indistinct, those in 2 distinct, deeply impressed; interstriae 1, 3, 5, and 9 bearing a median row of several long setae, interstriae 2 with one or two long setae at apex.

**Male.** A male, possibly of this species, is similar to the female but is 2.4 times longer than wide. Frons convex, with an obscure, longitudinal, weakly elevated, smooth line extending from mid-point to vertex; surface brightly shining, with distinct punctures; vestiture absent. Pronotum as in female except concentric rows of asperities irregular, somewhat broken. Elytra as in female except declivity more strongly convex,

**Distribution.** This species is known from the Cayman Islands.

**Etymology.** From *sepositus*, Latin for special or distinct.

**Comments.** The female of this species may be distinguished by the sparse brush of long setae on the frons, by the minutely reticulate posterior half of the pronotum contrasting the brightly shining elytral interstriae, by the lack of an elevated pronotal summit and by the unarmed elytral declivity on which interstriae 2 is weakly impressed. The suspected male may be distinguished by the characters mentioned above.

***Pityophthorus subconcentralis* Schedl**

Figure 311.

*Pityophthorus subconcentralis* Schedl 1938: 183; Wood and Bright 1992: 1029.

*Pityophthorus hispaniolus* Bright 1985: 181; Wood and Bright 1992: 1002; Bright 2014: 250. **New Synonymy**

**Description (Female).** Length 1.5–1.8 mm, 2.9 times longer than wide. Frons convex, very slightly flattened, distinctly, strongly punctured with a weak longitudinal carina extending from epistoma to vertex, interrupted across flattened, punctured lower surface at level just below upper level of eyes; surface shining with small, shallow punctures on lower half, impunctate above upper level of eyes, vertex dull, minutely reticulate. Antennal club large, 1.4 times longer than wide, widest through segment 2; suture 1 weakly arcuate, 2 nearly straight. Pronotum slightly more than 1.1 times longer than wide, widest of posterior half; asperities on anterior slope arranged into three irregular concentric rows, these more evenly concentric on lateral areas; posterior area of disc smooth, dull, punctures of moderate size, moderately impressed; surface between punctures densely, minutely reticulate. Elytra 1.8 times longer than wide, apex broadly rounded; discal striae punctured in regular rows, punctures shallowly impressed; discal interstriae 1.5–2.0 times wider than striae, smooth, shining, with scattered, minute punctures and lines. Declivity steep; interstriae 1 and 3 elevated, 3 higher on upper portions than 1, both with a row of very fine granules; interstriae 2 as wide as discal width, slightly impressed, flat, surface with numerous, fine, minute punctures; striae 1 and 2 distinct, with faint punctures.

**Male.** Unknown.

**Distribution.** This species is known in the West Indies from the Dominican Republic, Guadeloupe, Haiti, Jamaica, Puerto Rico and Montserrat and a questionable record from the Bahamas.

**Specimens examined.** **BAHAMAS:** Andros Island, 3.5 mi. E. Three Creeks Point, Briar coppice, 26.VII.1987, J. Browne, Savannah, tidal flat and salt marshland, sweeping, 87–128J (1–FSCA) [questionable id.]. **DOMINICAN REPUBLIC:** Colonia, 1000m, 21.1 and 30.1 / Rep. Dominic., 1972, J. and S. Klapperich (4–CNCI); Province Barahona, nr. Filipinas, Larimar Mine, 26.VI–7.VII.1992, Woodruff and Skelley, flight trap (1–RHTC). **GADELOUPE:** Sentier des Contrebandiers, Dupertail, aux battages, 20.VII.1000, D. and J-P. Roguet (1–CNCI); Trois Rivières, Dufau (2–USNM). **HAITI:** Dept. Sud-Oueste, Massif de La Selle, Morne d’Enfer, 1850 m, 15.V.1984, M. C. Thomas (1–RHTC); Fermathe, Baptist Haiti Mission, 18°27’N, 72°18’W / 4.IV.1985, pheromone trap, *Pinus occidentalis*, R. Billings, collr. (1–CNCI). **JAMAICA:** Saint Andrew Parish, Irish Town, VIII.28.1966, Howden and Becker (1–CNCI). **MONTSERRAT:** Dump to Jack Boy Hill, 22 June 2003, M. A. Ivie and K. A. Marske (1–WIBF).

**PUERTO RICO:** Guaynabo, VIII.2000, light trap, J. Torres (6–CNCI), same locality, IX.2000, light trap, J. Torres (3–CNCI); Vega Baja, multi-funnel trap (2) and *Artocarpus altilis* (1) (3–PRDA).

**Comments.** Adults may be most easily distinguished by the presence of concentric rows of asperities on the anterior slope of the pronotum and by the distinctly sulcate elytral declivity with interstriae 2 equal to slightly wider than the discal width, by the usually distinct punctures on striae 1 and 2 on the declivity and by bearing fine granules and long setae on all interstriae except 2. The Puerto Rico specimens differ slightly from the lectotype by having a slightly more deeply sulcate declivity but the other characters are almost identical. One specimen from Andros Island in the Bahamas is smaller than the other specimens examined but appears to be the same species.

The lectotype of *P. subconcentralis* from Guadeloupe, in the USNM, was examined and compared to the type series of *P. hispaniolus*. Slight differences can be detected, but I believe only one species is represented.

One specimen from Puerto Rico bears the host data *Artocarpus altilis*. It is not known if this is an actual host record or an accidental record; the specimen was collected at a sawmill.

***Pityophthorus subtilus* Bright, sp. nov.**

Figure 312.

**Type Material.** **HOLOTYPE** (male) labeled: “DOMINICAN REPUBLIC: La Altagracia, Parque del Este, Caseta Guaraquao, 4.4 km SE Bayahibe, 18–19–59N, 68–48–42W, 3 m., 26–27 May 2004” / “C. Young, J. Rawlins, J. Fetzner, C. Nunez, semiarid forest near sea, limestone, uv light, Sample 51114” / “Carnegie Museum Specimen Number CMNH-350.283” / “HOLOTYPE *Pityophthorus subtilus* D. E. Bright 2016” (CMNH). **ALLOTYPE** labeled with same data as holotype plus my allotype label (CMNH). **PARATYPES** (5): all labeled with same data as holotype except for specimen number (CMNH, CNCI).

**Description (Male).** Length 1.6–1.7 mm, 2.5 times longer than wide; light yellowish-brown. Frons weakly flattened from epistoma to slightly above upper eye level; surface shining, with close, large, weakly impressed punctures and inconspicuous, short setae; lateral portion of epistoma with a pair of small, shining elevations, these directed mesad and slightly notched at apex, epistomal margin between swellings straight, with dense, moderately long setae. Antennal club oval, 1.5 times longer than wide; sutures 1 and 2 inconspicuous, transverse, weakly chitinized at lateral margins; segment 1 as wide as 2. Pronotum very slightly longer than wide, widest at middle; sides parallel on basal half; anterior margin broadly rounded, bearing a row of ten or more distinct serrations; anterior slope bearing three concentric rows of basally contiguous, large asperities, a smaller fourth row present at summit; summit not elevated, but may appear to be very slightly elevated in some light; posterior area not impressed behind summit, surface smooth, shining, with large, close, impressed punctures, interpuncture space with dense minute punctures. Elytra 1.5 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae not impressed, punctured in irregular rows, punctures distinct, moderately large; discal interstriae brightly shining, smooth, as wide as striae, glabrous except near declivity. Declivity bisulcate; interstriae 2 moderately impressed below level of interstriae 1 and 3, as wide as discal width, unarmed except for a few small granules at base; interstriae 1 slightly elevated, bearing three or four small, acute granules; interstriae 3 distinctly elevated, rounded on summit, bearing seven larger, rounded granules; punctures in striae 1 and 2 distinct; all interstriae (except 2) bearing a median row of several long setae.

**Female.** Similar in size and proportions to male. Frons flattened, bearing a small, dense brush of numerous, long, erect setae, these all equal or nearly equal in length, not longer or incurved on periphery, brush occupying median area from epistoma to upper eye level and laterally 60% of distance between eyes; lateral portions of epistoma unmodified.

**Distribution.** This species is known from the type localities in the Dominican Republic.

**Etymology.** From *subtilis*, Latin for thin, slender, referring to the body proportions of the adult.

**Comments.** Males of this species may be distinguished by the presence of a unique pair of low swellings on the lateral areas of the epistoma. These small swellings are weakly elevated, with the apices directed mesad. Females have a small brush of densely placed, erect setae in the middle of the lower portion of the frons. The elytral declivity of both sexes is bisulcate, with the impressed interstriae 2 as wide as the discal width and with interstriae 3 higher than interstriae 1 and bearing five to seven small, distinct granules.

***Pityophthorus suspiciosus* Bright**

Figure 314.

*Pityophthorus suspiciosus* Bright 1972: 89; Wood and Bright 1992: 1030.

**Description (Female).** Length 2.3 mm, 2.8 times longer than wide; dark reddish-brown. Frons concave on a semicircular area, deeply punctured except for a small, impunctate, median space, punctures of moderate size, close, separated by a distance less than their diameters; surface densely pubescent in concave area, setae on median portion golden yellow, as long as antennal funicle, longer on periphery; vertex minutely reticulate, faintly punctured. Antennal club 1.7 times longer than wide; sutures 1 and 2 slightly arcuate, chitinized. Pronotum as long as wide; sides arcuate, constricted slightly in front of middle; anterior margin narrowly rounded, weakly serrate; anterior slope bearing numerous, low, blunt asperities, these arranged in no special order; posterior and lateral portions smooth, moderately shining, punctures deep, separated by a distance equal to their own diameters; median line impunctate, weakly elevated; vestiture consisting of sparse, short, hairlike setae, longer on margins. Elytra 1.7 times longer than wide; sides parallel on basal three-fourths, broadly rounded behind; discal striae weakly impressed, striae 1 more so, punctured in regular rows, punctures the size of pronotal punctures, moderately deeply impressed; interstriae convex, smooth, shining, impunctate except near declivity. Declivity steep; interstriae 2 widened, sulcate; interstriae 3 higher than suture, interstriae 1 and 3 bearing a median row of distinct granules; remaining interstriae rugose; vestiture consisting of a row of long, hairlike setae in each interstriae.

**Male.** Similar to female except frons very slightly concave, vestiture much sparser, declivital granules somewhat larger and setae somewhat longer.

**Distribution.** This species is known from Jamaica.

**Specimens examined. JAMAICA:** Blue Mountain Peak, 7400', 27–28 July 1966, Howden and Becker (6–CNCI).

**Comments.** This species is known from high elevations on Jamaica. Adults may be recognized by the moderately to deeply impressed declivity which bears a distinct row of granules and long setae in interstriae 1 and 3, by the dull, reticulate surface of the posterior portion of the pronotum which bears very minute punctures and by the distribution.

***Pityophthorus tomentosus* Bright, sp. nov.**

Figure 316.

**Type Material. HOLOTYPE** (male) labeled: “SAINT LUCIA: Barre de L’Isle, 13.9368°N, 60.9593°W, 340 m, 25–28 June 2009, uv light, E. A. Ivie” / “HOLOTYPE *Pityophthorus tomentosus* D. E. Bright 2016” (WIBF [CNCI]). **PARATYPE** (1) labeled: “WEST INDIES: SAINT LUCIA, Quart. Dauphin, Chassin water supply source, 31.V.1987, blacklight trap, R. E. Woodruff” (CNCI).

**Description (Male).** Length 1.4 mm, 2.8 times longer than wide; reddish-brown. Frons convex, weakly, transversely impressed above epistoma to level of upper margin of eyes; a weak granule at upper level of impression; surface shining, granulate-punctate. Antennal club oval, 1.1 times longer than wide; sutures 1 and 2 obscure, with setae at lateral margins. Pronotum 1.2 times longer than wide, widest at base; sides weakly arcuate, slightly constricted before anterior margin; anterior margin broadly rounded, with a row of 18 distinct serrations; anterior slope with asperities scattered in no apparent order; summit not

evident; posterior surface moderately shining, densely minutely-reticulate, with faint, obscure, very shallow punctures, the lateral margin of these punctures weakly elevated. Elytra 1.6 times longer than wide; discal striae not impressed, punctured in regular rows, punctures moderately large, shallowly impressed; discal interstriae as wide as striae, impunctate, glabrous. Declivity evenly convex; interstriae 1 and 3 very weakly elevated, each with a median row of large, acute granules; interstriae 2 almost imperceptibly impressed, without granules or setae; remaining interstriae each with a distinct granule; all interstriae (except 2) with a row of erect, narrowly flattened to spatulate scales, these slightly longer on interstriae 1 and 3; entire declivital surface dull, rugose, minutely reticulate; striae punctures obscure.

**Female.** Unknown.

**Distribution.** This species is known from the type localities in Saint Lucia.

**Etymology.** From *tomentum*, Latin for woolly hairs, referring to the long flattened scales on the declivital interstriae.

**Comments.** Males of this species may be readily recognized by the presence of large, distinct granules on the declivital interstriae (except 2), by the presence of long, narrowly flattened to spatulate scales on the declivital interstriae (also except 2) and by the unusually large number of serrations on the anterior margin of the pronotum. The female is unknown.

***Pityophthorus torresi* Bright, sp. nov.**

Figure 313.

**Type Material.** **HOLOTYPE** (female) labeled: "PUERTO RICO, Guaynabo, 23-VIII-95, J. Torres," / "HOLOTYPE *Pityophthorus torresi* D. E. Bright 2016" (CNCI). **PARATYPE** (1): labeled with same data as holotype except date is 15.XII.95 and with an additional label "ex. light trap" (CNCI).

**Description (Female).** Length 1.7 mm, 2.6 times longer than wide; light yellowish-brown. Frons weakly, transversely impressed from epistoma to upper level of eyes; surface brightly shining, with small, slightly impressed punctures and very short, scattered, inconspicuous setae. Antennal club nearly circular, 1.1 times longer than wide; suture 1 moderately arcuate, chitinized, suture 2 inconspicuous, marked by an arcuate row of setae. Pronotum 1.1 times longer than wide, widest at level of summit; sides weakly arcuate; anterior margin broadly rounded, acutely elevated, very weakly notched in median area, true serrations absent; anterior slope with numerous, scattered, isolated, small asperities, these randomly arranged; summit very weakly elevated; posterior half dull, densely reticulate, with scattered minute asperities and small granules, these especially noticeable in area immediately posterior to summit, punctures absent. Elytra 1.6 times longer than wide; sides parallel on basal three-fourths, apex broadly rounded; discal striae not impressed, punctured in even regular rows, punctures small, shallowly impressed; discal interstriae wider than striae, surface moderately shining, weakly reticulate, glabrous. Declivity convex, weakly bisulcate, shining; interstriae 1 weakly elevated, bearing a median row of minute granules and long setae, these as long as interstitial width; interstriae 2 weakly impressed below level of 1 and 3, flat, very slightly wider than discal width, glabrous; interstriae 3 weakly elevated, as high as 1, bearing a median row of minute granules and setae similar in length to those in interstriae 1; interstriae 3–9 each bearing a median row of similar granules and setae; puncture in striae 1 and 2 obsolete.

**Male.** Unknown.

**Distribution.** This species is known from Puerto Rico.

**Etymology.** This species is named for Juan Torres, the collector of the type series.

**Comments.** Females of this species may be most easily distinguished by the absence of distinct punctures on the posterior half of the pronotum, by the presence of one distinct, arcuate suture on the

antennal club, by the presence of numerous, scattered asperities on the anterior slope of the pronotum and by numerous characters on the pronotum and elytral declivity enumerated in the above description.

***Pityophthorus vulgaris* Bright, sp. nov.**

Figure 317.

**Type Material. HOLOTYPE** (male) labeled: "WEST INDIES: SAINT LUCIA, Barre d'Isle Trail, 13°93'N, 60°96'W, 3.VII.2009, 340 m" / "in broken branch, D. E. Bright collr." / "HOLOTYPE *Pityophthorus vulgaris* D. E. Bright 2016" (CNCI).

**Description (Male).** Length 1.2 mm, 2.5 times longer than wide; dark reddish-brown. Frons weakly concave from epistomal margin to upper level of eyes; surface shining, obscurely punctured, bearing scattered, short setae. Antennal club as long as wide; sutures 1 and 2 straight, transverse, segments 1 and 2 occupying basal half of club. Pronotum 1.1 times longer than wide, widest just behind middle; sides weakly arcuate, apex narrowly rounded; anterior margin bearing a row of eight moderate-sized serrations, these decreasing in length laterally; asperities on anterior slope dense, scattered in no order, space between asperities shining, with minute punctures; summit not elevated; posterior portion moderately shining, punctures of moderate size, impressed, separated by a distance greater than their diameters; interpuncture space with minute punctures. Elytra 1.5 times longer than wide; sides parallel on basal two-thirds, apex broadly rounded; discal striae not impressed, distinctly punctured in even rows, punctures of moderate size, deeply impressed, separated in row by a distance equal to their diameters; discal interstriae smooth, brightly shining, glabrous. Declivity convex; striae 1 weakly impressed, remaining striae not impressed, with distinct punctures, these slightly smaller and shallower than on disc; interstriae 1 slightly elevated, with a few, fine, erect setae on lower portion, granules absent; remaining interstriae not impressed, each with a few, fine erect setae, granules absent.

**Female.** Unknown.

**Distribution.** This species is known from the type locality in Saint Lucia.

**Etymology.** From *vulgaris*, Latin for ordinary or commonplace.

**Comments.** The male of this species is recognized by the scattered, densely placed asperities on the anterior slope of the pronotum, by the evenly convex dorsal surface of the pronotum (an elevated summit is not present), by the strongly punctured, shining elytra and by the unmodified elytral declivity. The antennal club of this species is small, with two, straight, transverse sutures. The female is unknown.

***Pityophthorus youngi* Bright, sp. nov.**

Figure 318.

**Type Material. HOLOTYPE** (female) labeled: "DOMINICAN REPUBLIC: Pedernales, 26 km N Cabo Rojo, 18.06N, 71.38W, 730 m, 20 July 1990, C. W. Young, J. E. Rawlins, S. Thompson" / "Carnegie Museum Specimen Number CMNH-350.280" / "HOLOTYPE *Pityophthorus youngi* D. E. Bright 2016" (CMNH). **ALLOTYPE** labeled: "DOMINICAN REPUBLIC: Pedernales, 25 km N Cabo Rojo, mv and blacklight, 10 July 1996, R. Turnbow" / "ALLOTYPE *Pityophthorus youngi* D. E. Bright 2016" (CNCI).

**Description (Female).** Length 2.0–2.1 mm, 3.0 times longer than wide; light brown. Frons broadly, evenly convex; surface shining, closely, deeply punctured, with widely scattered, short setae; epistomal margin straight, with a small, median tuft of setae. Antennal club oval, 1.4 times longer than wide; suture 1 distinct, weakly arcuate, suture 2 slightly more strongly arcuate, suture 3 strongly arcuate; segment 1 narrower than 2. Pronotum 1.2 times longer than wide, widest at middle; anterior margin broadly rounded, bearing an acutely elevated row of 12 basally contiguous serrations; anterior slope with asperities arranged in four distinct, arcuate rows with smaller, scattered asperities around summit; summit elevated; posterior area slightly impressed behind middle, surface brightly shining, with large, deeply impressed, widely separated punctures, surface between punctures with numerous, scattered,

fine, minute punctures. Elytra 1.9 times longer than wide; discal striae punctured in even regular rows, punctures large, deeply impressed and close; discal interstriae as wide as striae, surface shining, with fine, very small impressed punctures; apical third of each interstriae (except 2) with a median row of long setae. Declivity steep, moderately deeply bisulcate; interstriae 1 elevated, bearing a median row of long setae and distinct granules; interstriae 2 moderately impressed, flat, as wide as discal width, with a median row of very small granules and setae at base, remainder devoid of setae or granules; interstriae 3 moderately elevated, as high as 1, bearing a median row of setae as long as those in interstriae 1 and a row of large, distinct granules; remaining interstriae bearing long setae similar to those in 1 or 3 and scattered, fine granules; punctures in striae 1 and 2 moderately large, moderately impressed.

**Male.** Similar in size to female. Frons flattened, slightly impressed from epistoma to upper level of eyes; granules on declivital interstriae 3 smaller.

**Distribution.** This species is known from the type localities in the Dominican Republic.

**Etymology.** This species is named for C. W. Young, one of the collectors of the holotype.

**Comments.** Adult of this species are similar to those of *P. centralis* but differ by their larger size and by the larger antennal club.

### Genus *Pseudopityophthorus* Swaine

*Pseudopityophthorus* Swaine 1918: 93; Wood and Bright 1992: 971; Bright and Skidmore 1997: 203; Bright and Skidmore 2002: 418 (checklist); Bright 2014: 257.

Members of this genus may be distinguished from similar West Indian genera of the Pityophthorini by the transverse or weakly arcuate and aseptate antennal sutures, by the obsolete elytral striae and by sparse vestiture which consists of small, narrow scales present in the declivital interstriae.

Unfortunately, this genus is represented by only one specimen from Guadeloupe. That specimen is clearly a member of *Pseudopityophthorus* and is distinctive in appearance and should be readily recognized in the future. In order that this genus can be included in future catalogs and biodiversity studies, I have named and illustrated the one species.

This genus contains 27 species (Bright and Skidmore 2002), most of which occur in North America; one occurs in Colombia and another occurs in Tibet.

All species occur in branches or boles of various broadleaf trees, most commonly in *Quercus* spp.

### *Pseudopityophthorus absitus* Bright, sp. nov.

Figures 320, 477, 547.

**Type Material.** HOLOTYPE (sex?) labeled: "GUADELOUPE: Basse Terre, Sofaïa la Bouclet, Tête Allègre, 26 MAY 2012, R. Turnbow" / "HOLOTYPE *Pseudopityophthorus absitus* D. E. Bright 2016" (RHTC [FSCA]). PARATYPE (1) labeled: DOMINICA: Springfield Est., 15.3465N, 61.3691W, 29 MAY 2011, 350 m, L. L. Ivie colr., Malaise trap" (WIBF).

**Description (sex?).** Length 1.3 mm, 3.1 times longer than wide; black. Frons of holotype concealed, only lower quarter visible; visible surface shining, reticulate between faint punctures; epistomal margin straight, transverse, with a minute granule at middle. Antennal club as long as wide, widest at middle; sutures 1 and 2 faintly visible, slightly arcuate, not chitinized at lateral margins, but marked with a few, short setae. Pronotum 1.2 times longer than wide, widest at middle; sides weakly arcuate; anterior margin broadly rounded, bearing 14 serrations, these gradually increasing in size toward middle; anterior slope bearing numerous, randomly scattered, shining asperities, these equal in size to median serrations on anterior margin, bearing long setae between asperities, surface between asperities moderately shining and minutely reticulate; summit slightly elevated; posterior portion moderately shining, surface densely reticulate with very obscure punctures and minute granules. Elytra 1.6 times longer than wide;



**Figures 310–318.** Declivities of *Pityophthorus* spp. **310)** *P. sepositus*. **311)** *P. subconcentralis*. **312)** *P. subtilus*. **313)** *P. torresi*. **314)** *P. suspeciosus*. **315)** *P. eggersianus*. **316)** *P. tomentosus*. **317)** *P. vulgaris*. **318)** *P. youngi*.

sides parallel on basal two-thirds, gradually converging to narrowly rounded apex; disc moderately shining, very densely, minutely punctured over surface, striae marked by rows of very slightly larger punctures and rows of minute setae. Declivity occupying posterior one-third of elytra, convex, bearing a conspicuous row of erect, slightly spatulate, narrow scales, these as long as distance between rows and distance between scales in row.

**Distribution.** This species is known from the type localities in Dominica and Guadeloupe.

**Etymology.** From *absitus*, Latin for remote or distant, referring to the known, remote distribution of the species.

**Comments.** The adult of this species may be readily distinguished from other West Indies species in the Pityophthorini by the comments given above and in the key to genera. The adult slightly resembles the adult of *P. asperulus* (LeConte) from the eastern United States but is easily distinguished by the row of narrow, spatulate scales in each declivital interstriae (adults of *P. asperulus* have hairlike bristles in the declivital interstriae) and by numerous other characteristics. The anterior two-thirds of the elytra of adult *P. absitus* is nearly glabrous, having rows of exceedingly short setae in what is evidently the striae. The entire surface is densely, minutely punctured with no indication of striae or interstriae, except for the minute setae mentioned above. The elytral declivity bears rows of distinct, erect, narrow scales in each interstriae.

### Genus *Sphenoceros* Schedl, Resurrected Name

*Sphenoceros* Schedl 1939b: 565; Wood and Bright 1992: 952 (as a synonym of *Araptus*).

*Sphenoceros* was placed in synonymy under *Araptus* Eichhoff by Wood (1973), with the comment that “antennal and other features used to characterize ... *Sphenoceros* Schedl are not consistent and intergrade with those of various species groups of *Araptus*”. *Araptus*, as now constituted, is definitely polyphyletic with several generic-level species groups. *Sphenoceros* is one of those species groups that is distinctly different from other such groups. The type species of *Sphenoceros* is *S. limax* Schedl and is distinctly congeneric with the species described below. Presumably *Araptus aztecus* (Wood) should be transferred to *Sphenoceros*; these three species form a distinctive species group that is distinct from other species groups of *Araptus*.

### *Sphenoceros antillicus* Bright, sp. nov.

Figures 410, 478, 548.

**Type Material. HOLOTYPE** (female) labeled: “WEST INDIES: SAINT LUCIA: La Porte Forest Trail, 13°84'N 60°97'W, 4.VII.2009, 272 m” / “In dead fallen tree, D. E. Bright, collr.” / “HOLOTYPE *Sphenoceros antillicus* D. E. Bright 2016” (CNCI). **PARATYPES** (8): 4 labeled: “SAINT LUCIA: Chassin trap site, 94 m, 13.9965°N, 60.9195°W, 04–08 June 2009, uv light, C.A. Maier and R. C. Winton” (WIBF, CNCI); 1 labeled with same data except date is “31 May-04 June 2009” and collectors are R. C. Winton and C. A. Maier (WIBF); 1 labeled: “SAINT LUCIA: Barre de L'Isle, 13°93682'N, 60°95936'W, 340 m, 08 JULY 2009, M. L. Gimmel, at uv light” (WIBF); 1 labeled: “St. Lucia, Piton Flores, 532 m, 13°96'N, 60°94'W, 6.VII.2009” / “In fresh broken branch, D. E. Bright, collr.” (CNCI); 1 labeled: “MARTINIQUE: Trinité, Croisée Soldat, 18–21.VII.1997, leg. D. Roguet” (CNCI).

One male, not designated as a paratype but presumably of this species, is labeled: “DOMINICAN REPUBLIC: Pedernales, 26 km N Cabo Rojo, 725 m, 18–06N, 71–38W” / “21 October 1991, C. Young, S. Thompson, R. Davidson, J. Rawlins, wet deciduous forest” / “Carnegie Museum Specimen Number CMNH-350.173” (CMNH).

**Description (Female).** Length 1.8–2.0 mm, 2.4 times longer than wide; light brown. Frons flattened to weakly concave, with a smooth, dull, glabrous, shagreened, circular area between eyes and bearing two weakly elevated elevations at lateral margins above antennal insertions. Epistomal margin deeply emarginate, with a fringe of long, sparse setae; epistomal region above mandibles shining, finely punctured. Mandibles prominent, heavily chitinized. Antennal club broadly oval, 1.4 times longer than wide, longer than funicle with two obscure, procurved sutures, surface densely micro-pubescent; suture 1 chitinized at lateral margin, suture 2 marked by a procurved groove and a row of setae. Pronotum 1.2 times longer than wide, widest at base; sides distinctly arcuate; anterior margin acutely pointed, strongly bent downwards, bearing ten low serrations; anterior slope steeply declivitous, shining, bearing numerous asperities; summit on basal third; posterior area smooth, shining, with widely separated, small punctures. Elytra 1.3 times longer than wide; sides weakly arcuate on anterior three-fourths, broadly rounded behind; discal striae not impressed, punctured in regular rows, punctures distinct, of moderate size, weakly impressed; discal interstriae 2.0–3.0 times wider than striae, glabrous, shining. Declivity convex;

strial punctures smaller than those on disc; interstriae as on disc except each bearing a median row of short, flattened scales.

**Male.** Similar in size to female. Frons flattened from epistoma to above upper eye level; surface shining throughout, with widely separated, impressed punctures and without a rounded tubercle above antennal insertions. Pronotum as in female except anterior margin more narrowly rounded, not bent sharply downward. Elytra as in female except interstitial scales slightly narrower and longer.

**Distribution.** This species is known from the type localities in Saint Lucia and Martinique and possibly occurs in the Dominican Republic.

**Etymology.** This species is named for its geographic distribution.

**Comments.** The female of this species is easily distinguished by the generic characters described above. The frons of the female is unique and bears a large, circular, dull, shagreened area from eye to eye and from above epistomal margin to above upper eye level. The male of this species is similar in size to the female described above but differs by the shining, flat, weakly transversely impressed frons which bears large, shallow punctures and does not bear a rounded tubercle above the antennal insertions, by the more evenly rounded anterior margin of the pronotum, by the more shallowly emarginate epistomal margin and by the slightly longer declivital scales.

## TRIBE CORTHYLINI

This tribe is very abundant and diverse in the New World tropics and has not been adequately studied. Generic limits are not satisfactorily established and most larger genera are almost certainly polyphyletic.

Most, if not all, species in this tribe are ambrosia beetles, boring deep into host tissue and introducing a fungus which grows on the tunnel walls and provides food for the larvae.

### Genus *Amphicranus* Erichson

*Amphicranus* Erichson 1836: 63; Wood and Bright 1992: 1045; Bright and Skidmore 2002: 298 (checklist); Bright 2014: 258.

Members of this genus may be distinguished by the strongly explanate elytral apex, by the elongate antennal club and by the larger prosternal area with the ventral margin fitting snugly against the head.

This genus contains 65 species, all from the Neotropical area (Wood and Bright 1992); two West Indian species are known, both known from the Dominican Republic.

### Key to the species of *Amphicranus* in the West Indies

1. Anterior margin of pronotum biserrate, with a submarginal median granule between bases of marginal serrations; apical portion of elytral declivity, at level of sutural emargination, with a large, rounded process, mostly located on inner slope of declivital excavation; length 4.1–4.2 mm, 4.1 times longer than wide ..... *A. hispaniolus* Bright, sp. nov. (p. 396)
- Anterior margin of pronotum with a single, acute serration; apical portion of elytral declivity, above level of sutural emargination, with a much smaller process, which is an inward pointing swelling on lateral margin of declivital excavation; length 3.4 mm, 3.4 times longer than wide ..... *A. taino* Bright, sp. nov. (p. 396)

***Amphicranus hispaniolus* Bright, sp. nov.**

Figures 479, 549.

**Type Material.** **HOLOTYPE** (female) labeled: “**DOMINICAN REPUBLIC:** Province Pedernales: N. Sierra de Baoruco, 1240 m, 18°09.023’N, 71°37.387’W, Las Abejas, 22 Aug 1999, light, M. A. Ivie and K. A. Guerrero” / “**HOLOTYPE** *Amphicranus hispaniolus* Bright 2016” (WIBF [CNCI]). **PARATYPE** (1) labeled: “**DOMINICAN REPUBLIC:** Pedernales, 25 km N. Cabo Rojo, 12 July 1996, R. Turnbow” (RHTC).

**Description (Female).** Length 4.1–4.2 mm, 4.1 times longer than wide; reddish-brown. Frons slightly convex; surface dull, densely micro-reticulate, with widely scattered, obscure, impressed, minute punctures. Antennal club elongate, slightly less than 1.7 times longer than wide, widest through segment 3; sutures 1 and 2 slightly arcuate, both chitinized at lateral margins. Pronotum 1.6 times longer than wide, sides straight, parallel on basal three-fourths; anterior margin broadly rounded, with one distinct, acute serration at middle and one smaller, rounded serration on each side and below the median serration, a low, acute, weakly serrate ridge extends from just behind antero-lateral margin to base of large, median serration to opposite side; anterior slope steeply declivous, finely asperate; posterior half dull, densely micro-reticulate, with scattered, very fine, impressed, minute punctures. Elytra 2.1 times longer than wide, sides straight, parallel on basal four-fifths, each elytron separately rounded at apex, with a shallow, V-shaped sutural notch; elytral disc dull, minutely reticulate, striae vaguely discernable, not impressed, punctured in regular rows, punctures obscure, not impressed but vaguely visible. Declivity deeply excavated, occupying slightly less than half of total elytral length, lateral margins strongly elevated; lateral margins at base of declivity with three pairs of pointed tubercles, these increasing in length posteriorly; a very large, blunt elevation located at level of apex of sutural notch and on inner slope of lateral margin, this elevation directed toward suture and half as high as length of adjacent setae; face of declivity shining, without distinct punctures and bearing dense, long, yellowish setae.

**Male.** Unknown.

**Distribution.** This species is known from the type localities in the Dominican Republic.

**Etymology.** This species is named for the island of Hispaniola.

**Comments.** Adults may be distinguished by the characters summarized in the above key.

***Amphicranus taino* Bright, sp. nov.**

Figures 321, 322.

**Type Material.** **HOLOTYPE** (female) labeled: “**DOMINICAN REPUBLIC:** Province La Vega, La Cienega, 1100 m, 19°04.07’N, 70°51.68’W, 29 July 1999, at light, M. A. Ivie and K. A. Guerrero” / “**HOLOTYPE** *Amphicranus taino* D. E. Bright 2016” (WIBF [CNCI]). **PARATYPE** (1): labeled with same data as holotype (CNCI).

**Description (Female).** Length 3.4 mm, 3.4 times longer than wide; reddish-brown. Frons flattened from epistoma to upper level of eyes; surface dull, densely micro-reticulate, glabrous; epistoma with a fine, raised, transverse line with a small tuft of setae at mid-point. Antennal club elongate, 1.7 times longer than wide, widest through segment 3; suture 1 weakly arcuate, 2 less strongly arcuate. Pronotum 1.5 times longer than wide; sides parallel on basal two-thirds, strongly converging to a single, median point on anterior margin; anterior slope steeply declivous, finely asperate; posterior half dull, minutely reticulate, with very faint, widely scattered, fine, impressed, minute punctures; lateral margin with a very fine, raised line. Elytra 2.0 times longer than wide; sides parallel on basal four-fifths, each elytron separately rounded at apex, with a shallow, V-shaped sutural notch; elytral disc moderately shining, minutely reticulate, striae and stria punctures not evident, with very fine, impressed, minute punctures scattered over surface. Declivity deeply excavated, occupying slightly less than half of total elytral length, lateral margins strongly elevated; lateral margins at base of declivity with three pairs of pointed tu-

bercles, these increasing in length posteriorly; each lateral margin at level slightly anterior to apex of sutural notch bearing a large, blunt elevation, this elevation directed toward suture and half as high as length of adjacent setae; face of declivity shining, without distinct punctures and bearing dense, long, yellowish setae.

**Male.** Unknown.

**Distribution.** This species is known from the type locality in the Dominican Republic.

**Etymology.** The specific name of this species is the name of the principal Indian tribe on the island of Hispaniola at the time of the European conquest in 1492.

**Comments.** Adults of this species may be readily recognized by the characteristics of the elytral apex as described in the key and description.

### Genus *Corthylocurus* Wood

*Corthylocurus* Wood 1966: 18; Wood and Bright 1992: 1068; Bright and Skidmore 2002: 324 (checklist); Bright 2014: 262.

Members of this genus may be distinguished from those in *Corthylus* by the very different female frons, as described below, by the straight sutures on the antennal club and by the inflated female protibia.

Ten species are listed in Wood and Bright (1992) from central Mexico to Brazil. One species is recognized from the West Indies.

Like *Corthylus*, all species are monogynous and xylomycetophagous. Small broken, dying, or injured stems of various species of trees, shrubs and vines are infested (Wood 2007).

### *Corthylocurus pisinnus* (Bright), New Combination

*Corthylocurus pisinnus* Bright 1972: 103; Wood and Bright 1992: 1077.

**Description (Female).** Length 1.8 mm, 2.5 times longer than wide; dark reddish-brown, antennae and legs lighter. Frons concave on two oval areas on each side of a wide, smooth, longitudinally grooved, shining, median line; the two concave areas each smaller than antennal club, densely pubescent with scalelike setae, these acuminate at tips; surface above these areas convex, minutely reticulate; vestiture consisting of moderately long, hairlike setae along epistomal margin, along margins of concave areas and intermixed with scalelike setae in concave areas. Antennal club broadly oval, very large, 1.2 times longer than wide, with two weakly arcuate, transverse sutures. Pronotum 1.2 times longer than wide; sides weakly arcuate, weakly converging on posterior third; anterior margin broadly rounded, serrate; anterior slope bearing numerous, low asperities, surface between asperities moderately shining, reticulate; posterior and lateral portions smooth, opaque, finely reticulate, punctures very fine, very shallow, widely separated. Elytra 1.4 times longer than wide; sides parallel on anterior three-fourths, broadly rounded behind; striae not impressed, punctures in nearly regular rows, small, slightly impressed; interstriae wide, brightly shining, very faintly punctured. Declivity convex; interstriae 1 faintly elevated; interstriae 3 slightly more strongly elevated, bearing several, very small granules; interstriae 2 distinctly narrowed caused by divergence of striae 2 around the elevated portion of interstriae 3; elytral apex entire; vestiture consisting of a very few stout, hairlike setae arising from granules on interstriae 3 and a few additional setae on other interstriae.

**Male.** Unknown.

**Distribution.** This species is known from Jamaica.

**Specimens examined. JAMAICA:** Saint Thomas Parish, Penlyne Castle, 20 July 1966, Howden and Becker (1-CNCI).

**Comments.** Adults of this small species may be easily distinguished from those of *Corthylus* by their small size and by the features of the female frons and declivity as brought out in the key.

### Genus *Corthylus* Erichson

*Corthylus* Erichson 1836: 64; Wood and Bright 1992: 1069; Bright and Skidmore 2002: 325 (checklist); Bright 2014: 264.

Members of *Corthylus* may be distinguished from those in other genera in the Corthylini by the fine, raised line on the lateral margins of pronotum, by the apparently absent antennal funicle, by the asymmetrical antennal club and by the convex or concave elytral declivity. The female frons is flat to concave, usually with abundant pubescence.

Wood and Bright (1992) list 118 species distributed from southern Canada to South America, nine species are treated herein.

All species are monogynous and xylomycetophagous. Tunnels are constructed deep into the wood of cut or broken limbs or boles of various species of woody plants (Wood 2007).

### Key to the species of *Corthylus* in the West Indies

1. Ventrolateral margin of elytral declivity rounded; antennal club solid with no indication of sutures or distinct grooves; posterior surface of female antennal club without a conspicuous cirrus .. 2
- Ventrolateral margin of elytral declivity with a fine, elevated ridge extending from suture to near interstriae 7; antennal club with distinct sutures or impressed, arcuate grooves; posterior surface of female antennal club with a very long cirrus ..... 7
- 2(1). Elytral declivity with granules and setae in all interstriae; length 1.8–2.3 mm; Dominican Republic, Haiti ..... *C. monticellus* Bright, sp. nov. (p. 402)
- Elytral declivity with granules and/or setae on interstriae 1 and 3 ..... 3
- 3(2). Pronotum, antennae, legs, ventral surfaces and head red, elytra black to reddish-black; length 2.0–2.3 mm; Dominican Republic ..... *C. versicolor* Bright, sp. nov. (p. 407)
- Color variously black or reddish-brown, not distinctly bicolored ..... 4
- 4(3). Length 2.5–2.8 mm; elytral declivity evenly convex, interstriae 1 weakly elevated, striae distinctly punctured; Dominican Republic ..... *C. alpestris* Bright, sp. nov. (p. 400)
- Length less than 2.5 mm ..... 5
- 5(4). Female frons shining, very densely, minutely punctured; punctures in declivital striae 1 and 2 usually indistinct, weakly visible; declivital interstriae 2 not impressed, 3 not elevated; length 2.3 mm; Jamaica ..... *C. curiosus* Bright (p. 401)
- Female frons dull, very densely minutely reticulate, not punctured; punctures in declivital striae 1 and 2 variable; declivital interstriae 2 weakly impressed ..... 6
- 6(5). Punctures in declivital striae 1 and 2 weakly impressed to obsolete; female frons deeply concave; length 1.7–1.9 mm; Cuba, Dominica, Guadeloupe, Puerto Rico ..... *C. subasperulus* Eggers (p. 404)
- Punctures in declivital striae 1 and 2 distinct, moderately to deeply impressed; female frons flattened, very weakly concave; length 2.1 mm; Puerto Rico ..... *C. insularis* Bright and Torres (p. 401)



**Figures 319–327.** Adult features of *Pityophthorus*, *Pseudopityophthorus*, *Amphicranus* and *Corthylus* spp. **319)** *Pityophthorus grenadacolens* (declivity). **320)** *Pseudopityophthorus absitus* (declivity). **321)** *A. taino* (elytral apex). **322)** *A. taino* (antenna). **323)** *C. alpestris* (declivity). **324)** *C. alpestris* (antenna). **325)** *C. curiosus* (declivity). **326)** *C. curiosus* (antennal club). **327)** *C. insularis* (declivity).

- 7(1). Female frons flattened or weakly convex, glabrous, densely punctured; elytral declivity steep, truncate, weakly impressed along suture, with a single, large, acute granule in middle of declivital face; length 1.8 mm; Saint Lucia ..... ***C. reticulatus* Bright, sp. nov.** (p. 404)  
 — Female frons concave, densely pubescent; elytral declivity steeply convex, with granules in interstriae 3; male frons transversely impressed above epistoma, surface dull, densely reticulate with scattered minute punctures ..... **8**

- 8(7). Female frons densely, evenly pubescent, without an especially dense concentration of setae on upper margin, setae all of nearly equal length but slightly longer along periphery; elytral declivity steeply convex, granules in interstriae 1 and 3 smaller; length 2.0–2.3 mm; Cuba, Bahamas ..... *C. papulans* Eichhoff (p. 403)
- Female frons deeply concave, with a dense brush of long setae along upper margin, remainder of surface densely pubescent, especially along epistomal margin; elytral declivity steeply convex, interstriae 1 and 3 slightly to distinctly elevated, 3 ending at middle of declivital face, with a row of small, acute granules (female) or without granules (male); length 1.7–2.4 mm; generally distributed ..... *C. tuberculatus* Eggers (p. 406)

***Corthylus alpestris* Bright, sp. nov.**

Figures 323, 324, 411.

**Type Material.** **HOLOTYPE** (female) labeled: “DOMINICAN REPUBLIC: Independencia, Sierra de Neiba just south of crest, 5 km NNW Angel Feliz, 1780 m” / “18–41N, 71–47W, 13–15 October 1991, J. Rawlins, R. Davidson, C. Young, S. Thompson, cloud forest” / “HOLOTYPE *Corthylus alpestris* D. E. Bright 2016” (CMNH). **PARATYPES** (14): 7 labeled with same data as holotype (CNCI, CMNH); 4 labeled with same data as holotype except “5.5 km NNW Angel Feliz, 1750 m” / “21–22 July 1992, dense cloud forest” (CNCI, CMNH); 1 labeled: “DOMINICAN REPUBLIC: Elias Pina, Sierra de Neiba just north of crest, 6 km NNW Angel Feliz, 1770 m” / “18–41N, 71–47W, 15 October 1991, C. Young, S. Thompson, R. Davidson, J. Rawlins, mesic montane forest” (CMNH); 1 labeled: “DOMINICAN REPUBLIC: Independencia, Sierra de Bahoruco, north slope, 13.3 km SE Puerto Escondido, 18–12–33N, 71–30–47W, 1812 m, 24–25 Nov 2004” / “J. Rawlins, C. W. Young, C. Nunez, V. Verdecia, W. Zanol, *Pinus*, *Rubus*, *Garrya*, open Malaise trap, Sample 41385” (CMNH); 1 labeled: “DOMINICAN REPUBLIC: La Vega, Cordillera Central, Reserva Valle Nuevo La Nevera, 15.1 km SE Valle Nuevo, 18–41–47N, 70–35–30W, 2252 m, 3 June 2003” / “R. Davidson, C. Young, C. Nunez, J. Rawlins: Acevedo, M. de La Cruz, montane meadow in cloud forest, pine, yellow pan trap, sample 24462” (CMNH).

**Description (Female).** Length 2.5–2.8 mm, 2.5–2.8 times longer than wide; dark reddish-brown. Frons deeply concave from epistoma to well above eyes and laterally from eye to eye; surface dull, densely minutely reticulate, glabrous, with abundant, long, incurved setae around periphery. Antennal club broadly, asymmetrically triangular, 1.4 times longer than wide, completely aseptate except often with a weak, obscure groove; posterior face with sparse, long setae on margin and with a clump of longer, curved setae at upper angle of margin. Pronotum as long as wide, widest on posterior half; sides weakly arcuate on basal two-thirds, weakly constricted before broadly rounded anterior margin; anterior margin with a row of six to eight low, closely placed, serrations; anterior one-third of disc convex, with numerous, low, wide asperities; summit very weakly elevated; posterior one-half smooth, dull, densely, minutely reticulate, with widely scattered, very fine, weakly impressed minute punctures; vestiture absent except long setae on anterior slope. Elytra 1.4–1.5 times longer than wide; sides parallel on basal three-quarters, converging to broadly rounded apex; disc dull, entire surface densely, minutely reticulate, glabrous, with striae indistinct, not impressed, punctures small, indistinct, in barely detectible rows; interstriae obscure, 2.0 times wider than striae, interstriae 3 and 5 each with a few short, erect setae. Declivity evenly convex; striae weakly impressed, punctures weakly impressed; interstriae 1 and 3 weakly elevated, both with a median row of very small granules and long, erect setae; interstriae 2 as wide as discal width, weakly impressed, devoid of granules or setae; remaining interstriae each with a median row of small granules and setae.

**Male.** Unknown.

**Distribution.** This species is known from the type localities in the Dominican Republic.

**Etymology.** From *alpestris*, Latin for of high mountains, referring to the occurrence of this species at high elevations.

**Comments.** Females of this species may be distinguished by their larger size, by the concave frons with a fringe of long, incurved setae on periphery, by the slightly elevated declivital interstriae 3 and by the other characters on the elytral declivity as mentioned above.

This species evidently occurs at high elevations on the mountains of the Dominican Republic.

***Corthylus curiosus* Bright**

Figures 325, 326.

*Corthylus curiosus* Bright 1972: 104; Wood and Bright 1992: 1072.

**Description (Female).** Length 2.3 mm, 2.5 times longer than wide; dark reddish-brown on elytra, lighter on pronotum, antennae, legs and ventral surface. Frons broadly concave from eye to eye, somewhat more deeply so on lower portion; surface finely, densely punctured, punctures small, deeply impressed, each bearing a minute, scalelike seta; vestiture around cavity consisting of moderately long, incurved, minutely plumose setae. Antennal club large, triangular, 1.3 times longer than wide; sutures not visible; anterior angle bearing a group of longer, curved setae, these setae as long as anterior margin. Pronotum 1.1 times wide than long; sides arcuate; anterior margin broadly rounded, serrate; anterior slope bearing numerous low asperities, surface between asperities finely reticulate; posterior and lateral areas smooth, dull, minutely reticulate, punctures fine, shallow, widely separated. Elytra 1.4 times longer than wide; sides very weakly arcuate; posterior margin broadly rounded; discal striae at most very weakly impressed, striae 1 more impressed than others, punctures fine, shallowly impressed; discal interstriae weakly convex, shining very finely punctured, each bearing a row of small, rounded granules placed near striae punctures on posterior part of disc. Declivity convex; interstriae 1 weakly elevated, granulate; other interstriae as on disc except the granules form a median row; surface slightly more strongly reticulate.

**Male.** Unknown.

**Distribution.** This species is known from Jamaica.

**Specimens examined. JAMAICA:** Saint Andrew Parish, Hardwar Gap, 4000', 11 July 1966, Howden and Becker (2-CNCI); Saint Thomas Parish, Whitefield Hall, 27 July 1966, Howden and Becker (1-CNCI); Portland, N side of Mossman's Peak, 24.VIII.1980, 1550 m, A. Norrbom (1-CMNH); Portland, just east of Hardwar Gap, 22.VIII.1980, 1100 m, A. Norrbom (1-CMNH).

**Comments.** Adults of this species may be distinguished by the broadly concave and densely punctured frons of the female and by declivital interstriae 3 not elevated and bearing numerous, distinct granules.

***Corthylus insularis* Bright and Torres**

Figures 327, 328.

*Corthylus insularis* Bright and Torres 2006: 424.

**Description (Female).** Length 2.1 mm, 2.4 times longer than wide; head and elytra dark to light brown, pronotum, antenna, legs and ventral surface lighter. Frons shallowly concave from epistoma to well above eyes and laterally from eye to eye; surface dull, densely minutely reticulate, glabrous but with a sparse fringe of long, incurved, yellowish setae, these not obscuring the surface. Antennal club broadly, asymmetrically oval, 1.6 times longer than wide, completely aseptate, with one vague, shallow, arcuate impression on anterior face; posterior face with sparse, long setae on margin and an obscure clump of longer setae at upper angle of margin. Pronotum very slightly wider than long, widest on posterior half; sides weakly arcuate on basal two-thirds, weakly constricted before broadly rounded anterior margin; anterior margin with two, very small, low, closely placed, median serrations, these similar in size to asperities on anterior slope; anterior one-third of disc convex, with numerous, very small, low, wide asperities; summit not elevated; posterior two-thirds smooth, dull, densely, minutely reticulate, with widely scattered, very fine, weakly impressed minute punctures; vestiture absent. Elytra 1.4 times longer than wide; sides parallel on basal three-quarters, converging to broadly rounded apex; disc brightly

shining, glabrous, with striae at most weakly visible, not impressed, punctures obscure, shallowly impressed in barely detectible rows; discal interstriae obscure, not readily detectable. Declivity evenly convex; punctures in striae 1 and 2 distinct; interstriae 1 and 3 slightly elevated, convex, each with a median row of small acute granules and a median row of erect setae; interstriae 2 slightly impressed, flat, unarmed; interstriae 4–8 not elevated, devoid of granules, each with a median row of erect, equal length setae, these equal in length to distance between rows of setae in interstriae 1 and 3.

**Male.** Unknown.

**Distribution.** This species is known from Puerto Rico.

**Specimens examined. PUERTO RICO:** El Yunque, 17.VI.1996, J. A. Torres, light trap (1–CNCI), same locality, VIII.1996, C. Labay (1–CNCI); El Yunque, Palo Colorado, 20.VII.1989, light trap (2–CNCI); El Yunque, Liguillo National Forest, 1000 m, June–July 1985, E. LaRue (1–WIBF); Guaynabo, VIII.1–30.1999, light trap, J. Torres (1–CNCI); Río Grande, II.17.1999, J. Torres, in *Dacryodes excelsa* log (1–CNCI).

**Comments.** Females of this species may be recognized by the sulcate frons with a fringe of longer setae on the periphery, by the evenly convex elytral declivity with a row of small granules and setae in interstriae 1 and 3, by the aseptate antennal club and by the color pattern described above.

In the original description of this species, I commented that the holotype would be placed in the USNM. However, since all of the type material was collected by J. A. Torres and deposited in the CNCI, the CNCI should have been the designated repository. The holotype and five paratypes are in the CNCI.

***Corthylus monticellus* Bright, sp. nov.**

Figures 329, 330.

**Type Material. HOLOTYPE** (female) labeled: “**DOMINICAN REPUBLIC:** Barahona, Eastern Sierra, Bahoruco, Reserva Cachote, 12.8 km NE Paraiso, 18–05–54N, 71–11–21W, 1230 m, 22–23 Nov. 2004” / “J. Rawlins, C. Young, V. Verdecia, C. Nunez, W. Zanol, cloud forest with tree ferns, uv light, sample 44215” / “HOLOTYPE *Corthylus monticellus* D. E. Bright 2016” (CMNH). **PARATYPES** (21): 3 labeled with same data as holotype (CMNH); 7 labeled with same data as holotype except date is “19–21 May 2004, Sample 44214” (CNCI, CMNH); 3 labeled with same data as holotype except “1219 m, 19–21 May 2004, disturbed cloud forest on road, Sample 44114” (CMNH); 4 labeled with same data as holotype except “22–23 May 2004, Sample 44115” (CMNH, CNCI); 1 labeled with same data as holotype except “1198 m, 19–21 May 2004” (CMNH); 2 labeled: “**DOMINICAN REP:** Province Barahona, nr. Flipinas, Larimar Mine; 26.VI–7.VII.1992” (1) or “20–26.VI.1992” (1) R. E. Woodruff and P. Skelley, flight trap” (2–FSCA); 1 labeled: “**HAITI:** Department du Sud, Ville Formon, 31 km NW Les Cayes, s slope Morne Formon Massif de La Hotte” / “18–20N, 74–01W, 1405 m, 7–8 September 1995, R. Davidson, G. Ohore, J. Rawlins, disturbed forest and fields” (CMNH).

**Description (Female).** Length 1.8–2.3 mm, 2.4 times longer than wide; dark reddish-brown. Frons deeply concave from epistoma to well above eyes and laterally from eye to eye; surface dull, densely minutely reticulate, with abundant, short setae, these longer and incurved around periphery. Antennal club broadly, asymmetrically oval, 1.5 times longer than wide, completely aseptate; posterior face with sparse, long setae on margin and a clump of longer, curved setae at upper angle of margin. Pronotum as long as wide, widest on posterior half; sides weakly arcuate on basal two-thirds, weakly constricted before broadly rounded anterior margin; anterior margin with two low, closely placed, median serrations; anterior one-third of disc convex, with numerous, low, wide asperities; summit weakly elevated; posterior one-half smooth, dull, densely, minutely reticulate, with widely scattered, very fine, weakly impressed minute punctures; vestiture absent. Elytra 1.5 times longer than wide; sides parallel on basal three-quarters, converging to broadly rounded apex; disc dull, entire surface densely, minutely reticulate, glabrous, with striae obsolete, not impressed, punctures not visible or very weakly so, in barely detectible rows; interstriae obscure, not readily detectable. Declivity evenly convex; striae weakly impressed, punctures weakly impressed; all interstriae with a median row of small, distinct granules and a median row of erect setae, these 1.0–2.0 times longer than interstitial width and separated in a row by a distance equal to interstitial width.

**Male.** Unknown.

**Distribution.** This species is known from the type localities in the Dominican Republic and Haiti.

**Etymology.** From *monticellus*, Latin for of mountains, referring to the habitat of this species.

**Comments.** Females of this species may be recognized by the evenly convex elytral declivity on which each interstriae bears a median row of small granules and long setae and by the concave frons which bears short setae over the entire surface and long, incurved setae on the margins. The male is evidently not represented in the available material.

***Corthylus papulans* Eichhoff**

Figures 331, 332.

*Corthylus papulans* Eichhoff 1869: 280; Wood and Bright 1992: 1076; Bright and Skidmore 1997: 229; Bright and Skidmore 2002: 160; Bright 2014: 266.

*Corthylus spinifer* Schwarz 1891: 114 (Florida).

**Description (Female).** Length 2.0–2.3 mm, 2.2 times longer than wide; light to dark brown. Frons shallowly concave from epistoma to well above eyes and laterally from eye to eye; surface dull, densely minutely reticulate, with abundant, short setae, these slightly longer around periphery. Antennal club broadly, asymmetrically oval, as long as wide measured at longest and widest points, with three arcuate grooves marking sutures, sutures 1 and 2 narrowly chitinized at lateral margin; posterior face with a cirrus of very long setae arising near base, setae longer than twice club length. Pronotum as long as wide, widest at middle; sides broadly arcuate on basal two-thirds, weakly constricted before broadly rounded anterior margin; anterior margin with a row of four to six obscure, low, closely placed, serrations, median pair slightly larger; anterior one-third of disc convex, with numerous, low, wide asperities; summit not elevated; posterior one-half smooth, dull, densely, minutely reticulate, with exceedingly obscure, widely scattered, very fine, weakly impressed minute punctures; vestiture sparse. Elytra 1.2 times longer than wide; sides parallel on basal three-quarters, converging to broadly rounded apex; disc shining, glabrous, appearing randomly punctured, with striae and interstriae not evident. Declivity evenly, steeply convex, surface randomly punctured, striae weakly visible, not impressed, punctures weakly impressed; interstriae 1 and 3 weakly elevated, interstriae 1 without granules, 3 with a row of two to four very small granules; interstriae 2 as wide as discal width, weakly impressed, unarmed.

**Male.** Similar in size and proportions to female. Frons convex, transversely impressed above epistoma, with a small, median elevation; surface dull, densely, minutely reticulate, with minute, scattered points. Antennal club smaller, more evenly oval, without a cirrus of long setae. Pronotum with two distinct serrations on anterior margin. Granules on declivital interstriae 3 slightly larger.

**Distribution.** This species is known from southern Florida to northern South America. In the West Indies it is known from the Bahamas, Cuba, the Dominican Republic and Grenada.

**Specimens examined.** **BAHAMAS: Andros Island**, Forfar Field Station, 17.V.1987, J. Browne, junction of low coastal coppice and dry pineland blacklight (1–SBPC); San Andros, San Andros Hotel, J. Browne, 12.VI.1987, junction of low interior coppice and dry pineland blacklight (1–SBPC); 5.5 mi N “T” junction 5 mi E old lumber road hidden coppice, 30.VII.1987, J. Browne, coast coppice blacklight (1–SBPC); San Andros, Robinson’s Place, J. Browne, 12.VI.1987, wet pineland blacklight (2–SBPC); London Ridge, 24.VII.1987, J. Browne, high interior coppice-blacklight (1–SBPC); Maidenhair Coppice, blacklight trap, various dates in 2004, R. Turnbow or M. Thomas (5–RHTC); Forfar Field Station, nr Stafford Creek, 22–28.VII.2006, M. C. Thomas, T. R. Smith, uv trap in coastal coppice (6–FSCA) and numerous collections from this locality (22–CNCI, RHTC). **Eleuthera**, Rainbow Bay, IV–VII.1989, D. B. and R. W. Wiley (3–RHTC). **Great Inagua**, Northwestern Point, blacklight trap in dry leguminous forest, 11.VII.2007, Thomas, Turnbow and Smith (5–FSCA); north coast road N21.10813 W73.60196, 13.VII.2007, Thomas, Turnbow and Smith (1–FSCA). **CUBA:** Holguin Province, Estación Ecológica, 20.48613°N, 75.79152°W, 656 m, mercury vapor light, 12.V.2013, A. B. T. Smith, R. Anderson, G. Zhang (1–CMNO); Monte Imias nr. California, Camaguey Province, June 7, 1959, M. W. Sanderson (1–INHS); Sierra Rangel, (illegible word), 1969: Del Rio, F. de Zayas (1–

CNCI). **DOMINICAN REPUBLIC:** La Vega, Jarabacoa, 440 m, 24.VIII.95, riverside uv light, S. and J. Peck (1-SBPC).

**Record from literature.** GRENADA, island record only (Wood and Bright 1992).

**Comments.** Adults of this species may be distinguished by the shallowly concave female frons with a fringe of short incurved setae which are slightly longer than the setae in the concave portion, by the smaller pair of serrations on the male anterior margin of the pronotum and by the other characters mentioned in the description above.

***Corthylus reticulatus* Bright, sp. nov.**

Figures 333, 334.

**Type Material.** **HOLOTYPE** (female) labeled: “**SAINT LUCIA:** Barre de L’Isle, 13.93682°N, 60.95936°W, 29 JUNE-03 JULY 2009, 340 m, uv light trap, C. A. Maier, M. L. Gimmel” / “**HOLOTYPE** *Corthylus reticulatus* D. E. Bright 2016” (WIBF [CNCI]).

**Description (Female).** Length 1.8 mm, 2.5 times longer than wide; yellowish-brown with anterior two-thirds of pronotum dark brown. Frons evenly convex, narrowly transversely impressed above epistoma; surface moderately shining, minutely reticulate and with scattered, large, shallow punctures; vestiture inconspicuous. Antennal club oval, 1.5 times longer than wide, with three arcuate sutures, these marked by weak grooves and rows of short setae, with a clump of long, light yellow setae arising on lateral margin of posterior face and including a longer, thicker, dark brown seta or clump of setae. Pronotum as long as wide, widest at middle; sides weakly arcuate, anterior margin broadly rounded, unarmed; anterior slope with numerous, densely placed, small asperities; posterior third smooth, minutely reticulate, impunctate. Elytra 1.4 times longer than wide; sides subparallel, converging to broadly rounded apex; entire discal surface dull, minutely reticulate with very faint stria punctures. Elytral declivity commencing on posterior sixth of elytra, abrupt, steep, nearly vertical; face slightly more strongly punctured than disc, bearing a small, acute, conical granule in middle; ventral and lateral margin acutely margined from suture to level of median granule, rounded above, with an extremely faint granule at base of what should be interstriae three; declivital face with a few very small setae.

**Male.** Unknown.

**Distribution.** This species is known from the type locality in Saint Lucia.

**Etymology.** From *reticulatus*, Latin for netlike or netted, referring to the dull surface of the elytral disc.

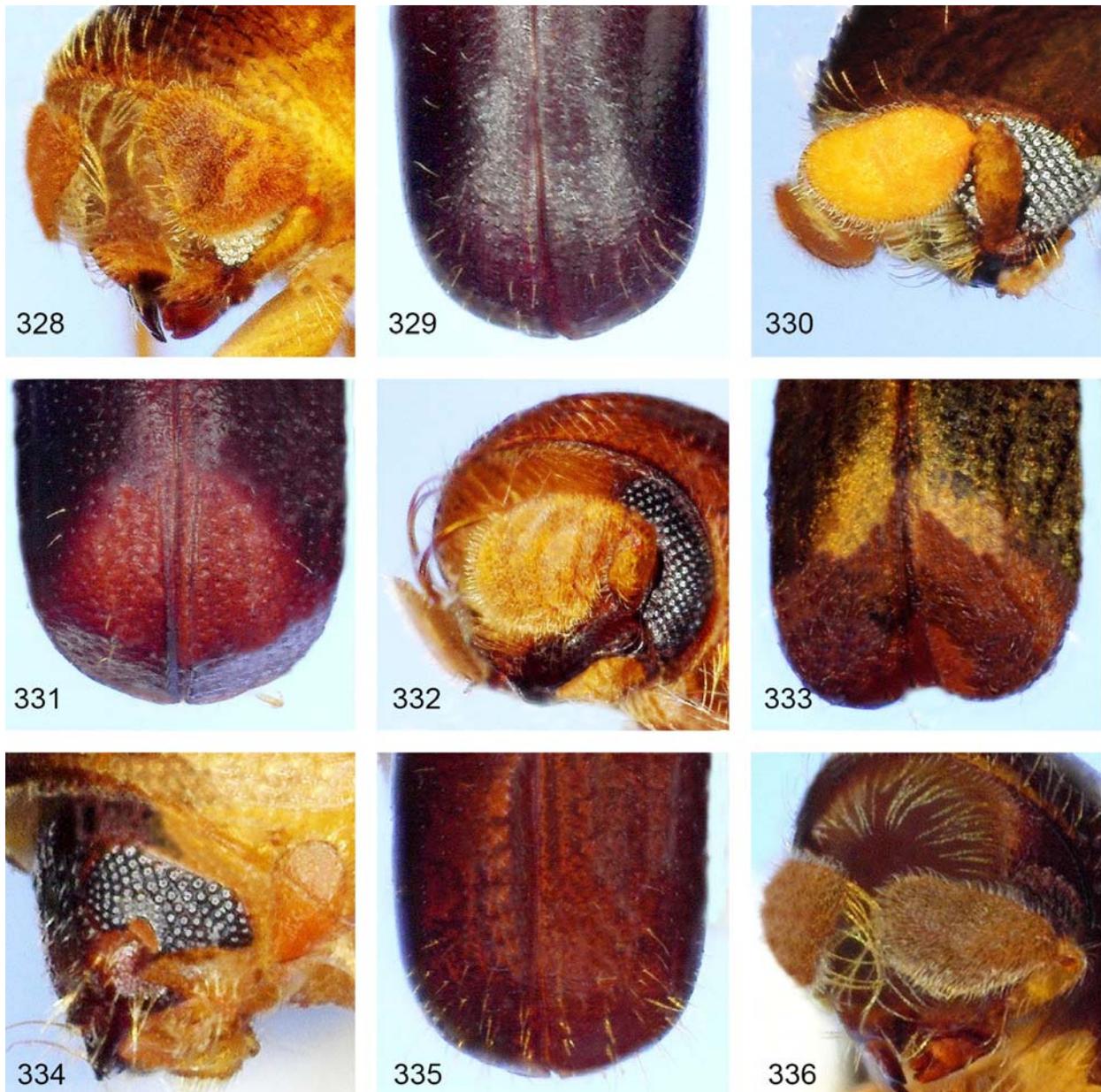
**Comments.** Females of this species may be most readily recognized by the weakly convex frons which bears dense, shallow punctures and no vestiture, by the peculiar clump of long, dark brown setae on the posterior face of the antennal club and by the steep, nearly vertical declivity which bears a small granule in the middle of the declivital face. The male is unknown.

***Corthylus subasperulus* Eggers**

Figures 335, 336.

*Corthylus subasperulus* Eggers 1940: 141; Wood and Bright 1992: 1080.

**Description (Female).** Length 1.7–1.9 mm, 2.4 times longer than wide; black. Frons deeply concave from epistoma to well above eyes and laterally from eye to eye; surface dull, densely minutely reticulate, glabrous, with a fringe of long incurved setae extending completely around periphery of concave area. Antennal club broadly oval, 1.2 times longer than wide measured at longest and widest points; surface aseptate; posterior face with a cirrus of short setae arising near base, setae shorter than one-quarter length of club. Pronotum as long as wide, widest at middle; sides broadly arcuate on basal two-thirds, weakly constricted before broadly rounded anterior margin; anterior margin with a row of eight distinct, low, closely placed serrations, median pair slightly larger; anterior one-third of disc convex, with numer-



**Figures 328–336.** Adult features of *Corythylus* spp. **328)** *C. insularis* (antennal club). **329)** *C. monticellus* (declivity). **330)** *C. monticellus* (antennal club). **331)** *C. papulans* (declivity). **332)** *C. papulans* (antennal club). **333)** *C. reticulatus* (declivity). **334)** *C. reticulatus* (antennal club). **335)** *C. subasperulus* (declivity). **336)** *C. subasperulus* (antennal club).

ous, low, wide asperities; summit not elevated; posterior one-half smooth, dull, densely, minutely reticulate, with widely scattered, small punctures; glabrous. Elytra 1.5 times longer than wide; sides parallel on basal three-quarters, converging to broadly rounded apex; disc shining, glabrous, densely, finely, randomly punctured, with striae and interstriae not evident. Declivity evenly convex, surface randomly punctured, striae not evident; interstriae 1 very slightly elevated, with a median row of small granules and moderately long setae; interstriae 2 very weakly impressed, without granules or setae; interstriae 3 not elevated, with a row of granules and setae as on interstriae 1; interstriae 5 and 7 with a median row of long setae; apical margin rounded.

**Male.** Similar in size and proportions to female. Frons convex, narrowly transversely impressed above epistoma, with a small, shining, median elevation at epistomal lobe; surface dull, densely, minutely reticulate, with minute, scattered punctures. Antennal club slightly smaller, more evenly oval, without a cirrus of long setae. Pronotum with two distinct serrations on anterior margin. Elytra as in female.

**Distribution.** This species is known from Cuba, Dominica, Guadeloupe and Puerto Rico.

**Specimens examined.** **CUBA:** Santiago Province, Gran Piedra, Isabelica, 6–7.XII.95, 1110 m, sweeps, L. Masner (1–CNCI); Santiago Province, Gran Piedra, Met. Radar, 6–17.XII.95, 1110 m, elfin forest flight intercept trap, S. Peck (1–SBPC). **DOMINICA:** 1.7 miles E Pont Casse, March 12, 1965, light trap, W. W. Wirth (1–USNM); Saint George Parish, Freshwater Lake. 25 June 2004, R. Turnbow (2–RHTC); 1250', 5 mi E Dublanc, 20 Aug. 1986, C. W. and L. O'Brien (6–CNCI); 1250', 6 mi E Dublanc, 16 Aug. 1986, C. W. and L. O'Brien (6–CNCI); 6 mi E Salisbury, Morne Apion, 2500', 19.8.1986, C. W. and L. B. O'Brien (1–CNCI). **GADELOUPE:** Bouillante, Cretes de Village aux battages, 19.VII.1999, D. and J-P. Roguet (1–CNCI); Island record only (3–USNM). **PUERTO RICO:** San Germán, San Germán, Site 9, EDRR, 18.15118.-66.99364, 3–30.VII.2013, C. Torres and H. Rivera (1–MSUC); EDRR, site 9, 2.VII.2014 (1–MSUC).

**Comments.** Adults of this species may be recognized by the smaller size, by the black color, by the deeply concave, glabrous female frons which bears a fringe of long, incurved setae around the periphery and by the evenly convex elytral declivity of both sexes which bears a median row of long setae in interstriae 1, 3, 5 and 7. The lectotype in the USNM was examined.

### ***Corthylus tuberculatus* Eggers**

Figures 337, 338, 412, 480, 550.

*Corthylus tuberculatus* Eggers 1940: 140; Wood and Bright 1992: 1080; Bright 2014: 267.

**Description (Female).** Length 1.7–2.4 mm, 2.1 times longer than wide; light to dark brown. Frons deeply concave from epistoma to well above eyes and laterally from eye to eye; surface dull, densely minutely reticulate, with abundant, short setae and a fringe of dense, very long, incurved setae extending around periphery of concave area. Antennal club broadly, asymmetrically oval, as long as wide measured at longest and widest points; with three arcuate grooves marking sutures, sutures 1 and 2 narrowly chitinized at lateral margin; posterior face with a cirrus of very long setae arising near base, setae longer than twice club length. Pronotum as long as wide, widest at middle; sides broadly arcuate on basal two-thirds, weakly constricted before broadly rounded anterior margin; anterior margin with a row of four to six obscure, low, closely placed, serrations, median pair slightly larger; anterior one-third of disc convex, with numerous, low, wide asperities; summit not elevated; posterior one-half smooth, dull, densely, minutely reticulate, with exceedingly obscure, widely scattered, very fine, weakly impressed, minute punctures; vestiture sparse. Elytra 1.3 times longer than wide; sides parallel on basal three-quarters, converging to broadly rounded apex; disc shining, glabrous, appearing densely, randomly punctured, with striae and interstriae not evident; surface shining, smooth. Declivity evenly, steeply convex, surface randomly punctured, striae weakly visible, not impressed, punctures weakly impressed; interstriae 1 and 3 weakly elevated, each bearing a row of three to six small to moderately large granules, granules slightly larger in interstriae 3; interstriae 2 as wide as discal width, weakly impressed, unarmed; apical margin slightly elevated.

**Male.** Similar in size and proportions to female. Frons convex, transversely impressed above epistoma, with a small, median elevation; surface dull, densely, minutely reticulate, with minute, scattered punctures. Antennal club smaller, more evenly oval, without a cirrus of long setae. Pronotum with two distinct serrations on anterior margin. Granules on declivital interstriae 3 absent or minute.

**Distribution.** This species occurs throughout the West Indies.

**Specimens examined.** **BARBADOS:** Turner's Hall Woods, 200 m, 5–23.VI.2007, forest flight intercept trap, S. and J. Peck (1–SBPC). **DOMINICA:** Clarke Hall, August 22, 1965, D. M. Anderson (1–USNM); Saint Paul Parish, 1.1 km N Pont Cassé, blacklight trap, 19 June 2004, R. Turnbow (1–RHTC); Saint Peter Parish, Syndicate Trailhead, 28 June 2004, R. Turnbow (2–RHTC); 1220', 5 mi. E Dublanc, 20 Aug. 1988, C. W. and L. O'Brien (1–CNCI). **DOMINICAN REPUBLIC:** Azua, 8 km NE Padre Las Casas, Rio Las Cuevas, 580 m, 18.46N 70.53W, 3–4 October

1991 / C. Young, S. Thompson, R. Davidson, J. Rawlins, riparian growth in arid thorn-scrub (3–CMNH, CNCI); Azua, east side of crest, Sierra Martin Garcia, 7 km WNW Barrero, 18.21N 70.58W, 860 m / 25–26 July 1992, C. Young, R. Davidson, S. Thompson, J. Rawlins, cloud forest adjacent to disturbed forest (3–CMNH); Barahona, 5 km SE Polo, slopes of Loma La Torre, 18.03N 71.16W, 980 m / 18 July 1992, disturbed forest with coffee, C. Young, R. Davidson, S. Thompson, J. Rawlins (1–CMNH); Barahona, 6 km NW Paraiso, Rio Nizao, 18.02N 71.12W, 70 m, 25–26 July 1990, C. Young, J. E. Rawlins, S. A. Thompson (2–CMNH); Barahona, 2 km E Payoso, mercury vapor and blacklight, 13 July 1996, R. Turnbow (1–RHTC); Durate, Reserva Loma Quita Espuela, El Cadillac, 6.7 km NE San Francisco de Macoris, 19.20.12N 70.08.59W / 280 m, 5 Apr 2004, R. Davidson, J. Rawlins, C. Young, weedy regrowth with coffee, cacao, hand collected, Sample 50343 (1–CMNH); Pedernales, 25.5 km N Cabo Rojo, mercury vapor and blacklight, 20 May 1992, R. Turnbow (1–RHTC); Barahona, nr. Filipinas, Larimar Mine, 26.VI-7.VII.1992, R. E. Woodruff; Skelley, F. Skillman, at light (2–RHTC); Barahona, Larimar Mine, nr. Filipinas, 6–11.VII.1993, blacklight trap, R. E. Woodruff, 3300 ft. (1–REWC); Santiago, 1 km NE San Jose de las Matas, 19.21N 70.56W / 540 m, 11 July 1992, J. Rawlins, S. Thompson, C. Young, R. Davidson, disturbed woodland (1–CMNH). **GRENADA:** Saint Andrews Parish, Mirabeau Agriculture Laboratory, various dates in 1990, A. Thomas or R. E. Woodruff, light trap (3–SBPC, CNCI). **GUADELOUPE:** Basse-Terre: NE Pigeon, 16.14404–61.74977, blacklight trap, 18 and 23 May 2012, R. Turnbow (17–RHTC, CNCI); Basse-Terre: Parc National de la Guadeloupe, Corrosol, 7.IX.2010, M. C. Thomas and R. H. Turnbow, blacklight trap (2–FSCA); Gourbeyre (2–AMNH, USNM); 3 km E Pigeon, Bois Malher, N16°10.26, W61°45.10, 25.V.2012, humid forest uv trap, 350 m, S. Peck (1–SBPC). **MARTINIQUE:** 13.VII.2002, Maccuba Sentier pedestre, Roguet, Cauvin, M/Marquet, J. (1–CNCI); 4 km N Ste-Luce, Foret Montravail, 300 m, N14°29.9, W60°55.7 / humid forest flight intercept trap, 11–28.VII.2012, S. Peck, collr. (1–SBPC). **MONTSERRAT:** Cassava Ghaut, Beattie House, 16°45.91'N, 62°12.95'W, various dates in 2002, M. A. Ivie (15–WIBF, CNCI). **PUERTO RICO:** Guaynabo, various dates 1995–2000, light trap, J. Torres (5–CNCI); El Yunque, VIII.1996, light trap, C. Labay (1–CNCI); Boquillo, Sabana, Luquillo, 4.VI.1989, light trap, J. Torres (1–CNCI); Maricao Bosque Estatal de Maricao, 4.3 km S Maricao, 18.08.39N, 66.58.46W, at summit / 890 m, 10–11 June 1996, J. Rawlins, C. Young, R. Davidson, W. Zanol, S. Thompson, M. Klinger (1–CMNH); Rd. 763, km 4.5 jct Caminos, Los Martinez, Caguas, 22.XII.2008, *Pinus caribaea* (1–PRDA); Corozal, *Pinus caribaea* (1–PRDA); San Juan, San Juan, Site 4, EDRR, 18.30471, -66.07043, 19.VI-1.VII.2013, C. Torres and H. Rivera (2–MSUC); Patillas Co., Patillas, Site 6, EDRR, 18.VI-2.VIII.2013, C. Torres and H. Rivera (1–MSUC); Aquidilla Co., UPR Nursery, Site 11, EDRR, 18.49829, -67.13795, 20.VI-3.VIII.2013, C. Torres and H. Rivera (2–MSUC); San Germán, San Germán, Site 9, EDRR, 3–30.VII.2013 (3–MSUC). **SAINT LUCIA:** Barre de L'Isle, 13.934°N, 60.958°W, 285–320 m, various dates in 2009, various collectors (9–WIBF); Bordelais trap site, 185 m, 13.9689°N, 60.8859°W, 25–29 June 2009, M. L. Gimmel and E. A. Ivie (1) and 19–25 June 2009, C. A. Maier and E. A. Ivie (1), uv light (2–WIBF); Gros Piton, 13.81026°N, 61.06525°W, 14–24 May 2009, R. C. Winton and E. A. Ivie (1–WIBF); Quilles For. Res., LaPorte cabin, 272 m, 13.84041°N, 60.97408°W, 04–05 May 2009, uv light, I. A. Foley and R. C. Winton (2–WIBF). **SAINT VINCENT AND THE GRENADINES:** Saint Vincent, Bellisle, 12 November 1976, R. L. Todd (1–USNM); Emerald Valley Hotel, Buccament, various dates in 2007, uv light in dry forest (4–SBPC); Hermitage Forest, E. of Spring Village, 15–27.VIII.2006, forest edge flight intercept trap and Malaise trap, 348 m, S. and J. Peck (4–SBPC); Hermitage, 14 November 1975, C. L. de Freitas (14–USNM, CNCI); Montreal, 11–13 Nov. 1975, R. L. Todd (3–USNM, CNCI); Vermont Nature Trail, 7 km E Buccament, 11.VI.2007, 370 m / rainforest flight interc., S. and J. Peck (1–SBPC).

**Comments.** Adults of this species are very similar to those of *C. papulans* but differ by the much longer and denser setae on the female frons, especially along the upper margin of the frons, by the more deeply impressed declivital interstriae 2, by the slightly larger declivital granules in the declivital interstriae 3 in the female, by the absence of granules (or with very small granules) in declivital interstriae 3 of the male, by the more distinct pair of serrations on the anterior margin of the male pronotum and by the distribution.

The male lectotype in the USNM was examined.

***Corthylus versicolor* Bright, sp. nov.**

Figures 339, 340.

**Type Material.** **HOLOTYPE** (female) labeled: “**DOMIN. REP.**, La Vega, Res. Cient., Ebaro Verde, 19°01.9'W, 70°32.6'W, 04 SEPT 1997, 1000 m: W. Kovarik” / “**HOLOTYPE** *Corthylus versicolor* D. E. Bright 2016” (WIBF [CNCI]). **ALLOTYPE** labeled: “**DOM. REP.**: La Vega Province, P.N.A. Bermudez, Cienaga, 19.VII-2.VIII.95, 1000 m, trop. everg. forest FIT, S. & J. Peck, 95.32” / “**ALLOTYPE** *Corthylus versicolor* D. E. Bright 2016” (SBPC [CNCI]). **PARATYPES** (8): 6 labeled with same data as allotype (CNCI, SBPC); 2 labeled: “**DOMINICAN REPUBLIC:** Puerto Plata, Poco El Murazo, north slope near

summit, 19.41N, 70.57W" / "910 m, 28 Nov 1992, J. Rawlins, R. Davidson, M. Klingler, S. Thompson, Mesic deciduous forest" / "Carnegie Museum Specimen Number CMNH-401.985" (CMNH).

**Description (Female).** Length 2.0–2.3 mm, 2.6 times longer than wide; pronotum, legs, head, ventral surfaces reddish, elytra black to dark reddish black or brown. Frons deeply concave from epistoma to well above eyes and laterally from eye to eye; surface dull, densely minutely reticulate, glabrous, with a fringe of long incurved setae extending completely around periphery of concave area. Antennal club broadly oval, 1.1 times longer than wide measured at longest and widest points; surface aseptate; posterior face with a cirrus of short setae arising near base, setae shorter than one-quarter length of club. Pronotum as long as wide, widest at middle; sides broadly arcuate on basal two-thirds, weakly constricted before broadly rounded anterior margin; anterior margin with a row of eight distinct, low, closely placed serrations, median pair slightly larger; anterior one-third of disc convex, with numerous, low, wide asperities; summit not elevated; posterior one-half smooth, dull, densely, minutely reticulate, with widely scattered, small punctures; glabrous. Elytra 1.5 times longer than wide; sides parallel on basal three-quarters, converging to broadly rounded apex; discal striae not impressed, obscurely punctured in irregular rows, punctures obscure, shallowly impressed; discal interstriae impunctate, shining, glabrous, with numerous fine lines and scratches. Declivity evenly convex; striae obscure, punctures very weakly impressed; interstriae 1 very slightly elevated, with a median row of small granules and moderately long setae; remaining interstriae each with a median row of small granules and long setae; apical margin rounded.

**Male.** Similar in size, proportions and color to female. Frons convex, narrowly transversely impressed above epistoma; surface dull, densely, minutely reticulate, with minute, scattered punctures. Antennal club slightly smaller, more evenly oval, without a cirrus of long setae. Pronotum with two distinct serrations on anterior margin. Elytra as in female, except declivital interstriae 2 often devoid of granules and/or setae.

**Distribution.** This species is known from the type localities in the Dominican Republic.

**Etymology.** From *versicolor*, Latin for of various colors, referring to the color of the adult.

**Comments.** Adults of this species are similar to those of *C. subasperulus* but differ by the color and size as described above. This species appears to be confined to high elevations in the Dominican Republic; all collection records are from near the 1000 foot level.

### Genus *Gnathotrichus* Eichhoff

*Gnathotrichus* Eichhoff 1869: 275; Wood and Bright 1992: 1034; Bright and Skidmore 2002: 353 (checklist); Bright 2014: 270.

Members of *Gnathotrichus* may be recognized by the 4-segmented antennal funicle (pedicel excluded), by the oval antennal club which has two straight to moderately procurved sutures, by the convex to weakly sulcate elytral declivity and by the narrow, elongate, mostly glabrous body.

Bright and Skidmore (2002) list 16 species from North and Central America. One additional species occurs in the West Indies, from the island of Hispaniola. No species are recorded from South America (Wood 2007).

### *Gnathotrichus hispaniolus* Bright, sp. nov.

Figures 413, 481, 551.

**Type Material.** HOLOTYPE (female) labeled: "DOMINICAN REPUBLIC: Pr. La Vega, La Cienega de Manabao, Park Hdqt., 3–5.VII.99, 3000 ft. elev., R. E. Woodruff, blacklight" / "HOLOTYPE *Gnathotrichus hispaniolus* D. E. Bright 2016" (REWC [FSCA]). ALLOTYPE labeled with same data as holotype plus my allotype label (REWC [FSCA]). PARATYPES (29): 14 labeled with same data as holo-

type (REWC, CNCI); 4 labeled: "Hopk. US 32062-D" / "Jarabacoa, R. D., VI.14.40" / "Pinus occidentalis" / "D. DeLeon" (USNM); 2 labeled: "**DOMINICAN REPUBLIC**: Province La Vega, La Cienega, 1100 m, 29 July 1999, at light, M. A. Ivie and K. A. Guererro" (WIBF); 2 labeled: "**DOMINICAN REPUBLIC**: Province La Vega, Monabao, 29 July 1999, M. A. Ivie and K. A. Guerrero, in pine sawmill" (WIBF); 2 labeled: "**DOMINICAN REPUBLIC**: Pedernales, 37 km N Cabo Rojo (18-09N, 71-35W), 1500 m, 11 July 1987, R. Davidson, J. Rawlins" (CMNH); 2 labeled "**DOMINICAN REPUBLIC**: La Vega, vic. Salto de Aguas Blanco, 19 July 1996, R. Turnbow" (RHTC, CNCI); 1 labeled: "**DOMINICAN REPUBLIC**: La Vega, Cordillera Central Loma Casabito, 15.8 km NW Bonao, 19-02-12N, 70-31-08W, 1455 m, 28 May 2003" / "J. Rawlins, C. Young, R. Davidson, C. Nunez: Acevedo, evergreen cloud forest, east slope, uv light" (CMNH); 1 labeled: "**DOMINICAN REPUBLIC**: La Vega, Reserva Cientifica Valle Nuevo, Sector La Nevera, 3 km WNW La Nuez, 2200 m" / "18-42N, 70-36W, 7 October 1991, C. Young, S. Thompson, R. Davidson, J. Rawlins, mesic pine woodland" (CMNH); 1 labeled: "**HAITI**: Port-au-Prince, 25,26-V-1986, M. C. Thomas" (RHTC).

**Description (Female).** Length 3.2–3.4 mm, 3.2 times longer than wide; dark brown to reddish-brown. Frons weakly convex to flat, with a weak, arcuate impression extending above middle; surface smooth, weakly shining, with scattered coarse, shallow punctures. Pregular region swollen, usually projecting slightly forward. Antennal club 1.3 times longer than wide, with a tuft of long setae along lateral margin; funicle with long setae. Pronotum 1.2–1.3 times longer than wide, widest at middle; sides subparallel on basal one-half, anterior margin broadly rounded, with eight, low, broad serrations; summit before middle; anterior slope densely asperate; posterior portion smooth, weakly shining, with scattered, very slightly impressed, minute punctures. Elytra 1.9 times longer than wide; sides parallel on basal three-fourths, apex narrowly rounded; discal striae not impressed, punctures distinct, in regular rows; discal interstriae 2.0 times wider than striae, surface weakly shining, irregular with numerous fine lines and wrinkles, punctures absent. Declivity convex; surface dull, shagreened; interstriae 1 and 2 shallowly impressed; interstriae 3 weakly elevated on upper half, higher than interstriae 1, with two to four small granules; striae punctures distinct, weakly impressed to obsolete; all interstriae (except 2) with a median row of sparse, longer setae.

**Male.** Similar to female except long setae on antennal club absent.

**Distribution.** This species is known from the type localities in the Dominican Republic and Haiti, but probably occurs on all islands where pines naturally occur.

**Etymology.** This species is named for the island of Hispaniola, the type locality of the species.

**Comments.** Adults of this species may be distinguished by the generic characters described above and by the punctured, not aciculate frons, by the weakly elevated and projecting gular area and by the shallowly impressed elytral declivity which bears two to four small granules on the weakly elevated interstriae 3. This is the only species of *Gnathotrichus* known from the West Indies.

Wood (1982) records *G. materiarius* (Fitch) from the Dominican Republic presumably based on the specimens listed above collected by D. DeLeon and deposited in the USNM. These specimens were examined and are conspecific with the other specimens seen and are designated paratypes of *G. hispaniolus*. It is reasonable to assume that *G. materiarius* may occur on the West Indies islands where pines occur naturally since this species is common in the eastern United States south to Florida and Texas. Adults of *G. materiarius* may be recognized by the evenly convex elytral declivity on which interstriae 1 and 2 are not impressed (or very weakly so), by interstriae 3 is not elevated and bears very minute granules (granules often absent) and by the more distinct striae punctures.

This species is an ambrosia beetle and constructs tunnels deep in the wood of various species of pines.

**Genus *Gnathotrupes* Schedl**

*Gnathotrupes* Schedl 1951: 125; Wood and Bright 1992: 1039; Bright and Skidmore 2002: 354 (checklist); Bright 2014: 271.

Members of this genus may be distinguished from those in *Gnathotrichus* by the chitinized and glabrous basal half of the antennal club, the margin of basal area is procurved and the remainder of club (apical half) is densely pubescent, by the narrow, very slightly widened distally protibia, with two denticles on the anterior margin and a long curved spine at the apex and by the elongate pronotum (1.6 times longer than wide) with the anterior margin unarmed.

Thirty-one species are listed in Bright and Skidmore (2002), distributed from Mexico to South America. One species occurs in the West Indies.

Wood (2007) states that all observed species breed in dicotyledonous angiosperm hosts. All species are xylomycetophagous and monogynous.

***Gnathotrupes megapunctatus* Bright, sp. nov.**

Figures 482, 552.

**Type Material.** **HOLOTYPE** (sex?) labeled: “**GRENADA:** Grand Etang N. P., Mt. Qua Qua Trail., IX.10.1991, C. W. and L. B. O’Brien” (CNCI). **PARATYPES** (2): 1 labeled: “**DOMINICAN REPUBLIC:** Province Pedernales, km. 24 N Cabo Rojo, 11.VI.1998, 3000 ft., blacklight trap, R. E. Woodruff: Freytag” (FSCA); 1 labeled: “**VENEZUELA:** Miranda, Guatopo NP, 30–40 km N Altagracia, 3–11.VI.1987, 400–700 m, S. and J. Peck, for. road evening carnet” (SBPC).

**Description (sex?).** Length 2.4 mm, 3.6 times longer than wide; reddish-brown. Frons convex, shining, with scattered, very fine punctures and setae; each mandible with a large, blunt, rounded projection at base. Antennal club slightly longer than wide; basal half chitinized, glabrous, distal margin of basal area strongly procurved; apical half densely pubescent, sutures obsolete. Pronotum 1.6 times longer than wide, 0.6 times shorter than elytra; sides parallel on basal three-fourths, apex broadly rounded, with a very fine, acute, weakly broken line; anterior fourth densely asperate; summit located on anterior fourth, not elevated; posterior three-fourths smooth, shining, with scattered, fine punctures, these separated by a distance 2.0–3.0 or more times their diameters. Elytra 1.5 times longer than wide; sides parallel to base of declivity, broadly rounded, almost truncate at apex; apex not notched at suture; discal striae not impressed, punctured in regular rows, punctures large (except on 1); discal interstriae narrow, less than half as wide as striae, each with a median row of long setae, these much longer at declivital base. Declivity deeply sulcate, upper margin rounded, with a few, very small, acute granules at base in interstriae 1 and 3; median portion of lateral margin slightly, acutely elevated, crest of elevation with two or three rounded granules; lower third of margin with a large, quadrate elevation, this elevation as long as basal width; declivital face shining, punctures as on disc, with a pair of small, acute granules on upper third in interstriae 2; vestiture slightly longer than length of principal marginal elevation.

**Distribution.** This species is known from the type localities in the Dominican Republic, Grenada and Venezuela.

**Etymology.** From *mega-*, Greek for large, and *punctura*, Latin for puncture, referring to the large punctures in the discal striae.

**Comments.** Adults of *G. megapunctatus* can be easily recognized by the generic characters mentioned above. It is the only species of this genus so far known from the West Indies. Paratypes range in length from 2.2–2.4 mm but otherwise are very similar to the holotype.



**Figures 337–345.** Adult features of *Corthylus* and *Microcorthylus* spp. **337)** *C. tuberculatus* (declivity). **338)** *C. tuberculatus* (antennal club). **339)** *C. versicolor* (declivity). **340)** *C. versicolor* (frons and mandibles). **341)** *M. brevis* (declivity). **342)** *M. brevis* (antennal club). **343)** *M. insularis* (declivity). **344)** *M. insularis* (antennal club). **345)** *M. minutissimus* (declivity).

### Genus *Microcorthylus* Ferrari

*Microcorthylus* Ferrari 1867: 58; Wood and Bright 1992: 1065; Bright and Skidmore 2002: 384 (check-list); Bright 2014: 274.

Members of *Microcorthylus* may be distinguished by the rounded lateral margin of the pronotum, by obscurely punctured pronotal and elytral surfaces, by the steep, triangularly impressed elytral declivity which bears two small, acute granules on the lateral margin and by the simple antennal club which bears

two weakly arcuate to straight sutures. The posterior face of the female antennal club bears a sparse brush of longer setae, the male does not bear any distinctly longer setae.

This genus contains 42 species, all from the Neotropical area (Wood and Bright 1992, Wood 2007). Three species occur in the West Indies.

### Key to the species of *Microcorthylus* in the West Indies

1. Length 1.2–1.3 mm; posterior face of female antennal club bearing a tuft of long setae, these extending beyond apex of club; anterior margin of pronotum bearing six to eight very small serrations (female) or moderately large serrations (male); Greater Antilles ..... *M. minutissimus* Schedl (p. 413)
  - Length 1.3–1.8 mm; posterior face of female antennal club not bearing a tuft of long setae; anterior margin of pronotum either bearing a single acute serration or bearing six to eight serrations, median pair larger; Lesser Antilles ..... **2**
- 2(1). Anterior margin of pronotum bearing six to eight serrations, median pair usually larger; anterior half of pronotum dark brown, remainder of pronotum and elytra light brown; length 1.5–1.8 mm; Guadeloupe to Martinique ..... *M. brevis* Eggers (p. 412)
  - Anterior margin of pronotum either without serrations (female) or with one large, acute serration with several much smaller serrations on each side; pronotum uniformly light brown; length 1.3–1.6 mm; Saint Lucia ..... *M. insularis* Bright, sp. nov. (p. 413)

### *Microcorthylus brevis* Eggers

Figures 341, 342, 483, 553.

*Microcorthylus brevis* Eggers 1935: 155; Wood and Bright 1992: 1065.

**Description (Female).** Length 1.5–1.8 mm, 2.5 times longer than wide; anterior half of pronotum dark brown, remainder of pronotum and elytra light brown. Frons convex, finely reticulate and dull on lower portion from epistomal margin to upper eye level, smooth and shining above. Antennal club ovate, 1.2 times longer than wide, widest at distal portion, bearing two transverse sutures, these chitinized through entire length; posterior face without long setae. Pronotum 1.2 times longer than wide; straight on posterior three-quarters; anterior margin bearing six to eight, very small serrations; anterior slope bearing small, weakly elevated, shining asperities, surface between asperities minutely reticulate, opaque; posterior and lateral portions smooth, minutely reticulate, opaque, without visible punctures. Elytra 1.5 times longer than wide, 1.3 times longer than pronotum; sides very weakly arcuate, apex broadly rounded; entire surface minutely reticulate, with faint, randomly placed, shallow punctures, these usually not arranged into stria rows but occasionally very faint stria rows can be detected. Declivity steep, broadly, triangularly impressed; lateral margins of impression diverging away from suture, bearing two minute, acute granules; declivital face slightly concave, finely reticulate, impunctate; apex broadly rounded, weakly notched at suture, apical margin subacute.

**Male.** Similar in size and proportions to female; anterior margin of pronotum bearing six to eight, distinct serrations, median pair often longer than others; frons very slightly more convex above epistoma with surface very slightly more reticulate; asperities on anterior slope of pronotum very slightly larger, more erect.

**Distribution.** This species is known from Guadeloupe to Martinique.

**Specimens examined. DOMINICA:** 3 miles E. Pont Casse, 7–8.XI.1965 / Bredin-Archbold-Smithsonian Bio. Surv. Dominica (1–USNM); 2.5 to 3.5 km W. Freshwater Lake, Morne Tres Piton National Park, 6.23.2004 / C. W. and L. B. O'Brien (1–CNCI); 5 mi. E. Dublanc, 1250', 16 Aug. 1986, C. W. and L. B. O'Brien (4–CNCI). **GADELOUPE:** Domain Duclas, Petit Bourg, Castarel Forest, 22–30.III.1977, W. H. Whitcomb, Malaise trap (4–FSCA, CNCI); Island record only (3–AMNH, MNHN, NHMW). **MARTINIQUE:** 12 km N. Fort de France (N-3), May 18, 1985, C. W. and L. B. O'Brien (1–CNCI).

**Comments.** Adults of this species are similar to those of *M. insularis* but are distinguished by the slightly larger size, by the different color pattern, by the presence of obscure serrations on the anterior pronotal margin, by the differences on the frons as brought out in the respective descriptions and by the distribution.

***Microcorthylus insularis* Bright, sp. nov.**

Figures 343, 344.

**Type Material.** **HOLOTYPE** (female) labeled: “WEST INDIES: **ST. LUCIA**, Piton Flores, 532 m, 13°96’N, 60°94’W, 6.VII.2009” / “In fresh broken branch, D. E. Bright, collr.” / “HOLOTYPE *Microcorthylus insularis* D. E. Bright 2016” (CNCI). **ALLOTYPE** labeled with same data as holotype plus my allotype label (CNCI). **PARATYPES** (35): 18 labeled with same data as holotype (CNCI, WIBF); 16 labeled: “WEST INDIES: **ST. LUCIA**, La Porte Forest Trail, 13°84’N, 60°97’W, 11.VII.2009, 272 m” / “In broken branch, D. E. Bright, collr.” (CNCI, WIBF); 1 labeled: “**ST. LUCIA**: Barre de L’Isle, 13.93682°N, 60.95936°W, 29 JUNE-03 JULY 2009, 340 m, uv light trap, C. A. Maier, M. L. Gimmel” (WIBF).

**Description (Female).** Length 1.3–1.6 mm, 2.5 times longer than wide; light brown. Frons convex, finely reticulate over entire surface, sometimes with a smoother, more shining median spot is evident at upper level of eyes. Antennal club ovate, 1.5 times longer than wide, bearing two transverse, slightly arcuate sutures, these chitinized at lateral margins; without long setae on posterior face. Pronotum 1.2 times longer than wide; sides straight on posterior two-thirds; anterior margin broadly rounded, without serrations; anterior slope bearing weakly elevated, low asperities, surface between asperities opaque; posterior and lateral portions opaque, finely reticulate, without punctures. Elytra 1.3 times longer than wide; sides very weakly arcuate, apex nearly truncate; entire discal surface dull, minutely reticulate, striae not evident, punctures exceedingly faint; interstriae not evident. Declivity steep, broadly, deeply, triangularly sulcate; lateral margins diverging away from suture, bearing two, very small, equal sized, acute, curved granules, the lowest granule placed at middle of declivity and a very small, acute granule at upper level near suture; declivital face finely reticulate, impunctate; apex rounded, notched at suture.

**Male.** Similar in size and proportions to female. Anterior margin of pronotum bearing one large, acute serration and one or two much smaller serrations on each side; asperities on anterior slope of pronotum larger, more erect; declivital granules slightly larger.

**Distribution.** This species is known from the type localities in Saint Lucia.

**Etymology.** From *insularis*, Latin for island.

**Comments.** The adults of this species resemble those of *M. brevis* but are distinguished by the different color pattern, by the slightly smaller size, by the lack of serrations on the pronotal margin of the females, by the presence of a single, large serration on the pronotal margin of the male and by the other characters mentioned in the above key.

***Microcorthylus minutissimus* Schedl, Resurrected Name**

Figure 345.

*Microcorthylus minutissimus* Schedl 1952: 361; Wood and Bright 1992: 1066 (as a synonym of *M. minimus* Schedl).

**Description (Female).** Length 1.2–1.3 mm, 2.8 times longer than wide; light brown, anterior portion of pronotum and declivity somewhat darker. Frons convex, finely reticulate over entire surface, sometimes a smoother, more shining median spot is evident at upper level of eyes. Antennal club ovate, 1.4 times longer than wide, bearing two transverse, slightly arcuate sutures, these chitinized at lateral margins; long setae on posterior face extending beyond margin a distance less than half the length of the club. Pronotum 1.1 times longer than wide; sides weakly arcuate; anterior margin broadly rounded, weakly serrate; anterior slope bearing weakly elevated, low asperities, surface between asperities opaque; poste-

rior and lateral portions opaque, finely reticulate, punctures very faint, shallow, widely separated. Elytra 1.7 times longer than wide; sides very weakly arcuate, apex nearly truncate; striae not impressed, punctures faint, shallow; interstriae flat, dull, finely reticulate. Declivity steep, broadly, shallowly sulcate; lateral margins diverging away from suture, bearing two, fine, equal sized, acute, curved spines, the lowest spine placed at middle of declivity and a very small, acute spine is usually visible at upper level near suture; declivital face finely reticulate, impunctate; apex rounded, notched at suture.

**Male.** Similar in size and proportions to female, except antennal club without long setae on posterior face; asperities on anterior slope of pronotum larger, more erect; declivital spines slightly larger.

**Distribution.** This species is known from Cuba, Dominican Republic and Jamaica.

**Specimens examined.** **CUBA:** Cayamas, E. A. Schwarz (2-USNM). **DOMINICAN REPUBLIC:** Province La Vega, ca 10 km E. Constanza, 1295 m, 31 August 1988, beating pine-guava forest, M. A. Ivie, T. K. Philips and K. A. Johnson (1-WIBF). **JAMAICA:** Saint Andrew Parish, Hardwar Gap, 4000', 25 July 1966, Howden and Becker (2-CNCI); Trelawny Parish, Barbecue Bottom, VIII.2.1966, H. F. Howden (1-CNCI); Trinityville, II.28.39 / Chapin and Blackwelder (1-USNM).

**Comments.** Wood (1957) placed this species name in synonymy under *M. minimus* Schedl. My examination of specimens from the Greater Antilles and type material of both names showed that this synonymy was in error. The elytral declivity of males of *M. minimus* is very shallow and bears three small, acute granules on each of the elevated lateral margins, while the elytral declivity of males of *M. minutissimus* is much more deeply impressed and bears two, small acute granules on each of the elevated lateral margins. As a result of the synonymy, the distribution of each species is difficult to untangle. Evidently, *M. minimus* occurs in Brazil (Wood 2007), while *M. minutissimus* occurs in the Greater Antilles, southern Mexico and Central America (Atkinson and Equihua 1988, Equihua and Atkinson 1986, Wood 1982). The illustration of "*M. minimus*" in Atkinson and Equihua (1988) fits my interpretation of *M. minutissimus*.

Adults of this species may be recognized by the small size, by the deeply impressed elytral declivity and by the presence of two small, acute granules on the lateral margins of the declivity.

### Genus *Monarthrum* Kirsch

*Monarthrum* Kirsch, 1866: 213; Wood and Bright 1992: 1050; Bright and Skidmore 2002: 385 (checklist); Bright 2014: 276.

Members of this genus may be distinguished by the apparent lack of an antennal funicle, by the weakly separated or contiguous procoxae, by the anterior wall of the combined coxal cavities and by the moderately large precoxal piece which is posteriorly angulate and occupies the anterior portion of the area between the coxae and by the inflated anterior tibiae that bear numerous, small granules on the posterior face. The female antennal club bears a tuft of long setae on the posterior face, this tuft is absent on the male club.

Bright and Skidmore (2002) report 132 species, all in the New World tropics and subtropics; Wood (2007) adds 26 additional species from South America. Eight species are herein reported from the West Indies.

All species of this genus are xylomycetophagous, breeding in broken or injured boles, limbs or large branches of numerous species of forest trees. Some smaller specimens breed in small twigs (Wood 2007).

Wood (2007) comments that identification of the various species in this genus is unusually difficult and I concur. Sexual dimorphism is very pronounced and specimens of both sexes are often needed for proper identification. However, as noted by Wood (2007), often one sex is available since most specimens are collected, not from host plants, but by passive trapping methods or at light. Most species before me are represented by one sex.

This genus is almost certainly polyphyletic and contains a number of distinct and quite different species groups. Among the limited fauna of the West Indies, *M. bullatum* forms one group, *M. mali*, *M.*

*brittoni* and *M. ambiguum* form a second group and the remainder of species form a third group, each morphologically quite different from each other but united by the generic characters mentioned above.

### Key to the species of *Monarthrum* in the West Indies

1. Elytral declivity of female steeply sulcate, lateral margins of declivity elevated, rounded; declivital excavation of female with a very large, blunt elevation on inner face at middle of lateral margin, no other spines or granules on declivity; female antennal club triangular, with a curved brush of long setae; length 2.8 mm, 2.8 times longer than wide; Dominican Republic ..... *M. bullatum* Bright, sp. nov. (p. 418)
- Elytral declivity of both sexes steep and flat or convex with interstriae 1 impressed and declivital face bearing two small granules; other characters not as above ..... 2
- 2(1). Elytral declivity steeply declivous, flat, with a large, blunt spine (female) or a smaller, acute granule (male) in middle of declivital face; lateral circumdeclivital margin of declivity acute from suture to or above level of spine in middle of declivital face; antennal club of both sexes narrowly oval ..... 3
- Elytral declivity basically convex, with interstriae 1 impressed and with two small, equal sized granules on declivital face in both sexes; apex of elytra acutely margined from suture to level of lower granule; lateral margin of declivity rounded; antennal club of both sexes broadly oval ..... 6
- 3(2). Adults smaller and stouter, 1.9–2.1 mm in length, 2.6–2.7 times longer than wide; female frons dull, minutely reticulate, with punctures in reticulate area obscure, with a smooth, slightly elevated, impunctate, median space above epistoma; spine in middle of declivital face of male very small, equal in size to spine at declivital base; Saint Lucia ..... *M. ferrugineum* Bright, sp. nov. (p. 420)
- Adults larger and more elongate, larger than 2.1 mm, 3.0 times longer than wide; female frons dull to moderately shining, with very small, widely separated, impressed, minute punctures; spine in middle of declivital face of male larger, distinctly larger than spine at declivital base ..... 4
- 4(3). Length 2.8 mm; frons of female convex, very slightly flattened on lower portion below upper eye level, shining and densely punctured above, minutely reticulate and dull on lower portion; setal brush on posterior surface of antennal club sparse; antennal club broad, with two distinct transverse sutures; Dominican Republic ..... *M. collinum* Bright, sp. nov. (p. 419)
- Length 2.2–2.3 mm; frons of female convex, narrowly, transversely impressed just above epistoma; setal brush on posterior surface of antennal club of female dense; antennal club narrowly-oval, sutures indistinct ..... 5
- 5(4). Frons of female evenly convex, shining, reticulate, with minute, fine, scattered, minute punctures; length 2.2 mm; Dominica, Guadeloupe, Montserrat ..... *M. antillicum* Bright, sp. nov. (p. 416)
- Frons of female convex, dull, densely minutely reticulate, with an elevated, transversely oval, flattened, median elevation located halfway between epistomal margin and upper level of eyes; length 2.3 mm; Guadeloupe ..... *M. discordum* Bright, sp. nov. (p. 419)
- 6(2). Female frons convex, smooth, weakly shining and obscurely punctured on vertex above upper eye level, weakly reticulate with distinct, shallow punctures below upper eye level; length 1.9 mm; Bahamas ..... *M. ambiguum* Bright, sp. nov. (p. 416)
- Female frons weakly convex, densely reticulate, dull, without distinct punctures, male frons similar but may have obscure punctures ..... 7

- 7(6). Female frons narrowly transversely impressed above epistoma with a shining, median tubercle just above epistomal margin; male frons densely reticulate, with small but distinct punctures; female body color often very distinctly bicolored with extensive areas of very dark brown on elytral apex, male often uniformly light brown; length 2.2–2.4 mm; from higher elevations in Cuba, Dominica and Jamaica ..... *M. brittoni* (Schedl) (p. 417)
- Female frons not distinctly transversely impressed above epistomal margin, usually devoid of a distinct, median tubercle; male frons very similar to female; body color often much less distinctly bicolored; length 1.7–2.1 mm; generally distributed in the West Indies ..... *M. mali* (Fitch) (p. 420)

***Monarthrum ambiguum* Bright, sp. nov.**

Figure 346.

**Type Material.** HOLOTYPE (female) labeled: “BAHAMAS: Andros I., Fresh Crk., Andros Twn. Androsia, 09.VII.1987, J. Browne, high interior coppice blk. lt, 87.64J” / “HOLOTYPE *Monarthrum ambiguum* D. E. Bright 2016” (CNCI).

**Description (Female).** Length 1.9 mm, 3.0 times longer than wide; anterior 1/3rd of pronotum and posterior one-third of elytra dark brown, remainder of pronotum and elytra, legs, head and ventral surfaces light brown. Frons convex, very weakly, narrowly, transversely impressed above epistomal margin; surface moderately shining, finely reticulate on area below upper margin of eyes and distinctly but weakly punctured, area above upper level of eye smoother with similar punctures. Pronotum 1.4 times longer than wide; sides straight, parallel on basal three-fourths; anterior margin broadly rounded, unarmed; anterior one-third declivous, with small, weakly elevated asperities; posterior two-thirds smooth, dull, densely reticulate. Elytra 1.7 times longer than wide, 1.2 times longer than pronotum; sides straight, parallel on basal four-fifths, each elytron separately broadly rounded at apex; sutural notch acute; discal surface dull, densely, minutely reticulate, glabrous; discal striae weakly, shallowly impressed in obscure rows; discal interstriae slightly wider than striae. Declivity convex; suture impressed below general level of elytral surface; two acute tubercles located in a parallel line on each side of suture; apex rounded, acutely margined by a fine raised line, notched at sutural apex.

**Male.** Unknown.

**Distribution.** This species is known from the type locality from the Andros Island in the Bahamas.

**Etymology.** From *ambiguous*, Latin for uncertain or doubtful.

**Comments.** Females of this species are similar to those of *M. brittoni* and *M. mali*, but differ by the presence of distinct, shallow punctures on the frons. The male is unknown.

***Monarthrum antillicum* Bright, sp. nov.**

Figures 347, 348, 414.

**Type Material.** HOLOTYPE (female) labeled: “DOMINICA: Fortune, VIII.20.1964, T. J. Spilman” / “Bredin-Archbold Smithsonian Survey” / “in log of fallen *Euterpe dominicana*” / “HOLOTYPE *Monarthrum antillicum* D. E. Bright 2016” (USNM). ALLOTYPE labeled with same data as holotype plus my allotype label (USNM). PARATYPES (16): 1 labeled with same data as holotype (USNM); 1 labeled: “DOMINICA: Middleham Falls Trail, Cochrane, N15°20.922' W61°20.747', 650 m, forest FITS, 31.V-11.VI.2004, S. and J. Peck 04–93” (SBPC); 1 labeled: “DOMINICA: Freshwater Lake, 21 Jan. 1965, W. W. Wirth” / “Bredin-Archbold Smithsonian Survey” (USNM); 1 labeled: “DOMINICA: Freshwater Lake, IX.4.1964, T. J. Spilman” / “Bredin-Archbold Smithsonian Survey” (USNM); 2 labeled: “DOMINICA: D’Leau Gommier, II.15.1965, 1400', H. E. Evans” (USNM, CNCI); 1 labeled: “DOMINICA: 5 km NE Roseau, Springfield Plantation, 6.28.2004, C. W. O’Brien” (CNCI); 1 labeled: “DOMINICA: Saint Paul Par., 1.1 km N Pont Cassé, 21 June 2004, R. Turnbow” (RHTC); 2 labeled: “DOMINICA: Saint George Par., 1.5–3.5 km W Freshwater Lake, 23.June 2004, R. Turnbow” (RHTC, CNCI); 1 labeled: “MONTserrat: Katy Hill

Trail above heli pad, 14 Aug 2005, 2300', I. A. Foley colr." (WIBF); 1 labeled: "GUADELOUPE: Basse T., Gourbeyre, Palmiste, 05–20 Jan 2003, J. Touroult" (WIBF); 1 labeled: "GUADELOUPE: BT., Fefe Forest, near Capesterre, V.25.1985, C. W. and L. B. O'Brien" (CNCI); 3 labeled: "GUADELOUPE: Gourbeyre, Acc.4860" (AMNH).

**Description (Female).** Length 2.2 mm, 3.0 times longer than wide; color similar to *M. collinum* except boundaries between colors less distinct. Frons evenly convex, narrowly, transversely impressed just above epistomal margin; surface dull, densely minutely reticulate, with very obscure, weakly impressed, scattered punctures. Antennal club narrowly elongate-oval, 2.3 times longer than wide, widest at distal end, with two indistinct, transverse sutures, these chitinized at lateral margins, each segment with a dense brush of long, curved setae along margin, these extending well beyond apex of club. Pronotum 1.3 times longer than wide; sides parallel on basal two-thirds, anterior margin broadly rounded, with an acutely elevated, slightly undulating line, serrations absent; anterior one-third steeply declivous, with numerous, moderately elevated asperities, these becoming slightly larger toward anterior margin; posterior half of disc smooth, dull, densely, minutely reticulate, without. Elytra 1.6 times longer than wide, 1.2 times longer than pronotum; discal surface dull, densely minutely reticulate, without discernable striae punctures except very vague striae punctures are discernable on lateral portions. Declivity occupying apical one-sixth of elytra, steep, basically flat, with suture impressed; face with two small, acute granules, one in middle, equidistant between suture and lateral margin and equidistant from base and apex, another on base at base of what should be interstriae 3?; lateral margins slightly, acutely elevated from sutural apex to level of granule in middle of declivital face, rounded above, unarmed; remainder of surface dull, reticulate; scattered setae present.

**Male.** Similar in size and proportions to female. Frons convex, dull, densely reticulate; epistomal margin with a pair of small, median, rounded granules. Antennal club smaller, as long as wide, without a brush of long setae. Pronotum as in female except anterior margin distinctly serrate. Elytra as in female. Declivity basically as in female except lateral margins with an acute line extending from sutural apex to base of small granule on declivital base and spine in middle of declivital face much longer, distinctly longer than width at base.

**Distribution.** This species is known from the type localities in Guadeloupe, Dominica and Montserrat.

**Etymology.** This species is named for the Antilles region.

**Comments.** Females of this species are very similar to those of *M. discordum* but differ by the absence of an oval swelling or elevation on the shining, evenly convex frons. Males may be distinguished by the much longer spine on the declivital face and by the presence of a pair of small rounded granules on the epistomal margin. Other characters are mentioned in the diagnosis above.

### *Monarthrum brittoni* (Schedl)

Figure 350.

*Pterocyclon brittoni* Schedl 1970: 101.

*Monarthrum brittoni*: Wood and Bright 1992: 1052.

**Description (Female).** Length 2.2–2.4 mm, 3.2 times longer than wide; light yellow-brown on posterior half of pronotum, anterior discal portion of elytra, legs, antennae and ventral surface, dark brown on head, anterior half of pronotum and apical portion of elytra. Frons evenly convex, transversely impressed on each side of an elevated, smooth tubercle located just above epistoma; surface opaque, evenly reticulate; vestiture consisting of very few, short, hairlike setae along epistomal margin. Antennal club ovate, 1.1 times longer than wide; two visible sutures slightly arcuate, transverse, chitinized; long setae on posterior face extending beyond apex a distance equal to half the length of the club. Pronotum 1.4 times longer than wide; sides parallel on posterior two-thirds; anterior margin broadly rounded, unarmed; anterior slope bearing small, low asperities, surface between asperities minutely reticulate; posterior and lateral portion opaque, finely reticulate, bearing a few, extremely fine, shallow punctures. Elytra

1.8 times longer than wide; sides weakly arcuate, posterior margin sharply, deeply emarginate at sutural apex; striae not impressed, punctured in nearly regular rows but confused near suture, punctures small, shallow, widely spaced; interstriae flat, surface dull, evenly, finely reticulate, punctures space, apparently a little larger than those on striae. Declivity convex; suture impressed below general level of elytral surface; two acute tubercles located in a parallel line on each side of suture; apex rounded, acutely margined by a fine raised line, notched at sutural apex.

**Male.** Similar in size, proportion and color to female. Frons evenly convex, faintly punctured, lacking the elevated, smooth tubercle and transverse impressions; antennae narrower, lacking the long setae on posterior face; asperities on anterior slope of pronotum larger, more elevated; declivital granules slightly larger.

**Distribution.** This species is known from high elevations on Jamaica.

**Specimens examined. JAMAICA:** Corn Puss Gap, Saint Thomas-Portland Parish line, 2200 ft., June 27, 1954, in humus and soil under Santa Maria (*Calophyllum jacguinii*) trees: F. Bellinger (1-NHFW); Saint Andrew Parish, Hardwar Gap, 4000', 2–29 July 1966, Howden and Becker (67-CNCI); Portland Parish, 1 km E of Hardwar Gap, 21.VIII.1980, 1100 m, A. Norrbom / under bark of fallen tree (86-CMNH, CNCI); Silver Hill, C, 12–14.V.1981, sticky board (1-USNM).

**Comments.** Adults of this species are very similar to those of *M. mali* but the females may be recognized by the presence of a small granule just above the impressed groove above the epistomal margin.

The holotype was examined and compared to my material.

***Monarthrum bullatum* Bright, sp. nov.**

Figure 349.

**Type Material. HOLOTYPE** (female) labeled: “DOMINICAN REPUBLIC: Puerto Plata, Pico El Murazo, north slope near summit, 19.41N, 70.57W” / “910 m, 28 Nov 1992, J. Rawlins, R. Davidson, M. Klinger, S. Thompson, Mesic deciduous forest” / “Carnegie Museum Specimen Number CMHN-348,690” / “HOLOTYPE *Monarthrum bullatum* D. E. Bright 2016” (CMNH).

**Description (Female).** Length 2.8 mm, 2.8 times longer than wide; yellowish-brown, slightly darker in declivital excavation and on anterior portion of pronotum. Frons largely concealed by antennal clubs, convex, smooth, without visible modifications. Antennal club large, roughly triangular, 1.4 times longer than wide, with two distinct, transverse sutures, these chitinized at lateral margins, each segment with a brush of long, curved setae along margin, these extending well beyond apex of club. Pronotum 1.3 times longer than wide; sides parallel on basal two-thirds, anterior margin narrowly rounded, with an acutely elevated line, serrations absent; anterior one-third steeply declivous, with numerous, low asperities, these becoming slightly larger toward anterior margin; posterior half of disc smooth, shining, minutely reticulate, with exceedingly small, fine, widely separated punctures. Elytra 1.8 times longer than wide, 1.35 times longer than pronotum; discal striae very slightly impressed, punctured in even rows, punctures distinct, large, not impressed; discal interstriae very weakly convex, surface dull, very finely, minutely reticulate, glabrous. Declivity occupying apical third of elytra, deeply sulcate, lateral margins slightly elevated, rounded, unarmed; inner slope of each margin bearing a large, rounded, bulbous swelling; setae present in excavation, these abundant, longer than swellings.

**Male.** Unknown.

**Distribution.** This species is known from the type locality in the Dominican Republic.

**Etymology.** From *bullatus*, Latin for swelling or inflated, referring to the large swellings on the elytral declivity.

**Comments.** Females of this species may be easily distinguished by the slender body shape and by the pair of large, rounded, bulbous swellings on the inner slopes of the margins of the elytral excavation.

***Monarthrum collinum* Bright, sp. nov.**

Figure 351.

**Type Material.** HOLOTYPE (female) labeled: "DOMINICAN REPUBLIC: Province Barahona, Larimar Mine, Filipinas, 3300 ft., 16–17.XII.1995, blacklight trap, R. E. Woodruff" / "HOLOTYPE *Monarthrum collinum* D. E. Bright 2016" (REWC [FSCA]).

**Description (Female).** Length 2.8 mm, 2.8 times longer than wide; antennae, elytral disc and base of pronotum light brown, head, anterior half of pronotum, lateral margin of elytra and elytral apex dark brown. Frons convex, very weakly flattened above epistomal margin, upper surface above upper eye level shining, with scattered, fine punctures, lower half dull, densely minutely reticulate; epistomal margin bearing a very small, median granule. Antennal club oval, 1.5 times longer than wide, with two distinct, transverse sutures, these chitinized at lateral margins, each segment with a brush of long, curved setae along margin, these extending well beyond apex of club. Pronotum 1.2 times longer than wide; sides parallel on basal two-thirds, anterior margin broadly rounded, with an acutely elevated line, serrations very low, almost indistinguishable; anterior one-third steeply declivous, with numerous, moderately elevated asperities, these becoming slightly larger toward anterior margin; posterior half of disc smooth, moderately shining, densely, minutely reticulate. Elytra 1.6 times longer than wide (elytra separated), 1.35 times longer than pronotum; discal striae not impressed; striae and interstriae equally punctured, punctures distinct, moderately large, not impressed, giving disc appearance of randomly punctured, but striae distinguishable by slightly more regular rows of punctures; discal interstriae dull, very finely, minutely reticulate, glabrous. Declivity occupying apical one-sixth of elytra, steep, basically flat, with striae 1 very weakly impressed; face with two very small granules, one in middle, equidistant between suture and lateral margin and equidistant from base and apex, another at base of interstriae 2 or 3; lateral margins slightly, acutely elevated from sutural apex to level of granule in middle of declivital face, rounded above, unarmed; scattered setae present.

**Male.** Unknown.

**Distribution.** This species is known from the type locality in the Dominican Republic.

**Etymology.** From *collinus*, Latin for of a hill or mountain, referring to the habitat of the species.

**Comments.** Females of this species may be similar to those of *M. antillicum* but differ by the larger size and by the much smaller granules on the declivital face.

***Monarthrum discordum* Bright, sp. nov.**

Figure 352.

**Type Material.** HOLOTYPE (female) labeled: "GUADELOUPE: BT., Fefe Forest, near Capesterre, V.25.1985, C. W. and L. B. O'Brien" / "HOLOTYPE *Monarthrum discordum* D. E. Bright 2016" (CNCD).

**Description (Female).** Length 2.3 mm, 3.1 times longer than wide; color similar to *M. collinum*. Frons as in *M. antillicum* except for the presence of a median, transversely oval elevation located midway between epistomal margin and upper eye level, surface dull, densely minutely reticulate, without discernable punctures. Antennal club as in *M. antillicum*. Pronotum and elytra as in *M. antillicum*. Declivity as in *M. antillicum*.

**Male.** Unknown.

**Distribution.** This species is known from the type locality in Guadeloupe.

**Etymology.** From *discors*, Latin for different or unlike.

**Comments.** Females of this species differ from *M. antillicum* by the presence of an oval, median elevation on the duller convex frons.

***Monarthrum ferrugineum* Bright, sp. nov.**

Figure 353.

**Type Material.** **HOLOTYPE** (female) labeled: “WEST INDIES: **SAINT LUCIA**: II.1978, S. Marshall” / “HOLOTYPE *Monarthrum ferrugineum* D. E. Bright 2016” (CNCI). **ALLOTYPE** labeled: “WEST INDIES: **Saint Lucia**, Mon Repos, 6.5 km W Fox Grove Inn, 10–28.VI.2007, submontane forest FIT, 300 m, S. and J. Peck” / “ALLOTYPE *Monarthrum ferrugineum* D. E. Bright 2016” (SBPC [CNCI]). **PARATYPES** (3): 1 labeled with same data as allotype (SBPC); 1 labeled: “**SAINT LUCIA**: Quilles For. Res., La Port Cabin, 272 m, 13.84041°N, 60.97408°W, 05–07 MAY 2009, uv light, I. A. Foley and R. C. Winton” (WIBF); 1 labeled: “**SAINT LUCIA**, Piton Flores, 532 m, 13°96’N, 60°94’W, 3.VII.2009” / “in broken branch, D. E. Bright, collr.” (CNCI).

**Description (Female).** Length 1.9–2.1 mm, 2.6–2.7 times longer than wide; head, declivity and anterior portion of pronotum dark brown, basal half of pronotum and elytral disc light-brown. Frons evenly convex; surface dull, densely minutely reticulate and with scattered, large, weakly impressed punctures and a smooth, median, shining space; very narrowly, transversely impressed just above epistomal margin. Antennal club narrowly elongate-oval, 2.0 times longer than wide, widest at distal end, with two indistinct, oblique sutures, these chitinized at lateral margins, each segment with a dense brush of long, curved setae along margin, these extending well beyond apex of club. Pronotum 1.3 times longer than wide; sides parallel on basal two-thirds, anterior margin broadly rounded, with an acutely elevated, slightly undulating line, serrations absent; anterior one-third steeply declivous, with numerous, moderately elevated asperities, these becoming slightly larger toward anterior margin; posterior half of disc smooth, dull, densely, minutely reticulate. Elytra 1.5 times longer than wide, 1.2 times longer than pronotum; discal surface dull, densely minutely reticulate, with vaguely discernable striae punctures arranged in vaguely discernable rows, punctures small, shallowly impressed. Declivity occupying apical one-sixth of elytra, steep, basically flat, with striae 1 slightly impressed; face with two small, acute granules, one in middle, equidistant between suture and lateral margin and equidistant from base and apex, another on base of what should be interstriae 3?, these granules as long as their basal width; lateral margins slightly, acutely elevated from sutural apex to level equidistant between granules, rounded above, unarmed; remainder of surface shining, minutely granulate-reticulate; scattered setae present.

**Male.** Similar in size and proportions to female. Frons as in female but without a median, smooth space. Pronotum as in female except anterior margin bearing a row of distinct serrations. Elytra and declivity as in female except declivital granules slightly larger.

**Distribution.** This species is known from the type localities in Saint Lucia.

**Etymology.** From *ferrugo*, Latin for rust-colored, referring to the color of the adult.

**Comments.** The adults of *M. ferrugineum* are 1.9–2.1 mm in length and 2.6–2.7 times longer than wide; the female frons is dull, minutely reticulate, with obscure punctures in the reticulate area and with a smooth, slightly elevated, impunctate, median space above the epistoma. The spine in the middle of the declivital face of the male is very small and is equal in size to the spine at the declivital base.

***Monarthrum mali* (Fitch)**

Figures 354, 484, 554.

*Tomicus mali* Fitch 1856: 326.

*Monarthrum mali*: Wood and Bright 1992: 1058; Bright and Skidmore 1997: 222; Bright and Skidmore 2002: 158; Bright 2014: 279.

*Pterocyclon praeustum* Eggers 1941: 100 (Guadeloupe); Bright and Torres 2006: 423.

*Monarthrum praeustum*: Wood and Bright 1992: 1061.

*Pterocyclon opacifrons* Schedl 1950a: 167 (preoccupied by Schedl 1935) (Puerto Rico).

*Pterocyclon omissum* Schedl 1952: 347 (replacement name); Wood and Bright 1992: 1060; Bright 2014: 280.



**Figures 346–354.** Adult features of *Monarthrum* spp. **346)** *M. ambiguum* (antennal club). **347)** *M. antillicum* (declivity). **348)** *M. antillicum* (antennal club). **349)** *M. bullatum* (declivity). **350)** *M. brittoni* (declivity). **351)** *M. collinum* (declivity). **352)** *M. discordum* (declivity). **353)** *M. ferrugineum* (declivity). **354)** *M. mali* (declivity).

**Description (Female).** Length 1.7–2.1 mm, 3.2 times longer than wide; usually light brown on entire surface including legs, head and ventral surfaces, anterior 1/3rd of pronotum are slightly darker. Frons evenly convex; epistomal margin weakly narrowly elevated; surface dull, densely, finely reticulate over entire surface. Pronotum 1.4 times longer than wide; sides straight, parallel on basal 3/4ths; anterior margin broadly rounded, bearing a row of low serrations; anterior 1/3rd declivous, with small, weakly elevated asperities; posterior two-thirds smooth, dull, densely reticulate. Elytra 1.6 times longer than wide, 1.15 times longer than pronotum; sides straight, parallel on basal four-fifths, each elytron separately broadly rounded at apex; sutural notch acute; discal surface dull, densely, minutely reticulate, glabrous; discal striae very obscure, weakly, shallowly punctured in obscure rows; discal interstriae

slightly wider than striae. Declivity convex; suture impressed below general level of elytral surface; two acute tubercles located in a parallel line on each side of suture; apex rounded, acutely margined by a fine raised line, notched at sutural apex.

**Male.** Similar in size, proportion and color to female.

**Distribution.** This species is known from Minnesota to Maine south to Texas and Florida. It occurs throughout the West Indies, usually from low elevations.

**Specimens examined.** **BAHAMAS: Andros Island,** Furfar Field Station, Stafford Creek, 2–4.VI.2001, M. C. Thomas, blacklight trap in coastal coppice (6–RHTC). **CUBA:** Pinar del Rio, Sierra del Rosario, ca. 15 km S. Cinco Pecos Rangel, 29 June 1990, 420 m, M. A. Ivie, (1–WIBF). **DOMINICA:** Pt. Mulaire, September 15, 1965 (1–USNM); Syndicate Estate, March 5, 1964 (1–USNM); Holmwood Est., September 9, 1965 (1–USNM); Fortune, August 19, 1964 (1–USNM); G’leau Gommier, March 17, 1965 (1–USNM); ca. 1900, Pt. Casse, 18 Aug 1986, C. W. and L. O’Brien (2–CNCI); 1.7 mi E of Pont Casse, February 4–11, 1965 (1–USNM); Springfield Estate, Mt. Joy, 31.V.16.VI.2004, N15°20.841', W61°22.000' / ridge-top forest flight intercept trap, S. and J. Peck (1–SBPC). **DOMINICAN REPUBLIC:** Anza, east side of crest, Sierra Martin Garcia, 7 km WNW Barrero, 18–21N, 70–58W, 860 m / 25–26 July 1992, C. Young, R. Davidson, S. Thompson, J. Rawlins, cloud forest adjacent to disturbed forest (1–CMNH); Province La Vega, La Cienega, 1100m, 19°04.07'N, 70°51.68'W, 29 July 1999, at light, M. A. Ivie and K. A. Guererro (1–WIBF); Province La Vega, nr. Buena Vista, Hotel La Montana, 10 Apr 1992, 19°12'N, 70°35'W, 610 m, M. A. Ivie, D. Sikes, light (1–WIBF); Pedernales, 26 km N Cabo Rojo, 18–06N, 71–38W, 730 m / 19–25 July 1990, L. Masner, J. Rawlins, C. Young, wet deciduous forest intercept trap (1–CMNH); Province Barahona, Larimar Mine, nr Flipinas, 6–11.VII.1993, blacklight trap, R. E. Woodruff, 3300 ft. (14–REW, CNCI); Barahona, nr Flipinas, Larimar Mine: 26.VI–7.VII.1992 / Woodruff and Skelley, at light (1–FSCA); Pedernales, Sierra de Bacruco, Aceitilla, 25.2 km ENE Pedernales, 18.05.29N, 71.31.16W, 1272 m, 14 June 2003 / C Young, J. Rawlins, C. Nurez, R. Davidson: Acevedo, N. de la Cruz, dense broadleaf forest, pine, uv light, Sample 42212 (1–CMNH); Province La Vega, La Cienega, 1100 m, 19°04.17'N, 70°51.78'W, 29 July 1999, at light, M. Ivie and K. A. Guererro (1–WIBF); Pt. El Sebo, Loma de Chivo, 7 mi N Pedro Sanchez, 5000 ft., 29.VI.1998, blacklight trap, R. E. Woodruff: H. Freytag (1–FSCA). **GRENADA:** Saint Andrew, Mirabeau Agriculture Laboratory, various dates in 1990, various collectors, light trap (12–SBPC, CNCI). **GADELOUPE:** Gourbeyre (7–AMNH, CNCI); Basse-Terre: Forêt de Matouba, (Los Marches), 26.XI.1965 / BT, Bouillante, Faux Pitons de Bouillante, 7.VII.1965 (1–CNCI). **MARTINIQUE:** 4 km SW Le Marin, Morne Aca, 260 m, N14°27.4, W60°53.9 / humid forest hilltop clearing flight intercept trap, 13–28.VI.2012, S. Peck (1–SBPC). **PUERTO RICO:** Boquillo Sabana, Luquillo, light trap, 31.V.1989 (1–CNCI); El Yunque, 17.VI.96, light trap (1–CNCI); Guaynabo, various dates from 1995–2000, light traps (44–CNCI); Mayagüez, *Inga laurina* (2–USNM); Rio Grande, 20.II.1999, in *Manilkara bidentata* log (4–CNCI); Villalba, V-3–40, D. Deleon, *Dacryodes excelsa* (4–USNM); Hwy. 120, km 15–16, Maricao St. For., VIII.10.1999, C. W. O’Brien: Kovarik (2–CNCI); Rd. 763, Km 45, 22.XII.2008, *Pinus caribaea* (8–CNCI); Patillas, Patillas, Site 6, EDRR, 18.07885, 66.03694, 15.VIII.2013, C. Torres and H. Rivera (1–WSUC). **SAINT LUCIA:** Barre de L’Isle Trail, 13°93'N, 60°96'W, 7.VII.2009, 340 m / in dead fallen tree, D. E. Bright (1–CNCI); LaPorte Forest Trail, 13°84'N, 60°97'W, 11.VII.2009, 272 m / in dead fallen tree, D. E. Bright (1–CNCI); numerous additional specimens from Barre de L’Isle, Chassin, Piton Flores and Bordelias trap sites, 2009, various collectors (25–WIBF, CNCI). **SAINT VINCENT AND THE GRENADINES: Saint Vincent,** Hermitage Forest, E. of Spring Village, 15–17.VIII.2006, forest edge flight intercept trap and Malaise trap, 348 m, S. and J. Peck (1–SBPC).

**Comments.** As stated above under *M. brittoni*, females of this species may be recognized by the absence of a transverse groove above the epistomal margin, by the absence of a granule above the epistomal margin and by the different color pattern (variable). Males are difficult to distinguish.

The lectotype of *M. praeustum* in the USNM and a syntype of *M. opacifrons* in the NHMW were examined. The type material of *M. mali* is probably lost.

### Genus *Tricolus* Blandford

*Tricolus* Blandford 1905: 286; Wood and Bright 1992: 1042; Bright and Skidmore 2002: 444 (checklist); Bright 2014: 284.

Members of this genus may be distinguished by the 2-segmented antennal funicle (pedicel excluded), by the contiguous procoxae, by the anterior wall of the precoxal piece which is a thin, transverse parti-

tion and by the thickened anterior tibiae that bears a marginal row of serrations and a submarginal row of small granules on the posterior face.

Bright and Skidmore (2002) record 40 species, all in the New World tropics and subtropics; Wood (2007) adds 13 additional species from South America. Five species are treated herein from the West Indies.

All species of this genus are monogynous and xylomycetophagous, breeding in broken or injured limbs or large branches of numerous species of forest trees.

### Key to the species of *Tricolus* in the West Indies

1. Lateral margin of elytral declivity with one large, blunt process with a low, blunt elevation above this process; length 1.9 mm; Jamaica ..... ***T. unidentatus* Bright** (p. 426)
- Lateral margin on elytral declivity with three spines (middle spine may be obsolete) ..... **2**
- 2(1). Spine 1 on elytral declivity barely evident, spine 2 reduced to a low swelling; spine 3 quadrate, 1.3 times longer than width at base; length 2.2 mm; Dominican Republic ..... ***T. incomptus* Bright, sp. nov.** (p. 426)
- Spine 1 on declivity small to inconspicuous, acute; spine 2 long, cylindrical; spine 3 larger, quadrate, blunt at apex ..... **3**
- 3(2). Spine 3 with a granule or an acute angle on dorsal surface at apex; length 2.1–2.5 mm; Dominican Republic, Jamaica ..... ***T. gracilis* Eggers** (p. 424)
- Dorsal surface of spine 3 evenly arcuate, without a distinct granule or acute angle at upper angle ..... **4**
- 4(3). Elevated, circular reticulate area on female frons slightly smaller than antennal club; third spine on declivital margin as long as basal width, truncate at tip; length 2.8 mm, 3.5 times longer than wide; Dominican Republic ..... ***T. animatus* Bright, sp. nov.** (p. 423)
- Elevated reticulate area on female frons much smaller than antennal club; third spine on declivital margin much shorter than basal width or slightly longer than basal width but rounded at apex; length 2.3 mm; Saint Vincent ..... ***T. endemos* Bright, sp. nov.** (p. 424)

#### ***Tricolus animatus* Bright, sp. nov.**

Figures 355, 356.

**Type Material.** HOLOTYPE (female) labeled: “Rep. Dominic: 1972, J. and S. Klapperich” / “Colonia, 1000 m, 21.6” / “HOLOTYPE *Tricolus animatus* D. E. Bright 2016” (CNCI). PARATYPE (1) labeled: “DOMINICAN REPUBLIC: Pr. La Vega, vic. Manabao, 15.VII.1996, Coll. M. C. Thomas” (FSCA).

**Description (Female).** Length 2.8 mm, 3.5 times longer than wide; reddish-brown, apex of elytra darker. Frons convex, with an oval, slightly elevated, finely granulate area just above epistomal margin, this area slightly smaller than antennal club, extending from epistomal margin to level of upper margin of eyes; remainder of surface minutely reticulate, moderately shining. Antennal club 1.2 times longer than wide, widest at apical third; sutures weakly arcuate, chitinized at lateral margins; posterior face with several long setae projecting beyond apical margin of club. Pronotum 1.1 times longer than wide, sides parallel on basal half; anterior margin narrowly rounded, with a row of low serrations, all of equal length; anterior slope broadly sloping, with numerous, low asperities; basal half smooth, dull, minutely reticulate with very small, widely scattered, impressed punctures. Elytra (measured along suture) 1.6 times longer than wide; sides parallel on basal two-thirds, weakly converging to divaricate apex; discal surface randomly punctured, with distinct striae rows obscure, these more distinct on lateral portions, punctures small, slightly impressed. Declivity deeply sulcate, commencing on posterior half; lateral margins of impression with three distinct spines or projections; first spine at base of interstriae 2 acutely projecting posteriorad, smaller than second spine; second spine straight, conical with rounded tip; third

spine large, blunt, located below middle on lateral margin, this projection slightly longer than basal width.

**Male.** Unknown.

**Distribution.** This species is known from the type localities in the Dominican Republic.

**Etymology.** From *animatus*, Latin for alive or lively.

**Comments.** Females of this species may be recognized by the larger size and by the larger declivital armature.

***Tricolus endemos* Bright, sp. nov.**

Figures 357, 358.

**Type Material.** **HOLOTYPE** (female) labeled: “WEST INDIES: **SAINT LUCIA**, Piton Flores, 532 m, 13°96’N 60°94’W, 6.VII.2009” / “In fresh broken branch, D. E. Bright, collr.” / “HOLOTYPE *Tricolus endemos* D. E. Bright 2016” (CNCI). **PARATYPES** (6): 4 labeled: “WEST INDIES, **SAINT LUCIA**, Mon Repos, Fox Grove Inn, 90 m, 20–28.VII.2007” / “uv light, S. and J. Peck” (CNCI, SBPC); 1 labeled: “WEST INDIES, **SAINT LUCIA**, Mon Repos, 6.5 km W Fox Grove Inn, 9.VII.2007” / “submontane litter, 300 m, S. and J. Peck” (SBPC); 1 labeled: “WEST INDIES: **SAINT VINCENT**, Hermitage Forest, E of Spring Village, 15–27.VIII.2006, forest edge FIT and Malaise trap, 348 m, S. and J. Peck” (SBPC).

**Description (Female).** Length 2.3 mm, 3.1 times longer than wide; reddish-brown. Frons convex, with an oval, flattened, finely granulate area just above epistomal margin, this area distinctly smaller than antennal club, extending from epistomal margin to below level of upper margin of eyes; remainder of surface minutely reticulate and punctate, moderately shining. Antennal club 1.1 times longer than wide, widest at apical third; sutures moderately arcuate, chitinized at lateral margins; posterior face with several long setae projecting beyond apical margin of club. Pronotum 1.3 times longer than wide, sides parallel on basal half; anterior margin narrowly rounded, with a row of low serrations, one median serration longer than others; anterior slope broadly sloping, with numerous, low asperities; basal half smooth, dull, minutely reticulate with very small, widely scattered, impressed punctures. Elytra (measured along suture) 1.6 times longer than wide; sides parallel on basal two-thirds, weakly converging to divaricate apex; discal surface with striae distinctly punctured, with large punctures, these more distinct on lateral portions; discal interstriae narrower than striae, not punctured or with a few punctures. Declivity deeply sulcate, commencing on posterior half; lateral margins of impression with three distinct spines or projections; first spine at base of interstriae 2 acutely projecting posteriorad, smaller than second spine; second spine straight, conical with rounded tip; third spine large, blunt, located below middle on lateral margin, this projection slightly longer than basal width.

**Male.** Similar to female except long setae on posterior face of antennal club absent.

**Distribution.** This species is known from the type localities in Saint Lucia and Saint Vincent.

**Etymology.** From *endemos*, Latin for native, referring to the distribution of the species.

**Comments.** Adults of this species are similar to those of *T. animatus* but are smaller, with smaller declivital armature.

***Tricolus gracilis* Eggers**

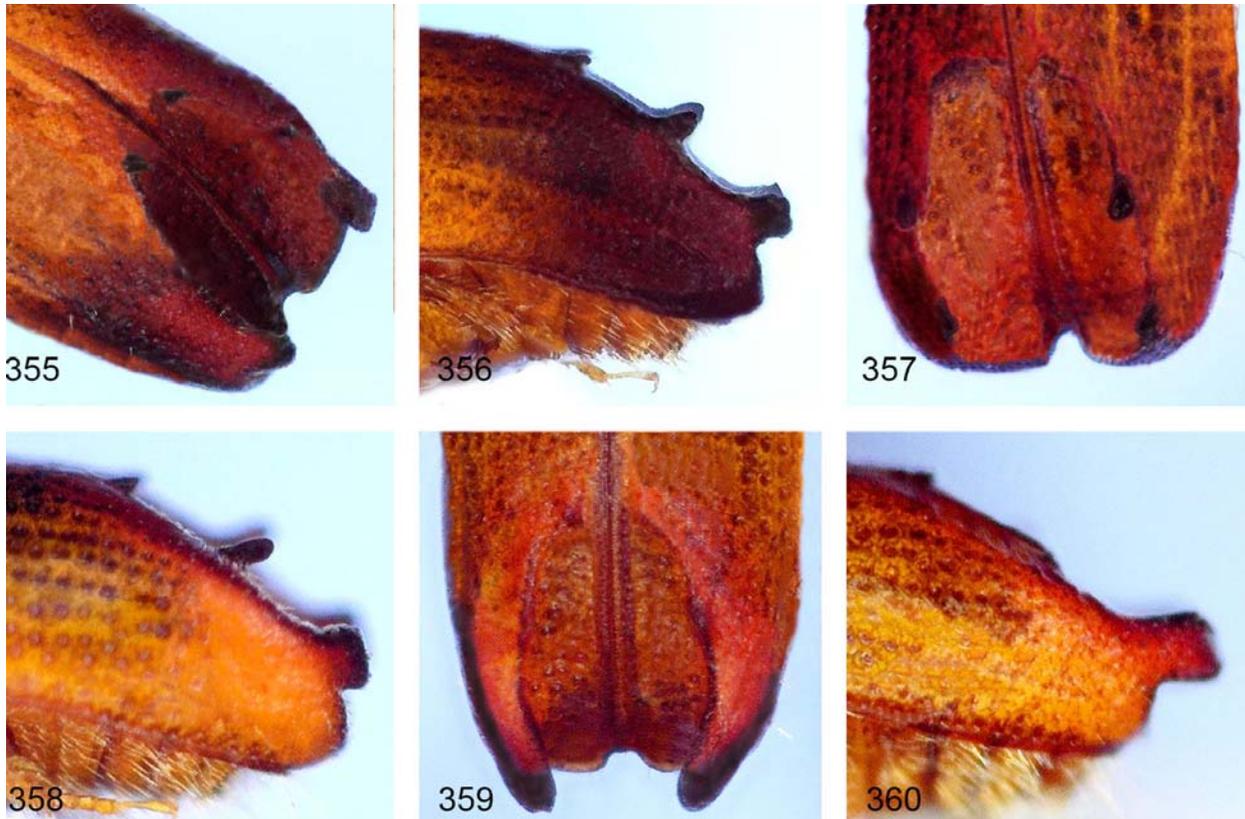
Figures 415, 485, 555.

*Tricolus gracilis* Eggers 1937: 87; Wood and Bright 1992: 1043.

*Tricolus perdiligens* Schedl 1950a: 171; Wood and Bright 1992: 1044; Bright and Skidmore 2002: 157.

**New Synonymy.**

*Tricolus ignotus* Bright 1972: 99 (Jamaica).



**Figures 355–360.** Declivities of *Tricolus* spp. **355)** *T. animatus* (dorsal). **356)** *T. animatus* (lateral). **357)** *T. endemos* (dorsal). **358)** *T. endemos* (lateral). **359)** *T. incomptus* (dorsal). **360)** *T. incomptus* (lateral).

**Description (Female).** Length 2.1–2.5 mm, 3.0–3.1 times longer than wide; light yellowish-brown. Frons convex, with an oval, inflated, finely granulate area just above epistomal margin, this area distinctly smaller than antennal club, extending from epistomal margin to below level of upper margin of eyes; surface opaque, very minutely reticulate, the median elevation more coarsely reticulate; vestiture consisting of short, fine, hairlike setae, confined to epistomal region. Eye large, separated on gular area by a distance equal to greatest width of antennal club; facets large; emargination extending inward the distance of four facets. Antennal club 1.4 times longer than wide, widest at apical third; sutures moderately arcuate, chitinized at lateral margins; posterior face with several long setae projecting beyond apical margin of club. Pronotum 1.4 times longer than wide, sides parallel on basal half; anterior margin narrowly rounded, with a row of low serrations, one median serration longer than others; anterior slope broadly sloping, with numerous, low asperities; basal half smooth, dull, minutely reticulate with very small, widely scattered, impressed punctures. Elytra 1.5 times longer than wide; sides weakly arcuate; striae not impressed, punctured in regular rows except near suture, punctures of moderate size, slightly impressed; interstriae smooth, impunctate. Declivity deeply, broadly concave; lateral margin elevated, rounded, bearing three large granules or spines, the lower one large, broad, truncate; above this is an elevated, narrow, blunt granule located in middle of lateral margin; upper margin bearing a small, acute spine in line with interstriae 1; apex rounded, with a broad, round notch at sutural apex; face shining, densely punctured, glabrous.

**Male.** Similar in size and proportions to female. Antennal club narrower, 1.1 times longer than wide, lacking the very long setae on posterior face; sculpture of pronotum rougher; strial punctures larger, more prominent; declivital armature larger, more massive.

**Distribution.** This species is known from the Dominican Republic, Guadeloupe and Jamaica.

**Specimens examined. DOMINICAN REPUBLIC:** Azua, east side of crest, Sierra Martin Garcia, 7 km WNW Barrero, 18–21N, 70–58W, 860 m / 25–26 July 1992, C. Toung, R. Davidson, S. Thompson, J. Rawlins, cloud

forest adjacent to disturbed forest (2-CMNH, CNCI); Colonia, 1000 m, March 18, 1972, J. and S. Klapperich (4-NHMB, CNCI); Hato Mayor, Parque Los Haitises, 3 km W Cueva de Arena, 19-04N, 69-29W / 20 m, 7-9 July 1992, R. Davidson, J. Rawlins, S. Thompson, Mesic lowland forest (1-CMNH); Province Barahona, nr. Filipinas, Larimar Mine; 20-26.VI.1992, R. F. Woodruff and P. E. Skelley, at light (5-RHTC, CNCI); Province Hato Mayor, W. Sabana de la Mar, Par. Nac. Los Haitises, bosque humido, 02 JULY 1992, M. A. and R. O. Ivie (1-WIBF); Puerto Plata, Pico El Murazo, north slope near summit, 19-41N, 70-57W / 910 m, 28 Nov 1992, J. Rawlins, R. Davidson, M. Klingler, S. Thompson, mesic deciduous forest (1-CMNH); San Cristobal, 35 m, November 17, 1971, J. and S. Klapperich (1-NHMB). **GUADELOUPE:** Basse-Terre: Gourbeyre, Palmiste, 25-30 Mar 2003, J. Touroult (1-CNCI); Gourbeyre (1-USNM). **JAMAICA:** Saint Andrew Parish, Hardwar Gap, 4000', 19 July 1966, Howden and Becker (3-CNCI); Saint Andrew Parish, 4,000 ft., Holywell Forest Camp, 17.XI.71, blacklight trap, M. Winegar (1-FSCA).

**Comments.** The adult of this species closely resembles that of *T. endemos* but is smaller and more slender. The holotypes of *T. gracilis* (USNM), *T. perdiligens* (NHMW) and *T. ignotus* (CNCI) were all examined and compared to my specimens. All represent the same species.

***Tricolus incomptus* Bright, sp. nov.**

Figures 359, 360.

**Type Material. HOLOTYPE** (female) labeled: “DOMINICAN REP: Province Barahona, nr. Filipinas, Larimar Mine; 20-26.VI.1992, R. F. Woodruff and P. E. Skelley, at light” / “HOLOTYPE *Tricolus incomptus* D. E. Bright 2016” (FSCA).

**Description (Female).** Length 2.2 mm, 2.7 times longer than wide; light yellowish-brown. Frons convex, with an oval, weakly elevated, finely granulate area just above epistomal margin, this area distinctly smaller than antennal club, extending from epistomal margin to less than half the distance to level of upper margin of eyes; remaining surface opaque, very minutely reticulate; vestiture consisting of short, fine, hairlike setae, confined to epistomal region. Eye large, separated on gular area by a distance equal to greatest width of antennal club; facets large; emargination extending inward the distance of four facets. Antennal club 1.4 times longer than wide, widest at apical third; with two moderately arcuate sutures, these chitinized at lateral margins; posterior face with several long setae projecting beyond apical margin of club. Pronotum 1.4 times longer than wide, sides parallel on basal half; anterior margin narrowly rounded, with a row of low serrations, one median serration longer than others; anterior slope broadly sloping, with numerous, low asperities; basal half smooth, dull, minutely reticulate with very small, widely scattered, impressed punctures. Elytra 1.5 times longer than wide; sides weakly arcuate; discal striae not impressed, punctured in regular rows except near suture, punctures of moderate size, slightly impressed; discal interstriae smooth, impunctate. Declivity deeply, broadly concave; lateral margin elevated, rounded, bearing three spines, first spine barely evident, located at base of interstriae 1 or 2, second spine reduced to a simple, weakly elevated swelling, sharply acute along summit, third spine large, broad, truncate, directed mesad; apex rounded, with a broad, round notch at sutural apex; face shining, densely punctured, glabrous.

**Male.** Unknown.

**Distribution.** This species is known from the type locality in the Dominican Republic.

**Etymology.** From *incomptus*, Latin for unadorned.

**Comments.** The holotype of this species is broken with the head and pronotum mounted separately from the elytra on the same point. Despite this, the specimen is so uniquely different from other species of *Tricolus* that future recognition should not be difficult. The elytral declivity of the holotype has the usual, elongate middle spine on the margin reduced to a weakly elevated swelling. In addition, the frons has a small, weakly granulate swelling just above the epistomal margin.

***Tricolus unidentatus* Bright**

*Tricolus unidentatus* Bright 1972: 98; Wood and Bright 1992: 1045.

**Description (Female).** Length 1.9 mm, 3.2 times longer than wide; light brown on elytral disc, dark reddish-brown on pronotum and elytral declivity. Frons somewhat retracted into pronotum, visible portion is convex, with a low, wide, circular, median elevation; surface minutely reticulate, dull, more coarsely reticulate on median elevation; vestiture consisting of short, fine, yellowish setae. Eye large, separated on gular area by a distance nearly equal to greatest width of antennal club; facets large; emargination extending inward the distance of four facets. Antennal club triangular, 1.2 times longer than wide; sutures 1 and 2 arcuate, chitinized; long setae arising on posterior face extending beyond tip. Pronotum 1.3 times longer than wide; sides weakly arcuate; anterior margin narrowly rounded, serrate; anterior slope bearing numerous, low asperities, surface between asperities dull, minutely reticulate; posterior and lateral area smooth, opaque, minutely reticulate, punctures very faint, small and shallow; a few smooth, raised lines are visible on base. Elytra 1.6 times longer than wide; sides weakly arcuate; striae not impressed, punctured in nearly regular rows except somewhat confused near suture, punctures fine, slightly impressed; interstriae smooth, impunctate. Declivity deeply, broadly concave; lateral margin broad, bearing a large, truncate protuberance on lower portion, this protuberance as broad as long, directed inward; lateral margin above protuberance weakly margined, extending to near suture, slightly elevated in median portion forming a very low, broad elevation; upper margin bearing a very small, blunt spine in line with interstriae 1; apex rounded, with a broad, round notch at sutural apex; face shining, deeply, densely punctured, glabrous.

**Male.** Unknown.

**Distribution.** This species is known from Jamaica.

**Specimens examined. JAMAICA:** Trelawny Parish, Barbecue Bottom, 12 August 1966, H. F. Howden (4-CNCI).

**Comments.** Adults of this species are unique among the other West Indian species of *Tricolus* by bearing a large, blunt processes on the lateral margin of the declivity with a low blunt elevation above this process.



## LITERATURE CITED

[\* = Reference not seen]

- Alonso-Zarazaga, M., and C. H. C. Lyal. 2009.** A catalogue of family and genus group names in Scolytinae and Platypodinae with nomenclatural remarks (Coleoptera: Curculionidae). *Zootaxa* 2258: 1–134.
- Anderson, W. E., and D. M. Anderson. 1971.** Type specimens in the Hans Eggers collection of scolytid beetles (Coleoptera). *Smithsonian Contributions to Zoology* 94: 1–38.
- Atkinson, T. H. 1989.** New synonymy, new species and notes on Scolytidae (Coleoptera) from southeastern United States. *The Coleopterists Bulletin* 43: 325–337.
- Atkinson, T. H. 1993a.** A new species of *Trischidias* (Coleoptera: Scolytidae) from southern Florida with a key to the species of the southeastern United States. *Florida Entomologist* 76: 416–423.
- Atkinson, T. H. 1993b.** A new species of *Pityophthorus* Eichhoff (Coleoptera: Scolytidae) from southern Florida with a key to the Florida species. *Florida Entomologist* 76: 608–616.
- Atkinson, T. H. 1993c.** Rediscovery of two Neotropical bark beetles (Coleoptera: Scolytidae) from southern Florida. *The Coleopterists Bulletin* 47: 287–288.
- Atkinson, T. H. 2009.** A new species of *Dryocoetoides* Hopkins from southern Florida (Coleoptera: Curculionidae: Scolytinae). *Zootaxa* 2311: 66–68.
- Atkinson, T. H. 2015.** Bark and Ambrosia Beetles. (Available at ~ <http://www.barkbeetles.info>. Last accessed December 31, 2015.)
- Atkinson, T. H., and A. Equihua-Martinez 1988.** Notas sobre la biología de Scolytidae y Platypodidae (Coleoptera) de México y Centroamérica. *Folia Entomológica Mexicana* 76: 83–105.
- Atkinson, T. H., and S. B. Peck. 1994.** Annotated checklist of the bark and ambrosia beetles (Coleoptera: Platypodidae and Scolytidae) of tropical southern Florida. *Florida Entomologist* 77: 313–329.
- Atkinson, T. H., and E. G. Riley. 2013.** Atlas and checklist of the bark and ambrosia beetles of Texas and Oklahoma (Curculionidae: Scolytinae and Platypodinae). *Insecta Mundi* 0292: 1–46.
- Atkinson, T. H., D. Carrillo, R. E. Duncan and J. E. Pena. 2013.** Occurrence of *Xyleborus bispinatus* (Coleoptera: Curculionidae: Scolytinae) Eichhoff in southern Florida. *Zootaxa* 3669: 96–100.
- Barriga-Tuñón, J. E., and L. Kirkendall. 2015.** Curculionidae de las Antillas: Subfamilia Scolytinae. (Available at ~ [http://www.coleoptera-neotropical.org/2\\_PAISES/Antillas/Curculionidae/Scolytinae-Antill.html](http://www.coleoptera-neotropical.org/2_PAISES/Antillas/Curculionidae/Scolytinae-Antill.html). Last accessed December 31, 2015.)
- de Beaufort, L. F. 1951.** Zoogeography of the land and inland waters. Sidgwick and Jackson Ltd.; London. 208 p.
- Beaver, R. A., W. Sittichaya and L.-Y. Liu. 2014.** A synopsis of the Scolytine ambrosia beetles of Thailand (Coleoptera: Curculionidae: Scolytinae). *Zootaxa* 3875: 001–082.
- Beeson, C. F. C. 1929.** Platypodidae and Scolytidae. p. 217–248. *In* *Insects of Samoa and other Samoan terrestrial arthropoda*. Part IV. Fascicle 4. Coleoptera. British Museum (Natural History).
- Blackman, M. W. 1920.** North American Ipidae of the subfamily Micracinae, with descriptions of new species and genera. *Mississippi Agricultural Experiment Station, Technical Bulletin* 9: 1–62.
- Blackman, M. W. 1921.** Descriptions of eight new bark beetles (Ipidae) from Mississippi. *Mississippi Agricultural Experiment Station, Technical Bulletin* 10: 1–16.
- Blackman, M. W. 1922.** Mississippi bark beetles. *Mississippi Agricultural Experiment Station, Technical Bulletin* 11: 1–130.
- Blackman, M. W. 1928a.** The genus *Pityophthorus* Eichh. In North America: A Revisional Study of the Pityophthori, with Descriptions of Two New Genera and Seventy-one New Species. *Bulletin of the New York State College of Forestry at Syracuse University* 1(3–b), Technical Publication 25: 3–183.
- Blackman, M. W. 1928b.** Notes on Micracinae, with descriptions of twelve new species. *Bulletin of the New York State College of Forestry at Syracuse University* 1(3–b), Technical Publication 25: 185–208.
- Blackman, M. W. 1940.** The scolytid beetles of the genus *Renocis* Casey, with descriptions of nine new species. *Proceedings of the United States National Museum* 88(3084): 373–401.
- Blackman, M. W. 1942.** New species of bark beetles (Pityophthorini) from Mexico and tropical America (Coleoptera, Scolytidae). *Proceedings of the United States National Museum* 92(3147): 177–227.
- Blackman, M. W. 1943a.** New species of American scolytid beetles, mostly Neotropical. *Proceedings of the United States National Museum* 94(3174): 371–399.
- Blackman, M. W. 1943b.** New genera and species of bark beetles of the subfamily Micracinae (Scolytidae, Coleoptera). *Proceedings of the United States National Museum* 93(3165): 341–365.

- Blackman, M. W. 1943c.** New genera and species of Neotropical bark beetles (Coleoptera: Scolytidae). *Journal of the Washington Academy of Sciences* 33: 34–38.
- Blackwelder, R. E. 1947.** Checklist of the Coleopterous insects of Mexico, Central America, the West Indies, and South America. Part 5. Smithsonian Institution, United States National Museum Bulletin 185: 765–925.
- Blandford, W. F. H. 1894a.** Notes on Scolytidae and their food-plants. *Insect Life* 6: 260–265.
- Blandford, W. F. H. 1894b.** The Rhynchophorus Coleoptera of Japan. Part 111. Scolytidae. *Transactions of the Entomological Society of London* 1894(1): 53–141.
- Blandford, W. F. H. 1896a.** Insecta. Coleoptera. Rhynchophora. Scolytidae. p. 121–128. *In*: D. Sharp, W. F. H. Blandford and K. Jordan. 1895–1907. *Biologia Centrali-Americana*, 4, part 6.
- Blandford, W. F. H. 1896b.** Insecta. Coleoptera. Rhynchophora. Scolytidae. p. 129–144. *In*: D. Sharp, W. F. H. Blandford and K. Jordan. 1895–1907. *Biologia Centrali-Americana*, 4, part 6.
- Blandford, W. F. H. 1897.** Insecta. Coleoptera. Rhynchophora. Scolytidae. p. 145–152. *In*: D. Sharp, W. F. H. Blandford and K. Jordan. *Biologia Centrali-Americana*, 4, part 6.
- Blandford, W. F. H. 1898.** Insecta. Coleoptera. Rhynchophora. Scolytidae. p. 185–216. *In*: D. Sharp, W. F. H. Blandford and K. Jordan. *Biologia Centrali-Americana*, 4, part 6. 5
- Blandford, W. F. H. 1904.** Insecta. Coleoptera. Rhynchophora. Scolytidae. p. 225–248. *In*: D. Sharp, W. F. H. Blandford and K. Jordan. 1895–1907. *Biologia Centrali-Americana*, 4, part 6.
- Blandford, W. F. H. 1905.** Insecta. Coleoptera. Rhynchophora. Scolytidae. p. 281–298. *In*: D. Sharp, W. F. H. Blandford and K. Jordan. 1895–1907. *Biologia Centrali-Americana*, 4, part 6.
- Bright, D. E. 1968.** Review of the tribe Xyleborini in America north of Mexico (Coleoptera: Scolytidae). *The Canadian Entomologist* 100: 1288–1323.
- Bright, D. E. 1972.** The Scolytidae and Platypodidae of Jamaica (Coleoptera). *Bulletin of the Institute of Jamaica, Science Series* 21: 1–108.
- Bright, D. E. 1973.** *Xyleborus howdenae*, new name and some corrections to The Scolytidae and Platypodidae of Jamaica. *The Coleopterists Bulletin* 27: 18.
- Bright, D. E. 1978.** New synonymy, new species and taxonomic notes of North American *Pityophthorus* (Coleoptera: Scolytidae). Part III. *Great Basin Naturalist* 38: 71–84.
- Bright, D. E. 1981a.** Studies on West Indies Scolytidae (Coleoptera) 1. New species, new distribution records and taxonomic notes. *Studies on Neotropical Fauna and Environment* 16: 151–164.
- Bright, D. E. 1981b.** Taxonomic monograph of the genus *Pityophthorus* Eichhoff in North and Central America (Coleoptera: Scolytidae). *Memoirs of the Entomological Society of Canada* 118: 1–378.
- Bright, D. E. 1982.** Studies on West Indies Scolytidae (Coleoptera) 2. New distribution records and description of a new genus and species. *Studies on Neotropical Fauna and Environment* 17: 163–168.
- Bright, D. E. 1985.** Studies on West Indian Scolytidae (Coleoptera) 3. Checklist of Scolytidae of the West Indies, with descriptions of new species and taxonomic notes. *Entomologische Arbeiten aus dem Museum G. Frey, Tutzing* 33/34: 169–187.
- Bright, D. E. 2010.** *Stevewoodia minutum*, a new genus and species of Scolytidae (Coleoptera) from the West Indies. *Studies on West Indian Scolytidae (Coleoptera)* 6. p. 45–48. *In*: A. I. Cognato and M. Kní ek, (eds.). Sixty years of discovering scolytine and platypodine diversity: A tribute to Stephen L. Wood. *ZooKeys* 56: 1–280.
- Bright, D. E. 2014.** A catalogue of Scolytidae and Platypodidae (Coleoptera), Supplement 3 (2000–2010), with notes on subfamily and tribal reclassifications. *Insecta Mundi* 0356: 1–336.
- Bright, D. E., and G. O. Poinar, Jr. 1994.** Scolytidae and Platypodidae (Coleoptera) from Dominican Republic Amber. *Annals of the Entomological Society of America* 87: 170–194.
- Bright, D. E., and R. E. Skidmore. 1997.** A catalog of Scolytidae and Platypodidae (Coleoptera), Supplement 1 (1990–1994). NRC Research Press; Ottawa, Ontario, Canada. 368 p.
- Bright, D. E., and R. E. Skidmore. 2002.** A catalog of Scolytidae and Platypodidae (Coleoptera), Supplement 2 (1995–1999). NRC Research Press; Ottawa, Ontario, Canada. 523 p.
- Bright, D. E., and J. A. Torres. 2006.** Studies on West Indian Scolytidae (Coleoptera) 4. A review of the Scolytidae of Puerto Rico, U.S.A. with descriptions of one new genus, fourteen new species and notes on new synonymy. *Koleopterologische Rundschau* 76: 389–428.
- Browne, F. G. 1961.** The generic characters, habits and taxonomic status of *Premnobius* Eichhoff (Coleoptera, Scolytidae). Fourth report of the West African Timber Borer Research Unit: 45–51.
- Burbano, E., M. Wright, D. E. Bright and F. E. Vega. 2011.** New record for the coffee berry borer, *Hypothenemus hampei*, in Hawaii. *Journal of Insect Science* 11: 117.

- Chapuis, F. 1869.** Synopsis des Scolytides (Prodrome d'un travail monographique). Imprimerie de J. Desoer; Libraire, Liège. 61 p.
- Cognato, A. I. 2013.** Molecular phylogeny and taxonomic review of Premnobiini (Browne, 1962) (Coleoptera: Curculionidae: Scolytinae). *Frontiers in Ecology and Evolution* 1: 1–12.
- Cognato, A. I. 2015.** Biology, systematics and evolution of *Ips*. p. 351–370. *In*: F. E. Fernando and R. W. Hofstetter (eds.). *Bark Beetles-Biology and Ecology of Native and Invasive Species*. Academic Press; London, UK. 620 p.
- Cognato, A. I., and D. E. Bright. 1996.** New records of bark beetles (Coleoptera: Scolytidae) from Dominica, West Indies. *The Coleopterists Bulletin* 50: 72.
- Cognato, A. I., and D. Rubinoff. 2008.** New exotic ambrosia beetles found in Hawaii Curculionidae: Scolytinae: Xyleborina). *The Coleopterists Bulletin* 62: 421–424.
- Cognato, A. I., and A. P. Vogler. 2001.** Exploring data interaction and nucleotide alignment in a multiple gene analysis of *Ips* (Coleoptera: Scolytinae). *Systematic Biology* 50: 758–780.
- Critchfield, W. B., and E. L. Little, Jr. 1966.** Geographic distribution of the pines of the world. U. S. Department of Agriculture, Forest Service, Miscellaneous Publication 991: 1–97.
- Crowson, R. A. 1955.** The natural classification of the families of Coleoptera. Nathaniel Lloyd, London. viii+ 1287 p.
- Damon, A. 2000.** A review of the biology and control of the coffee berry borer, *Hypothenemus hampei* (Coleoptera: Scolytidae). *Bulletin of Entomological Research* 90: 453–465.
- DeGeer, C. 1775.** Mémoires pour servir à l'histoire des insects. Vol.5. Hesselberg; Stockholm. 448 p.
- Deyrup, M. A. 1987.** *Trischidias exigua* Wood, new to the United States, with notes on the biology of the genus (Coleoptera: Scolytidae). *The Coleopterists Bulletin* 41: 339–343.
- Dole, S. A., and A. I. Cognato. 2010.** Phylogenetic revision of *Xylosandrus* Reitter (Coleoptera: Curculionidae: Scolytinae: Xyleborina). *Proceedings of the California Academy of Sciences, Series 4*, 61(10): 451–545.
- DuPorte, E. M. 1959.** Manual of insect morphology. Reinhold Publishing Corporation; New York. 224 p.
- Eggers, H. 1908.** Fünf neuer Borkenkäfer. *Entomologische Blätter* 4: 214–217.
- Eggers, H. 1923.** Neue Indomalayische Borkenkäfer (Ipidae). *Zoologische Mededeelingen* 7: 129–220.
- Eggers, H. 1927.** Neue Indomalayische Borkenkäfer (Ipidae). *Treubia* 9: 390–408.
- Eggers, H. 1929.** Zur Synonymie der Borkenkäfer (Ipidae, Col.). *Wiener Entomologische Zeitung* 46: 41–55.
- Eggers, H. 1930.** Borkenkäfer (Ipidae, Col.) aus Südamerika. III. *Entomologische Blätter* 26: 163–171.
- Eggers, H. 1931.** Borkenkäfer (Ipidae, Col.) aus Südamerika. III. *Entomologische Blätter* 27: 14–23.
- Eggers, H. 1932a.** Borkenkäfer (Ipidae, Col.) aus Südamerika. V. Die Gattung *Problechilus* Eichh. mit 8 neuen Arten. *Wiener Entomologische Zeitung* 48: 226–235.
- Eggers, H. 1932b.** Neue Borkenkäfer (Ipidae, Col.) aus Africa (Nachtrag V.) *Revue de Zoologie et de Botanique Africaines* 22: 291–304.
- Eggers, H. 1933.** Borkenkäfer (Ipidae, Col.) aus Südamerika, VI. Material des Muséum Paris aus Franz. Guayana und Venezuela. *Travaux du Laboratoire d'Entomologie, Muséum National d'Histoire Naturelle*, 1. 37 p.
- Eggers, H. 1934.** Borkenkäfer (Ipidae, Col.) aus Südamerika, VII. *Entomologische Blätter* 30: 78–84.
- Eggers, H. 1935.** Borkenkäfer aus Südamerika (Ipidae, Col.) (Fortsetzung) VII. Vergessene und neue Gattungen (I Teil). *Revista de Entomologia* 5: 153–159.
- Eggers, H. 1937.** Borkenkäfer aus Südamerika (Ipidae, Col.). VIII. Vergessene und neue Gattungen (2. Teil, Schluss). *Revista de Entomologia* 7: 79–88.
- Eggers, H. 1940.** Borkenkäfer aus Südamerika. (Coleoptera: Ipidae). IX. Insel Guadeloupe. Arbeiten über morphologische und taxonomische Entomologie 7: 123–141.
- Eggers, H. 1941.** Borkenkäfer aus Südamerika. (Coleoptera: Ipidae). IX. Insel Guadeloupe. Arbeiten über morphologische und taxonomische Entomologie 8: 99–109.
- Eggers, H. 1943.** Borkenkäfer (Col., Ipidae) aus Südamerika. X. Bolivia. *Mitteilungen der Münchner Entomologischen Gesellschaft* 33: 344–389.
- Eggers, H. 1951.** Borkenkäfer (Ipidae, Col.) aus Südamerika. XII. 25 neue Arten aus verschiedenen Gebieten. *Entomologische Blätter* 45–46: 144–154.
- Eichhoff, W. J. 1864.** Ueber die Mundtheile und die Fühlerbildung der europäischen Xylophagi sens strict. *Berliner Entomologische Zeitschrift* 8: 17–46.
- Eichhoff, W. J. 1868a.** Neue amerikanische Borkenkäfer-Gattungen und Arten. *Berliner Entomologische Zeitschrift* 11: 309–402.
- Eichhoff, W. J. 1868b.** Neue amerikanische Borkenkäfer-Gattungen und Arten. *Berliner Entomologische Zeitschrift* 12: 145–152.

- Eichhoff, W. J. 1869.** Neue Borkenkäfer. Berliner Entomologische Zeitschrift 12: 273–282.
- Eichhoff, W. J. 1872.** Neue exotische Tomiciden-Arten. Berliner Entomologische Zeitschrift 15(2–3): 131–137.
- Eichhoff, W. J. 1875.** Pages 200–203 in F. Chapuis and W. Eichhoff, Scolytides recueillis au Japan par M. G. Lewis. Annales de la Société Entomologique de Belgique 18: 195–203.
- Eichhoff, W. J. 1878a.** Neue oder noch unbeschriebene Tomicinen. Entomologische Zeitung 39(7–9): 383–392.
- Eichhoff, W. J. 1878b.** Ratio, descriptio, emendatio eorum Tomicinorum qui sunt in Dr. medic. Chapuisii et autoris ipsius collectionibus et quos praeterea recognovit. Mémoires de la Société Royal des Sciences de Liège (2)8: 1–531.
- Equihua-Martinez, A., and T. H. Atkinson. 1986.** Annotated checklist of bark and ambrosia beetles (Coleoptera: Scolytidae and Platypodidae) associated with a tropical deciduous forest at Chamela, Jalisco Mexico. Florida Entomologist 69: 619–635.
- Erichson, W. F. 1836.** Systematische Auseinandersetzung der Familie der Borkenkäfer (Bostrichidae). Archiv für Naturgeschichte 2(1): 45–65.
- Fabricius, J. C. 1775.** Systema Entomologiae, sistens insectorum classes, ordines, genera, species, adiectis synonymis, locis, descriptionibus, observationibus. Officina Libraris Kortii; Flensburgi et Lipsiae. 832 p.
- Fabricius, J. C. 1801.** Systema eleutheratorum secundum ordines, genera, species, adiectis synonymis, locis, observationibus, descriptionibus. Vol. 2. Bibliopoli Academici Novi; Kiliae. 687 p.
- Faccoli, M., G. Campo, G. Perrotta and D. Rassati. 2016.** Two newly introduced tropical bark and ambrosia beetles (Coleoptera: Curculionidae, Scolytinae) damaging figs (*Ficus carica*) in southern Italy. Zootaxa 4138: 189–194.
- Farrell, B. D., A. S. Sequeira, B. C. O'Meara, B. B. Normark, J. H. Chung, and B. H. Jordal. 2001.** The evolution of agriculture in beetles (Curculionidae: Scolytinae and Platypodinae). Evolution 55: 2011–2027.
- Ferrari, J. A. 1867.** Die Forst- und Baumzuchtschadlichen Borkenkäfer (Tomicides Lac.) aus der Familie der Holzverderber (Scolytides Lac.), etc. Carl Gerold's Sohn; Wien. 96 p.
- \*Fitch, A. 1856.** Noxius and other insects of the state of New York. Third Annual Report Transactions of the New York Agricultural Society 16: 316–490.
- Franqui, R. A., S. Medina-Gaud and F. Gallardo-Covas. 1991.** *Xylosandrus compactus* (Eichhoff), Coleoptera: Scolytidae, the black twig borer attacking coffee in Puerto Rico. The Journal of Agriculture of the University of Puerto Rico 75: 183–184.
- Garraway, E. 1986.** The biology of *Ips calligraphus* and *Ips grandicollis* (Coleoptera: Scolytidae) in Jamaica. The Canadian Entomologist 118: 113–121.
- Garraway, E., and B. E. Freeman. 1981.** Population dynamics of the juniper bark beetle *Phloeosinus neotropicus* in Jamaica. Oikos 37: 363–368.
- Geoffroy, E. L. 1762.** Histoire abrégée des insectes qui trouvent aux environs de Paris; dans laquelle ces animaux sont rangés suivant un ordre méthodique. Vol. 1. Durand; Paris. 523 p.
- Germer, E. F. 1824.** Insectorum species novae autimus cognitae, descriptionibus illustratae. Coleoptera. Halle. 624 p. [Scolytidae: 461–463].
- Gillett, C. P. D. T., A. Crampton-Platt, M. J. T. N Timmermans, B. H. Jordal, B. C. Emerson and A. P. Vogler. 2014.** Bulk *de novo* mitogenome assembly from pooled total DNA elucidates the phylogeny of weevils (Coleoptera: Curculionoidea). Molecular Biology and Evolution 31: 2223–2237.
- Gohli, J., T. Selvarajah, L. R. Kirkendall and B. H. Jordal. 2016.** Globally distributed *Xyleborus* species reveal recurrent intercontinental dispersal in a landscape of ancient worldwide distributions. BMC Evolutionary Biology 16: 37–48.
- Gordh, G., and D. Headrick. 2001.** A dictionary of entomology. CAB International; New York, NY. 1032 p.
- Graham, A. 2003.** Historical phytogeography of the Greater Antilles. Brittonia 55: 357–383.
- Haack, R. A. 2001.** Intercepted Scolytidae (Coleoptera) at U. S. ports of entry: 1985–2000. Integrated Pest Management Reviews 6: 253–282.
- Haack, R. A., R. F. Billings and A. M. Richter. 1989.** Life history parameters of bark beetles (Coleoptera: Scolytidae) attacking West Indian pines in the Dominican Republic. Florida Entomologist 72: 591–603.
- Hagedorn, M. 1905.** Enumeratio Scolytidarum e Guyana, Venezuela et Columbia natarum Musei Historico-Naturalis Parisiorum, descriptionibus specierum novarum adjectis II. Bulletin Musee d'Histoire Naturelle 1905: 412–416.
- Hagedorn, M. 1912.** Borkenkäfer (Ipidae), welche in Kautschukbäumen leben. Revue Zoologique Africaine 1: 336–346.

- Hedges, S. B. 2001.** Biogeography of the West Indies: An overview. p. 15–33. *In*: C. A. Woods and F. E. Sergile (eds.). Biogeography of the West Indies—Patterns and Perspectives, 2<sup>nd</sup> edition. CRC Press: Boca Raton; London, New York, Washington D. C. 582 p.
- Hopkins, A. D. 1902.** A new genus of scolytids from Florida. *Proceedings of the Entomological Society of Washington* 5: 34–38.
- Hopkins, A. D. 1915a.** Classification of the Cryphalinae, with descriptions of new genera and species. United States Department of Agriculture, Office of the Secretary, Report 99. 75 p.
- Hopkins, A. D. 1915b.** A new genus of scolytid beetles. *Journal of the Washington Academy of Sciences* 5: 429–433.
- Hopping, G. R. 1965.** North American species in group IX of *Ips* De Geer (Coleoptera: Scolytidae). *The Canadian Entomologist* 97: 422–434.
- Hornung, E. G. 1842.** Über einige in den Betelnüssen vorkommende Käfer. *Stettiner Entomologische Zeitung* 3: 115–117.
- Hulcr, J., and A. I. Cognato. 2010.** New genera of Palaotropical Xyleborini (Coleoptera: Curculionidae: Scolytinae) based on congruence between morphological and molecular characters. *Zootaxa* 2717: 1–33.
- Hulcr, J., and A. I. Cognato. 2013.** Xyleborini of New Guinea, a taxonomic monograph (Coleoptera: Curculionidae: Scolytinae). Thomas Say Publications in Entomology: Monographs. Entomological Society of America; Annapolis, MD. 172 p.
- Hulcr, J., T. H. Atkinson, A. I. Cognato, B. H. Jordal and D. D. McKenna. 2015.** Morphology, Taxonomy and Phylogenetics of Bark Beetles. p. 41–84. *In*: F. E. Vega and R. W. Hofstetter (eds.). *Bark Beetles: Biology and Ecology of Native and Invasive Species*. Academic Press; London, UK. 620 p.
- Iglesias, F. 1914.** Ipidae brasileiros. Diagnose de duas especies novas. *Revista do Museu Paulista* 9: 128–132.
- Imms, A. D. 1957.** A general textbook of entomology (ninth edition), revised by O. W. Richards and R. G. Davies. Methuen and Co., Ltd.; London. 886 p.
- International Commission of Zoological Nomenclature. 1986.** Opinion 1408. *Hypocryphalus mangiferae* (Stebbing, 1914) given nomenclatural precedence over *Cryphalus inops* Eichhoff, 1872 and *Hypothenemus griseus* Blackburn, 1885 (Insecta, Coleoptera). *Bulletin of Zoological Nomenclature* 43: 245–246.
- International Commission of Zoological Nomenclature. 1999.** International Code of Zoological Nomenclature. International Trust for Zoological Nomenclature, The Natural History Museum; London, UK. 306 p. (Accessed December 10, 2017, <http://www.iczn.org/iczn/index.jsp>)
- Ivie, M. A., K. A. Marske, I. A. Foley and L. L. Ivie. 2008a.** Appendix 2. Species lists of the beetles, non-beetle hexapods and non-hexapod invertebrates of Montserrat. p. 237–316. *In*: R. P. Young (ed.). *A biodiversity assessment of the Centre Hills, Montserrat*. Durrell Conservation Monographs 1. Durrell Wildlife Conservation Trust, Jersey, Channel Islands. 319 p.
- Ivie, M. A., K. A. Marske, I. A. Foley, K. A. Guerrero and L. L. Ivie. 2008b.** Invertebrates of the Centre Hills and Montserrat, with an emphasis on beetles. p. 56–89. *In*: R. P. Young (ed.). *A biodiversity assessment of the Centre Hills, Montserrat*. Durrell Conservation Monographs 1. Durrell Wildlife Conservation Trust, Jersey, Channel Islands. 319 p.
- Johnson, A. J., T. H. Atkinson and J. Hulcr. 2016.** Two remarkable new species of *Hypothenemus* Westwood (Curculionidae: Scolytinae) from Southeastern USA. *Zootaxa* 4200: 417–425.
- Jordal, B. H. 1998.** A review of *Scolytodes* Ferrari (Coleoptera: Scolytidae) associated with *Cecropia* (Cecropiaceae) in the northern Neotropics. *Journal of Natural History* 32: 31–84.
- Jordal, B. H., S. M. Smith and A. I. Cognato. 2014.** Classification of weevils as a data-driven science: leaving opinion behind. *ZooKeys* 439: 1–18.
- Judd, W. W. 1970.** Beetles, *Neodryocoetes hubbardi* Blackman (Scolytidae), infesting seeds strung as necklaces imported from Jamaica. *Canadian Journal of Zoology* 48: 895–896.
- Kirkendall, L. R., and B. Jordal. 2006.** The bark and ambrosia beetles (Curculionidae, Scolytinae) of Cocos Island, Costa Rica and the role of mating systems in island zoogeography. *Biological Journal of the Linnean Society* 89: 729–743.
- Kirsch, T. F. W. 1866.** Beiträge zur Käferfauna von Bogotà. Zweites Stück. *Berliner Entomologische Zeitschrift* 10: 173–217.
- Lanier, G. N. 1970.** Biosystematics of North American *Ips* (Coleoptera: Scolytidae). Hopping's group IX. *The Canadian Entomologist* 102: 1139–1163.
- Lanier, G. N. 1987.** The validity of *Ips cribricollis* (Eich.) (Coleoptera: Scolytidae) as distinct from *I. grandicollis* (Eich.) and the occurrence of both species in Central America. *The Canadian Entomologist* 119: 179–187.

- Lanier, G. N., S. A. Teale and J. A. Pajares. 1991.** Biosystematics of the genus *Ips* (Coleoptera: Scolytidae) in North America: Review of the *Ips calligraphus* group. *The Canadian Entomologist* 123: 1103–1124.
- Latreille, A. 1797.** Précis des caractères génériques des insectes, disposés dans un ordre naturel. Prévôt, Paris; F. Bourdeaux, Brive. 210 p.
- LeConte, J. L. 1868.** *In*: Zimmermann, C., q.v.
- LeConte, J. L. 1876.** Family IX. Scolytidae. p. 341–391. *In*: J. L. LeConte and G. H. Horn, *The Rhynchophora of America North of Mexico*. Proceedings of the American Philosophical Society 15(96): 341–391.
- LeConte, J. L. 1878a.** Descriptions of new species. *In*: H. G. Hubbard and E. A. Schwarz, *The Coleoptera of Michigan*. Proceedings of the American Philosophical Society 17: 593–699.
- LeConte, J. L. 1878b.** Scolytidae. p. 432–434. *In*: E. A. Schwarz, *The Coleoptera of Florida*. Proceedings of the American Philosophical Society 17: 353–472.
- Le Pelly, R. H. 1968.** Pests of Coffee. Longmans, Green and Co, Ltd; London. 590 p.
- Letzner, K. W. 1848.** *Bostrichus jalappae*. p. 96–99. *In*: Bericht über die arbeiten der entomologischen sektion im jahre 1848. Arbeiten der Schlesischen Gesellschaft für Vaterlandische Kultur; Breslau.
- Mandelstam, M. Y., and N. B. Nikitsky. 2010.** Review of Scolytidae (Coleoptera) type specimens from V. Motschulsky collection preserved in the Zoological Museum of Moscow State University. *Byulleten' Moskovskogo Obshchestva Ispytatelei Prirody Otdel Biologicheskii* 115: 13–21.
- Maramorosch, K., L. F. Martorell, J. Bird and P. L. Melendez. 1972.** *Platypus rugulosus* (Platypodidae) and *Xyleborus ferrugineus* (Scolytidae) and certain diseases of coconut palms in Puerto Rico. *Journal of the New York Entomological Society* 80: 238–240.
- Matheson, R. 1951.** Entomology for Introductory Courses, 2<sup>nd</sup> Edition. Comstock Publishing Company, Inc.; Ithaca, NY. 629 p.
- Mittermeier, R. A., Robles Gil, M. Hoffmann, J. Pilgrim, T. Brooks, C. G. Mittermeier, J. Lamoreaux and G. A. B. Da Fonesca. 2004a.** Hotspots Revisited. Earth's biologically richest and most endangered terrestrial ecoregions. CEMEX, S. A. de C. V.; Mexico City, Mexico. 390 p.
- Mittermeier, R. A., Robles Gil, J. Pilgrim, T. Brooks, C. G. Mittermeier, G. A. B. Da Fonesca, H. Ford and P. A. Seligmann-Smith. 2004b.** Hotspots Revisited. Earth's biologically richest and most endangered terrestrial ecoregions. Conservation International; Washington, D. C. 329 p.
- Motschulsky, V. de. 1866.** Essai d'un catalogue des insectes de l'île de Ceylon. *Bulletin de la Société des Naturalistes de Moscou* 39: 393–446.
- Myers, N. 2003.** Biodiversity hotspots revisited. *BioScience* 53: 916–917.
- Myers, N., R. A. Mittermeier, C. G. Mittermeier, G. B. A. de Fonseca and J. Kent. 2000.** Biodiversity hotspots conservation priorities. *Nature* 403: 853–858.
- Nördlinger, H. 1856.** Nachträge zur Ratzeburg's Forstinsekten. Julius Weiss; Stuttgart. 83 p.
- Nunberg, M. 1956.** Namensänderungen und Synonymie einiger Borkenkäfer (Coleoptera, Scolytidae). *Annales Zoologici* 16: 207–214.
- Okins, K. E., and M. C. Thomas. 2010.** New North American record for *Xyleborinus andrewesi* (Coleoptera: Curculionidae: Scolytinae). *Florida Entomologist* 93: 133–134.
- \*Panzer, G. W. F. 1791.** Beschreibung eines noch unbekanntes sehr kleinen Kapuzkäfers aus einem westindischen Samen. *Naturforscher* 25/26: 35–38.
- Peck, S. B. 2005.** A checklist of the beetles of Cuba, with data on distribution and bionomics (Insecta: Coleoptera). *Arthropods of Florida and Neighboring Land Areas* 18: 576–587.
- Peck, S. B. 2006.** The beetle fauna of Dominica, Lesser Antilles (Insecta: Coleoptera): diversity and distribution. *Insecta Mundi* 20: 165–210.
- Peck, S. B. 2009a.** The beetles of Barbados, West Indies (Insecta: Coleoptera): diversity, distribution and faunal structure. *Insecta Mundi* 0073: 1–51.
- Peck, S. B. 2009b.** The beetles of St. Lucia, Lesser Antilles (Insecta: Coleoptera): diversity and distribution. *Insecta Mundi* 0106: 1–34.
- Peck, S. B. 2009c.** Beetle species diversity in the Lesser Antilles islands: How many species are really there? *Insecta Mundi* 0078: 1–5.
- Peck, S. B. 2010.** The beetles of the island of St. Vincent, Lesser Antilles (Insecta: Coleoptera); diversity and distributions. *Insecta Mundi* 0144: 1–77.

- Peck, S. B. 2011a.** The diversity and distributions of the beetles (Insecta: Coleoptera) of the northern Leeward Islands, Lesser Antilles (Antigua, Barbuda, Nevis, Saba, St. Barthélemy, St. Eustatius, St. Kitts and St. Martin-St. Maarten). *Insecta Mundi* 0159: 1–54.
- Peck, S. B. 2011b.** The beetles of Martinique, Lesser Antilles (Insecta: Coleoptera): diversity and distribution. *Insecta Mundi* 0178: 1–57.
- Peck, S. B. 2016.** The beetles of the Lesser Antilles (Insecta, Coleoptera): diversity and distributions. *Insecta Mundi* 0460: 1–360.
- Peck, S. B., and D. E. Perez-Gelabert. 2012.** A summary of the endemic beetle genera of the West Indies (Insecta: Coleoptera); bioindicators of the evolutionary richness of this Neotropical archipelago. *Insecta Mundi* 0212: 1–29.
- Peck, S. B., and M. C. Thomas. 1998.** A distributional checklist of the beetles (Coleoptera) of Florida. *Arthropods of Florida and Neighboring Land Areas* 16: 1–180.
- Peck, S. B., and M. C. Thomas. 2014.** The diversity and distributions of the beetles (Insecta: Coleoptera) of the Guadeloupe Archipelago (Grande-Terre, Basse-Terre, La Désirade, Marie-Galante, Les Saintes and Petite-Terre), Lesser Antilles. *Insecta Mundi* 0352: 1–156.
- Perez-Gelabert, D. E. 2008.** Arthropods of Hispaniola (Dominican Republic and Haiti): A checklist and bibliography. *Zootaxa* 1831: 1–530.
- Pérez Silva, M., A. Equihua Martínez and T. H. Atkinson. 2015.** Identificación de las especies mexicanas del género *Xyleborus* Eichhoff, 1865 (Coleoptera: Curculionidae: Scolytinae). *Insecta Mundi* 0440: 1–35.
- Petrov, A. V., and C. A. H. Flechtmann. 2013.** New data on ambrosia beetles of the genus *Sampsonius* Eggers, 1935 with descriptions of three new species from South America. *Koleopterologische Rundschau* 83: 173–184.
- Rabaglia, R. J., S. A. Dole and A. I. Cognato. 2006.** Review of American Xyleborina (Coleoptera: Curculionidae: Scolytinae) occurring north of Mexico. *Annals of the Entomological Society of America* 99: 1034–1056.
- \*Ratzeburg, J. T. C. 1837.** Die Forest-insekten oder Abbildung und Beschreibung der in den Waldern Preussens und der Nachbarstaaten als schädlich oder nützlich bekannt gewordenen Insekten. Vol. 1. Nicolai: Berlin.
- Reitter, E. 1913.** Bestimmungs-Tabelle der Borkenkäfer (Scolytidae) aus Europa und den angrenzenden Ländern. *Wiener Entomologischen Zeitung* 32, Beiheft. 116 p.
- Sampson, F. W. 1911.** On two new wood-boring beetles (Ipidae). *Annals and Magazine of Natural History* (8)45: 381–383.
- Sampson, F. W. 1918.** A new scolytid injurious to sweet potatoes in Jamaica. *Bulletin of Entomological Research* 8: 295.
- Say, T. 1826.** Descriptions of new species of coleopterous insects inhabiting the United States. *Journal of the Academy of Natural Sciences of Philadelphia* 5: 237–284.
- Schaeffer, C. F. 1908.** New Rhynchophora. 3. *Journal of the New York Entomological Society* 16: 213–222.
- Schaufuss, C. 1905.** Borkenkäferstudien. II. *Insektenbörse* 12: 1–8.
- Schedl, K. E. 1931.** Notes on the genus *Xyleborus* Eichh. *Annals and Magazine of Natural History* (10)8: 339–347.
- Schedl, K. E. 1934.** Neue Scolytidae und Platypodidae aus Zentral- und Südamerika. *Entomologische Blätter* 30: 208–212.
- Schedl, K. E. 1935.** New Scolytidae and Platypodidae from Central and South America. *Revista de Entomologia* 5: 342–359.
- Schedl, K. E. 1936.** Scolytidae und Platypodidae (Coleopt.) – Neue Zentral- und Südamerikanische Arten. (36. Beitrag). *Archivos do Instituto de Biologia Vegetal* 3: 99–110.
- Schedl, K. E. 1937.** Scolytidae und Platypodidae-Zentral und Südamerikanische Arten. *Archivos do Instituto Biologia Vegetal* 3: 155–170.
- Schedl, K. E. 1938.** Die Einteilung der Pityophthorinae. *Archiv für Naturgeschichte, N. F.* 7: 157–188.
- Schedl, K. E. 1939a.** Some new Neotropical species of Scolytidae in the collection of the British Museum (Coleopt.). *Proceedings of the Royal Entomological Society of London (B)*8, Part 1: 12–16.
- Schedl, K. E. 1939b.** Scolytidae und Platypodidae (Col.). 63. Beitrag. *Mitteilungen der Münchner Entomologischen Gesellschaft* 29: 564–585.
- Schedl, K. E. 1939c.** Scolytidae und Platypodidae. 47. Beitrag. *Tijdschrift voor Entomologie* 82: 30–53.
- Schedl, K. E. 1940.** Fauna Mexicana I. Insecta Coleoptera, superfamilia Scolytoidea, Coptonotidae y Platypodidae Mexicanos. *Anales de la Escuela Nacional de Ciencias Biológicas, Mexico* 1(3–4): 317–377.
- Schedl, K. E. 1949a.** Tropical seed beetles of the genus *Coccotrupes* Eichh. 99. Contribution of the Morphology and Taxonomy of the Scolytoidea. *Tijdschrift voor Entomologie* 1948 (1949): 113–120.

- Schedl, K. E. 1949b.** Neotropical Scolytoidea. I. 97<sup>th</sup> Contribution to the Morphology and Taxonomy of the Scolytoidea (Col.). *Revista Brasileira de Biologia* 9: 261–284.
- Schedl, K. E. 1950a.** Neotropical Scolytoidea II. 107. Contribution of the Morphology and Taxonomy of the Scolytoidea. *Dusenia* 1: 145–180.
- Schedl, K. E. 1950b.** Fauna Aethiopica III. 103. Contribution of the Morphology and Taxonomy of the Scolytoidea. *Bulletin Institut royal des Sciences naturelles de Belgique* 26(50): 1–36.
- Schedl, K. E. 1951.** Neotropische Scolytoidea IV. 112. Beitrag zur Morphologie und Systematik der Scolytoidea. *Dusenia* II: 71–130.
- Schedl, K. E. 1952.** Neotropische Scolytoidea III. 110. Beitrag zur Morphologie und Systematik der Scolytoidea. *Dusenia* III: 343–366.
- Schedl, K. E. 1954.** Neotropische Scolytoidea V. 142. Beitrag zur Morphologie und Systematik der Scolytoidea. *Dusenia* V: 21–48.
- Schedl, K. E. 1957.** A few Scolytidae beetles (Scolytidae) from the West Indies. *Journal of the New York Entomological Society* 65: 191–194.
- Schedl, K. E. 1958.** Zur Synonymie der Borkenkäfer II. 159. Beitrag zur Morphologie und Systematik der Scolytoidea. *Tijdschrift voor Entomologie* 101: 141–155.
- Schedl, K. E. 1960.** Synonymies of bark beetles (Scolytidae) IV. 174. Contribution to the morphology and taxonomy of the Scolytoidea. *The Coleopterists Bulletin* 14: 5–12.
- Schedl, K. E. 1961a.** New species of bark and timber beetles from the Neotropical Region. 186. Contribution of the Morphology and Taxonomy of the Scolytoidea (Coleoptera). *The Pan-Pacific Entomologist* 37: 223–233.
- Schedl, K. E. 1961b.** A few Scolytidae from Trinidad. 192. Contribution of the Morphology and Taxonomy of the Scolytoidea. *Annals and Magazine of Natural History Series* 13, vol. iii: 529–531.
- Schedl, K. E. 1962.** Scolytidae und Platypodidae Afrikas. Band 2. Familie Scolytidae. *Revista de Entomologia de Mocambique* 5: 1–594.
- Schedl, K. E. 1963a.** Borkenkäfer der Bodenfauna in Surinam. 199. Beitrag zur Morphologie und Systematik der Scolytoidea. *Studies on the Fauna of Surinam and other Guyanas* 6(21): 52–64.
- Schedl, K. E. 1963b.** Zur Synonymie der Borkenkäfer IX. 209. Beitrag zur Morphologie und Systematik der Scolytoidea. *Entomologische Abhandlungen und Berichte aus dem Staatl. Museum für Tierkunde in Dresden* 28(6): 257–268.
- Schedl, K. E. 1966.** Neotropische Scolytoidea, VIII. 238 Beitrag zur Morphologie und Systematik der Scolytoidea. *Entomologischen Arbeiten aus dem Museum G. Frey, Tutzing* 17: 74–128.
- Schedl, K. E. 1970.** Neotropische Scolytoidea X. 270. Beitrag zur Morphologie und Systematik der Scolytoidea. *Koleopterologische Rundschau* 48: 79–110.
- Schedl, K. E. 1972.** Neotropische Scolytoidea XI. 293. Beitrag zur Morphologie und Systematik der Scolytoidea. *Koleopterologische Rundschau* 50: 37–86.
- Schedl, K. E. 1974.** Zur Synonymie der Borkenkäfer XXIV. 306 Beitrag zur Morphologie und Systematik der Scolytoidea. *Entomologischen Arbeiten aus dem Museum G. Frey, Tutzing* 25: 333–341.
- Schedl, K. E. 1977.** Scolytoidea aus El Salvador. 327. Beitrag zur Morphologie und Taxonomie der Scolytoidea. *Zeitschrift der Arbeitsgemeinschaft Österr. Entomologen* 29: 41–48.
- Schedl, K. E. 1979.** Die Typen der Sammlung Schedl. Familie Scolytidae (Coleoptera). Mit einer Würdigung des Autors von Max Fischer und Schriftenverzeichnis. *Kataloge der wissenschaftlichen Sammlungen des Naturhistorischen Museums in Wien, Entomologie. Band 3, Heft 2.* 286 p.
- Schwarz, E. A. 1891.** Contributions to the life-history of *Corthylus punctatissimus* and description of *C. spinifer* n. sp. *Proceedings of the Entomological Society of Washington* 2: 109–115.
- Schwarz, E. A. 1894.** A “parasitic” scolytid. *Proceedings of the Entomological Society of Washington* 3: 15–17.
- Schwarz, E. A. 1896.** Remarks on North American Scolytids. *Entomologica Americana* 2: 40–42, 44, 54–56.
- Schwarz, E. A. 1920.** A new scolytid beetle from tropical Florida. *Proceedings of the Entomological Society of Washington* 22: 222–226.
- Smith, S. M., and A. I. Cognato. 2013.** A new species of *Scolytus* Geoffroy, 1762 and taxonomic changes regarding Neotropical Scolytini (Coleoptera: Curculionidae: Scolytinae). *The Coleopterists Bulletin* 67: 547–556.
- Smith, S. M., A. V. Petrov and A. I. Cognato. 2017.** Beetles (Coleoptera) of Peru: A survey of the families. Curculionidae: Scolytinae. *The Coleopterists Bulletin* 71: 77–91.
- Snodgrass, R. E. 1935.** Principles of insect morphology. McGraw-Hill Book Company; New York and London. 667 p.

- Stebbing, E. P. 1914.** Indian forest insects of economic importance. Coleoptera. Eyre and Spottiswood; London. 648 p.
- Storer, C. G., J. W. Breinholt and J. Hulcr. 2015.** *Wallacellus* is *Euwallacea*: molecular phylogenetics settles generic relationships (Coleoptera: Curculionidae: Scolytinae: Xyleborini). *Zootaxa* 3974: 391–400.
- Strohmeyer, H. 1911.** Zwei weitere neue Borkenkäfer aus Abessinien. *Entomologische Blätter* 7: 16–18.
- Swaine, J. M. 1917.** Canadian bark-beetles. Part I. Descriptions of new species. Dominion of Canada, Department of Agriculture, Entomological Branch, Technical Bulletin 14. 32 p.
- Swaine, J. M. 1918.** Canadian bark-beetles. Part II. A preliminary classification, with an account of the habits and means of control. Dominion of Canada, Department of Agriculture, Entomological Branch, Technical Bulletin 14. 143 p.
- Turnbow, Jr., R. H., and M. C. Thomas. 2008.** An annotated checklist of the Coleoptera (Insecta) of the Bahamas. *Insecta Mundi* 0034: 1–64.
- Vázquez Moreno, L. L., M. Rodríguez Pérez and M. A. Zorrilla. 2003.** Lista de escolítidos (Coleoptera) de Cuba y plantas hospedantes. *Fitosanidad* 7: 17–21.
- Vega, F. E., R. A. Franqui and P. Benavides. 2002.** The presence of the coffee berry borer, *Hypothenemus hampei*, in Puerto Rico: fact or fiction? *Journal of Insect Science* 2: 1–3.
- Vega, F. E., F. Infante and A. J. Johnson. 2015.** The genus *Hypothenemus*, with emphasis on *H. hampei*, the Coffee Berry Borer. p. 427–494. *In*: F. E. Fernando and R. W. Hofstetter (eds.). *Bark Beetles-Biology and Ecology of Native and Invasive Species*. Academic Press; London, UK. 620 p.
- Westwood, J. O. 1834.** Description of a minute Coleopterous insect, forming the type of a new subgenus allied to *Tomicus*, with some observations upon the affinities of the Xylophaga. *Transactions of the Entomological Society of London* 1(1): 34–36.
- Wheeler, Q. D., and N. I. Platnick. 2000.** The phylogenetic species concept (*sensu* Wheeler and Platnick). p. 55–69. *In*: Q. D. Wheeler and R. Meier (eds.). *Species concepts and phylogenetic theory: a debate*. Columbia University Press; New York, NY. 230 p.
- Wichmann, H. E. 1914.** Ein neuer *Microborus*. *Wiener Entomologische Zeitung* 33: 143–144.
- Wichmann, H. E. 1915.** Zur Kenntnis der Ipiden, III. *Entomologische Blätter* 11: 102–107.
- Wolcott, G. N. 1936.** “Insectae Borinquensis”, A revised annotated check-list of the insects of Puerto Rico. *The Journal of Agriculture of the University of Puerto Rico* 20: 1–627.
- Wolcott, G. N. 1948.** The insects of Puerto Rico. *The Journal of Agriculture of the University of Puerto Rico* 32: 225–416.
- Wollaston, T. V. 1854.** *Insecta Maderensia*; being an account of the insects of the Islands of the Madeiran Group. John van Voorst; London. 634 p.
- Wood, S. L. 1954.** A revision of North American Cryphalini (Scolytidae: Coleoptera). *University of Kansas Science Bulletin* 36: 959–1089.
- Wood, S. L. 1957.** Distributional notes and synonymies of some North American Scolytidae (Coleoptera). *The Canadian Entomologist* 89: 396–403.
- Wood, S. L. 1961.** New species of bark beetles (Coleoptera: Scolytidae), mostly Mexican, Part VI. *Great Basin Naturalist* 21: 87–107.
- Wood, S. L. 1964.** New species of North American *Pityophthorus* Eichhoff (Coleoptera: Scolytidae). *Great Basin Naturalist* 24: 59–70.
- Wood, S. L. 1966.** New synonymy in the Platypodidae and Scolytidae (Coleoptera). *Great Basin Naturalist* 26: 17–33.
- Wood, S. L. 1967.** New records and species of Neotropical bark beetles (Scolytidae: Coleoptera), Part II. *Great Basin Naturalist* 27: 119–141.
- Wood, S. L. 1973.** New synonymy in American bark beetles (Scolytidae: Coleoptera), Part III. *Great Basin Naturalist* 33: 169–188.
- Wood, S. L. 1974.** New species of American bark beetles (Scolytidae: Coleoptera). *Brigham Young University Science Bulletin, Biological Series* 19: 1–67.
- Wood, S. L. 1977.** New synonymy and new species of American bark beetles (Coleoptera: Scolytidae), Part V. *Great Basin Naturalist* 37: 383–394.
- Wood, S. L. 1978.** New synonymy and new species of American bark beetles (Coleoptera: Scolytidae), Part VII. *Great Basin Naturalist* 38: 397–405.
- Wood, S. L. 1979.** New synonymy and new species of American bark beetles (Coleoptera: Scolytidae), Part VIII. *Great Basin Naturalist* 39: 133–142.

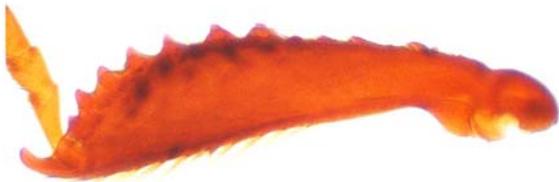
- Wood, S. L. 1981.** Nomenclatural changes and new species in Platypodidae and Scolytidae (Coleoptera). Great Basin Naturalist 41: 121–128.
- Wood, S. L. 1982.** The Bark and Ambrosia Beetles of North and Central America (Coleoptera: Scolytidae), A Taxonomic Monograph. Great Basin Naturalist Memoir 6. 1359 p.
- Wood, S. L. 1985.** New synonymy and new species of bark beetles (Coleoptera: Scolytidae). Great Basin Naturalist 45: 266–275.
- Wood, S. L. 1986.** New synonymy and new species of American bark beetles (Coleoptera: Scolytidae), Part XI. Great Basin Naturalist 46: 265–273.
- Wood, S. L. 1989.** Nomenclatural changes and new species of Scolytidae (Coleoptera), Part IV. Great Basin Naturalist 49: 167–185.
- Wood, S. L. 1992.** Nomenclatural changes and new species in Platypodidae and Scolytidae (Coleoptera), Part II. Great Basin Naturalist 52: 78–88.
- Wood, S. L. 2007.** Bark and ambrosia beetles of South America. M. L. Bean Life Science Museum, Brigham Young University; Provo, Utah. 900 p.
- Wood, S. L. and D. E. Bright. 1992.** A catalog of Scolytidae and Platypodidae (Coleoptera), Part 2: Taxonomic Index, Volume A and B. Memoirs of the Great Basin Naturalist 13. 1553 p.
- Woodruff, R. 1970.** A mangrove borer, *Poecilips rhizophorae* (Hopkins) (Coleoptera: Scolytidae). Florida Department of Agriculture, Entomology Circular 98: 1–2.
- Woodruff, R. E., B. M. Beck, E. Skelley, C. Y. L. Schotman and M. C. Thomas. 1998.** Checklist and bibliography of the insects of Grenada and the Grenadines. Center for Systematic Entomology Memoir 2: 1–286.
- Zimmerman, C. 1868.** Synopsis of the Scolytidae of America North of Mexico. With notes and an appendix by J. L. LeConte, M. D. Transaction of the American Entomological Society 2: 141–178.



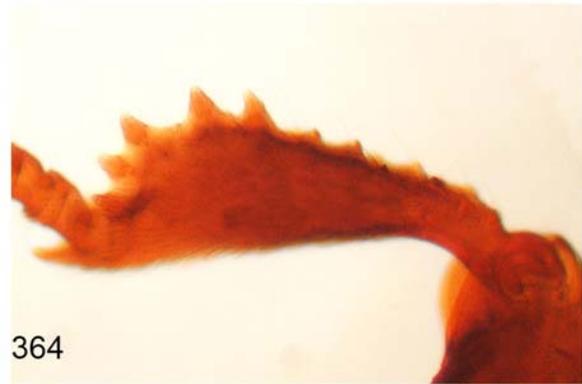
361



362



363



364



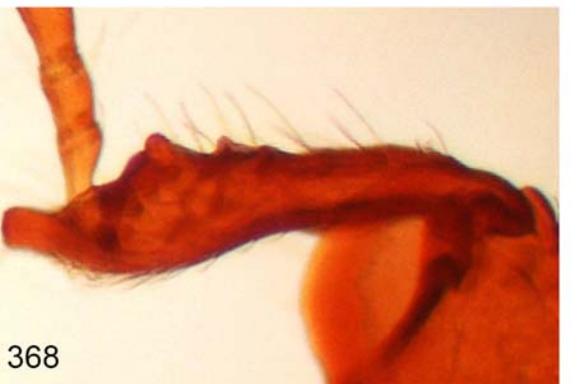
365



366

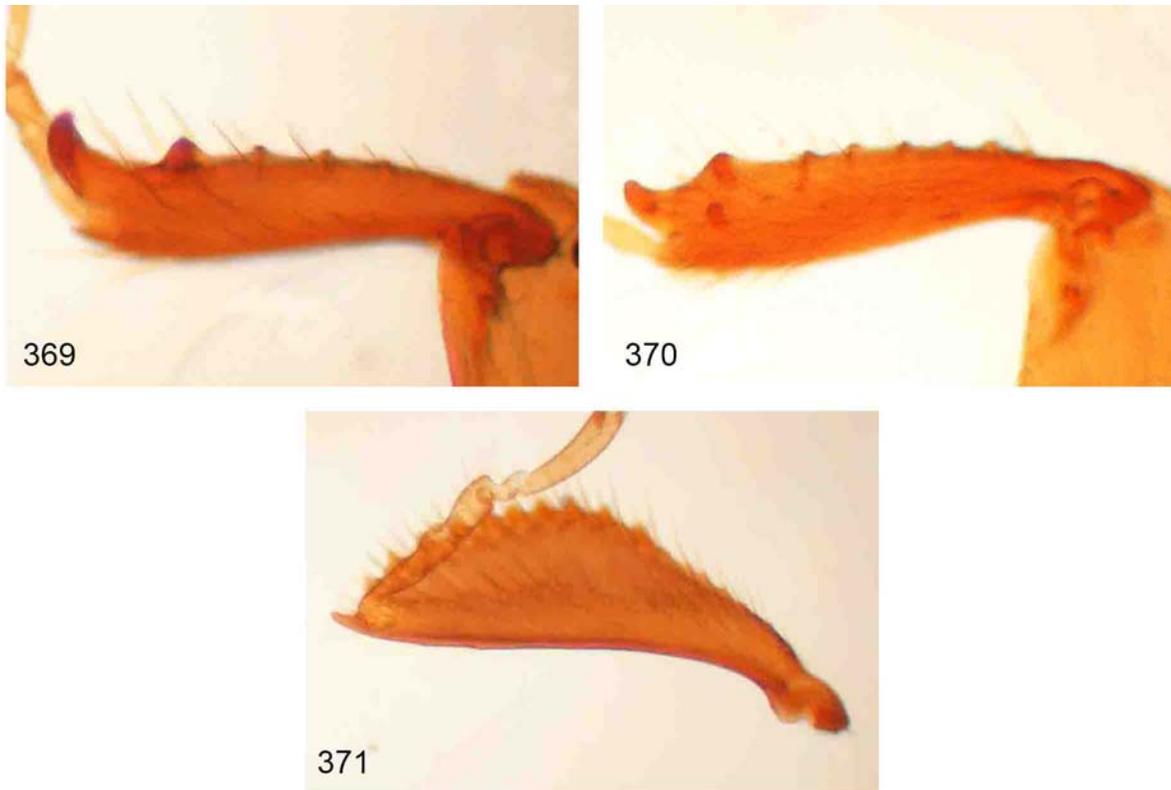


367



368

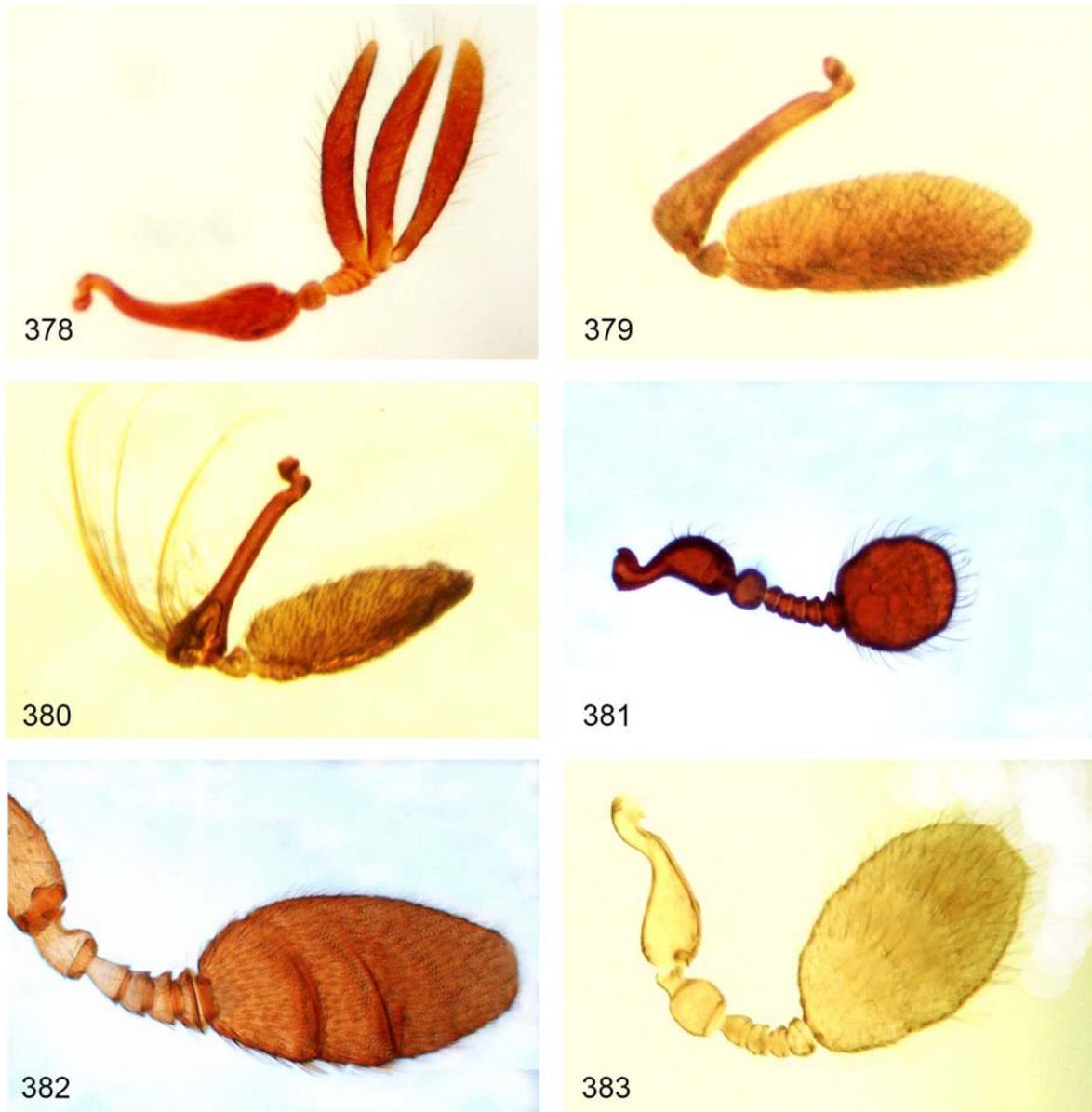
**Figures 361–368.** Protibia of various species. **361)** *Cnesinus guadeloupensis*. **362)** *Dendrocranulus barbatulus*. **363)** *Dryocoetoides capucinus*. **364)** *Hylastes tenuis*. **365)** *Hypocryphalus mangiferae*. **366)** *Loganius ficus*. **367)** *Micracis cubensis*. **368)** *Parathysanoes absonus*.



**Figures 369–371.** Protibia of *Scolytodes* species. **369)** *Scolytodes atlanticus*. **370)** *S. puertoricensis*. **Figure 371.** Mesotibia of *Xyleborus spinulosus*.



**Figures 372–377.** Antennae of various species. **372)** *Loganius ficus*. **373)** *Scolytus dimidiatus*. **374)** *Phloeoborus scaber*. **375)** *Bothrosternus isolatus*. **376)** *Cnesinus guadeloupensis*. **377)** *Phloeotribus caymanensis*.



**Figures 378–383.** Antennae of various species. **378)** *Phloeotribus atlanticus*. **379)** *Chramesus rotundatus* (male). **380)** *C. rotundatus* (female). **381)** *Cladoctonus interruptus*. **382)** *Phloeosinus neotropicus*. **383)** *Chaetophloeus howdeni*.



**Figures 384–389.** Antennae of various species. **384)** *Liparthrum caymanensis*. **385)** *Trypanophellos minutum*. **386)** *Hylocurus tumidosus*. **387)** *Micracis cubensis*. **388)** *Micracisella nanula*. **389)** *Pseudothysanoes trunculus*.



390



391



392



393



394

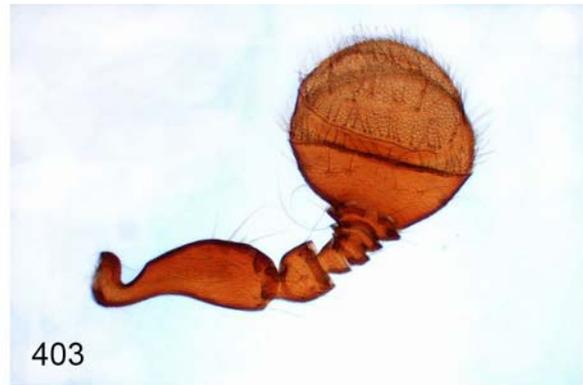


395

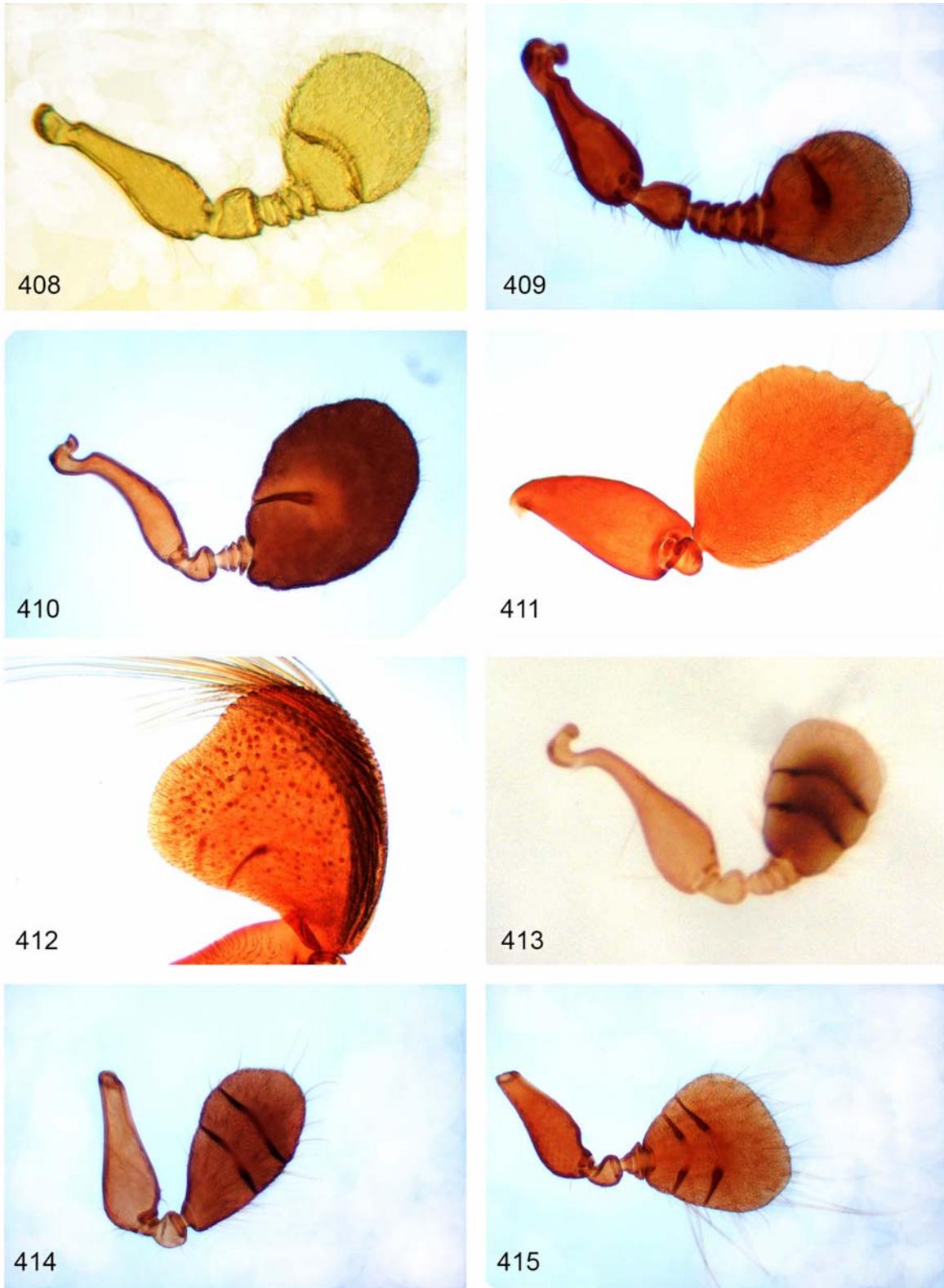
**Figures 390–395.** Antennae of various species. **390)** *Cryptocarenum seriatus*. **391)** *Hypocryphalus mangiferae*. **392)** *Hypothenemus javanus*. **393)** *Scolytogenes jalappae*. **394)** *Gymnochilus insularis*. **395)** *Microborus caymanensis*.



**Figures 396–401.** Antennae of various species. **396)** *Pycnarthrum hispidum*. **397)** *Scolytodes atlanticus*. **398)** *Crypturgus alutaceus*. **399)** *Ips cribricollis*. **400)** *Coccotrypes incertus*. **401)** *Dendrocranulus barbatulus*.



**Figures 402–407.** Antennae of various species. **402)** *Ambrosiodmus devexulus*. **403)** *Dryocoetoides capucinus*. **404)** *Euwallacea caribicus*. **405)** *Theoborus puertoricensis*. **406)** *Xyleborinus buski*. **407)** *Araptus incolus*.



**Figures 408–415.** Antennae of various species. **408)** *Gnatholeptus hispanicus*. **409)** *Gnathoraptus mandibularis*. **410)** *Sphenoceros antillicus*. **411)** *Corthylus alpestris*. **412)** *Corthylus tuberculatus* (female). **413)** *Gnathotrichus hispaniolus*. **414)** *Monarthrum antillicum*. **415)** *Tricolus gracilis*.



**Figures 416–423.** Lateral habitus of various species. **416)** *Loganius ficus*. **417)** *Scolytopsis puncticollis*. **418)** *Scolytus dimidiatus*. **419)** *Phrixosoma antillicum*. **420)** *Hylastes tenuis*. **421)** *Phloeoborus scaber*. **422)** *Bothrosternus isolatus*. **423)** *Cnesinus guadeloupensis*.



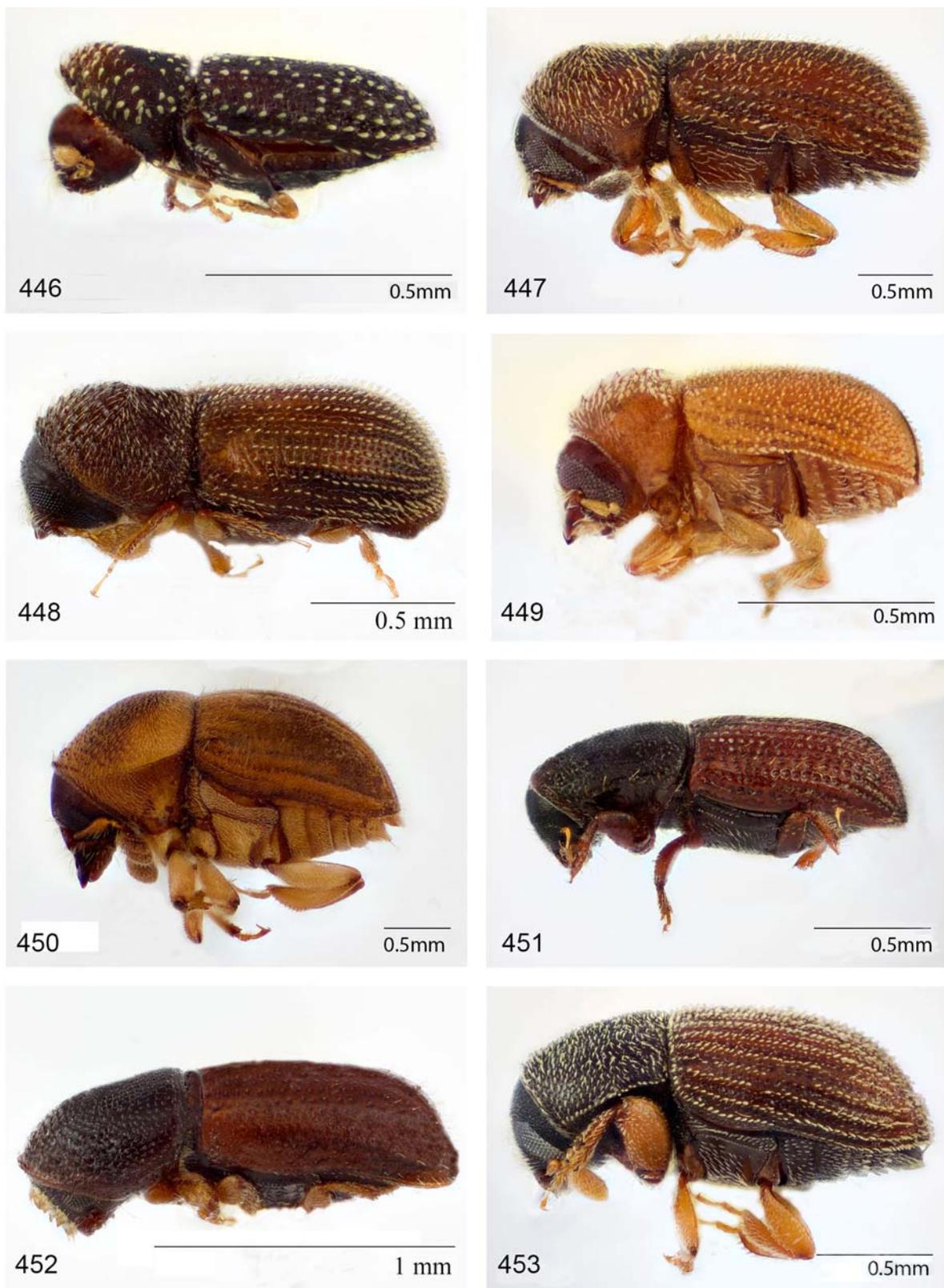
**Figures 424–429.** Lateral habitus of various species. **424)** *Pagiocerus frontalis*. **425)** *Sternobothrus bicaudatus*. **426)** *Phloeotribus atlanticus*. **427)** *Chramesus atlanticus*. **428)** *Cladoctonus interruptus*. **429)** *Dendrosinus bourreriae*.



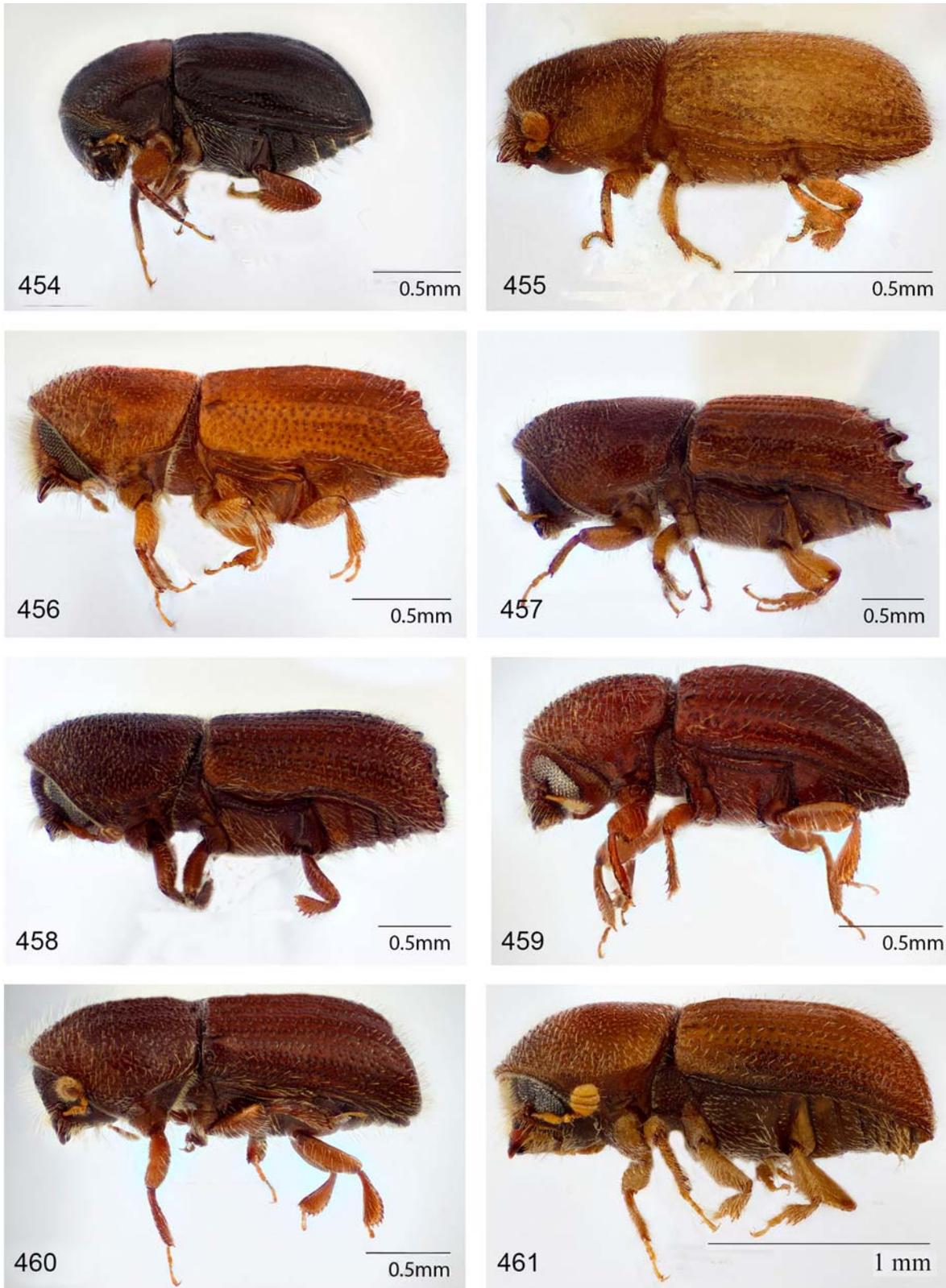
**Figures 430–437.** Lateral habitus of various species. **430)** *Phloeosinus neotropicus*. **431)** *Chaetophloeus cubensis*. **432)** *Liparthrum caymanensis*. **433)** *Trypanophellos neocopinus*. **434)** *Hylocurus tumidosus*. **435)** *Micracis cubensis*. **436)** *Micracisella nanula*. **437)** *Parathysanoes absonus*.



**Figures 438–445.** Lateral habitus of various species. **438)** *Pseudothysanoes trunculus*. **439)** *Stevewoodia minutum*. **440)** *Allothenemus minutus*. **441)** *Atomothenemus unicus*. **442)** *Cryptocarenus seriatus*. **443)** *Hypocryphalus mangiferae*. **444)** *Hypothenemus obscurus*. **445)** *Microsomus atomus*.



**Figures 446–453.** Lateral habitus of various species. **446)** *Pygmaeoborus cubensis*. **447)** *Scolytogenes jalappae*. **448)** *Stegomerus diversus*. **449)** *Trypolepis antillicum*. **450)** *Gymnochilus insularis*. **451)** *Microborus lautus*. **452)** *Pseudohexacolus singularis*. **453)** *Pycnarthrum hispidum*.



**Figures 454–461.** Lateral habitus of various species. **454)** *Scolytodes atlanticus*. **455)** *Crypturgus alutaceus*. **456)** *Acanthotomicus mimicus*. **457)** *Ips cribricollis*. **458)** *Orthotomicus caelatus*. **459)** *Coccotrypes carpophagus*. **460)** *Dendrocranulus barbatulus*. **461)** *Neocultus thomasi*.



**Figures 462–469.** Lateral habitus of various species. **462)** *Premnobius cavipennis*. **463)** *Ambrosiodmus hagedorni*. **464)** *Dryocoetoides capucinus*. **465)** *Coptoborus vespatorius*. **466)** *Sampsonius dampfi*. **467)** *Theoborus theobromae*. **468)** *Euwallacea caraibicus*. **469)** *Xyleborinus buscki*.



**Figures 470–477.** Lateral habitus of various species. **470)** *Xyleborus exilis*. **471)** *Xylosandrus compactus*. **472)** *Araptus hymenaeae*. **473)** *Conophthorus insulatus*. **474)** *Gnathoraptus mandibularis*. **475)** *Pityoborus comatus* (female). **476)** *Pityophthorus antillicus*. **477)** *Pseudopityophthorus absitus*.



**Figures 478–485.** Lateral habitus of various species. **478)** *Sphenoceros antillicus*. **479)** *Amphicranus hispaniolus*. **480)** *Corthylus tuberculatus*. **481)** *Gnathotrichus hispaniolus*. **482)** *Gnathotrupes megapunctatus*. **483)** *Microcorthylus brevis*. **484)** *Monarthrum mali*. **485)** *Tricolus gracilis*.



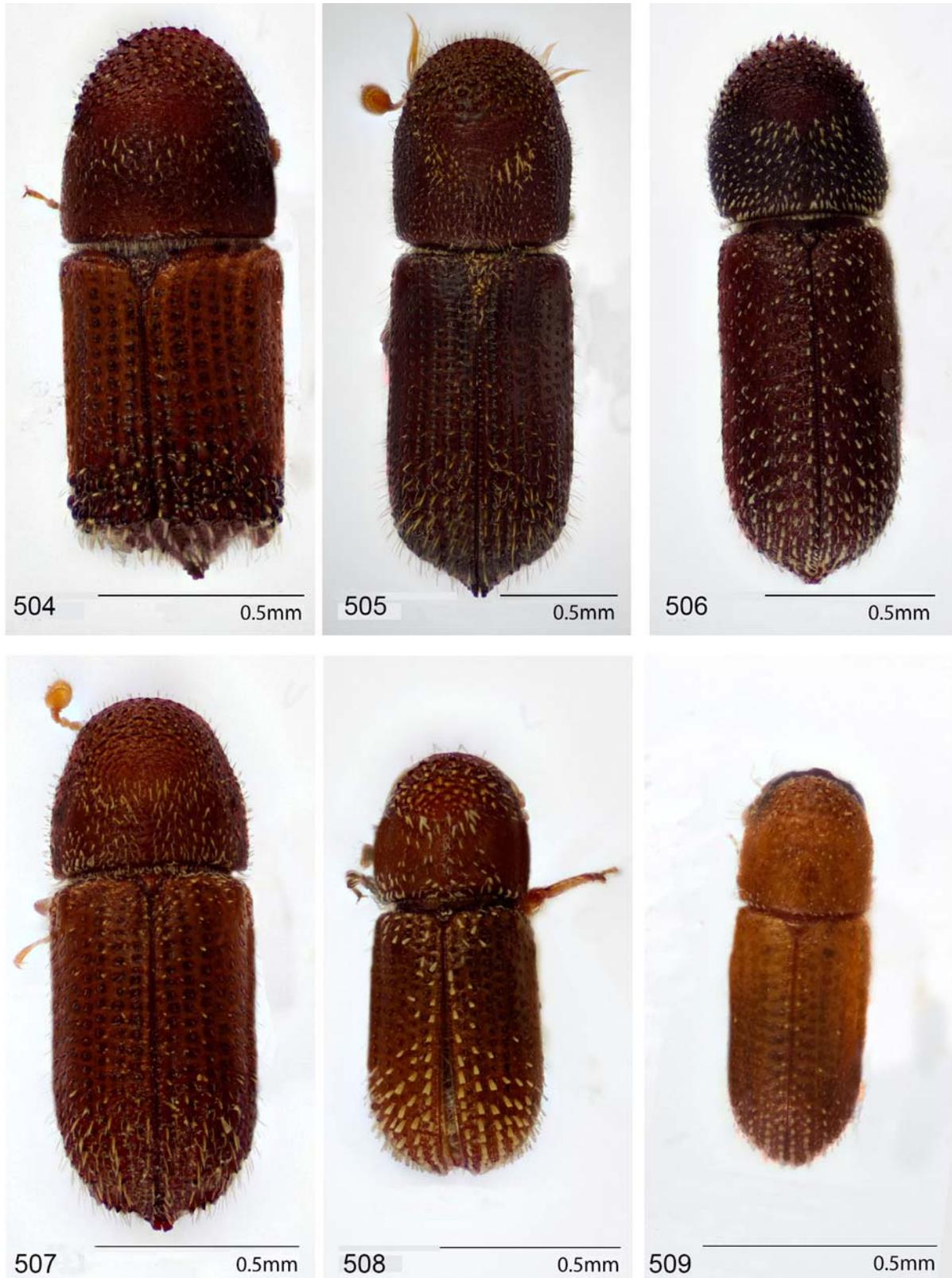
**Figures 486–491.** Dorsal habitus of various species. **486)** *Loganius ficus*. **487)** *Scolytopsis puncticollis*. **488)** *Scolytus dimidiatus*. **489)** *Phrixosoma antillicum*. **490)** *Hylastes tenuis*. **491)** *Phloeoborus scaber*.



**Figures 492–497.** Dorsal habitus of various species. 492) *Bothrosternus isolatus*. 493) *Cnesinus guadeloupensis*. 494) *Pagiocerus frontalis*. 495) *Sternobothrus bicaudatus*. 496) *Phloeotribus atlanticus*. 497) *Chramesus atlanticus*.



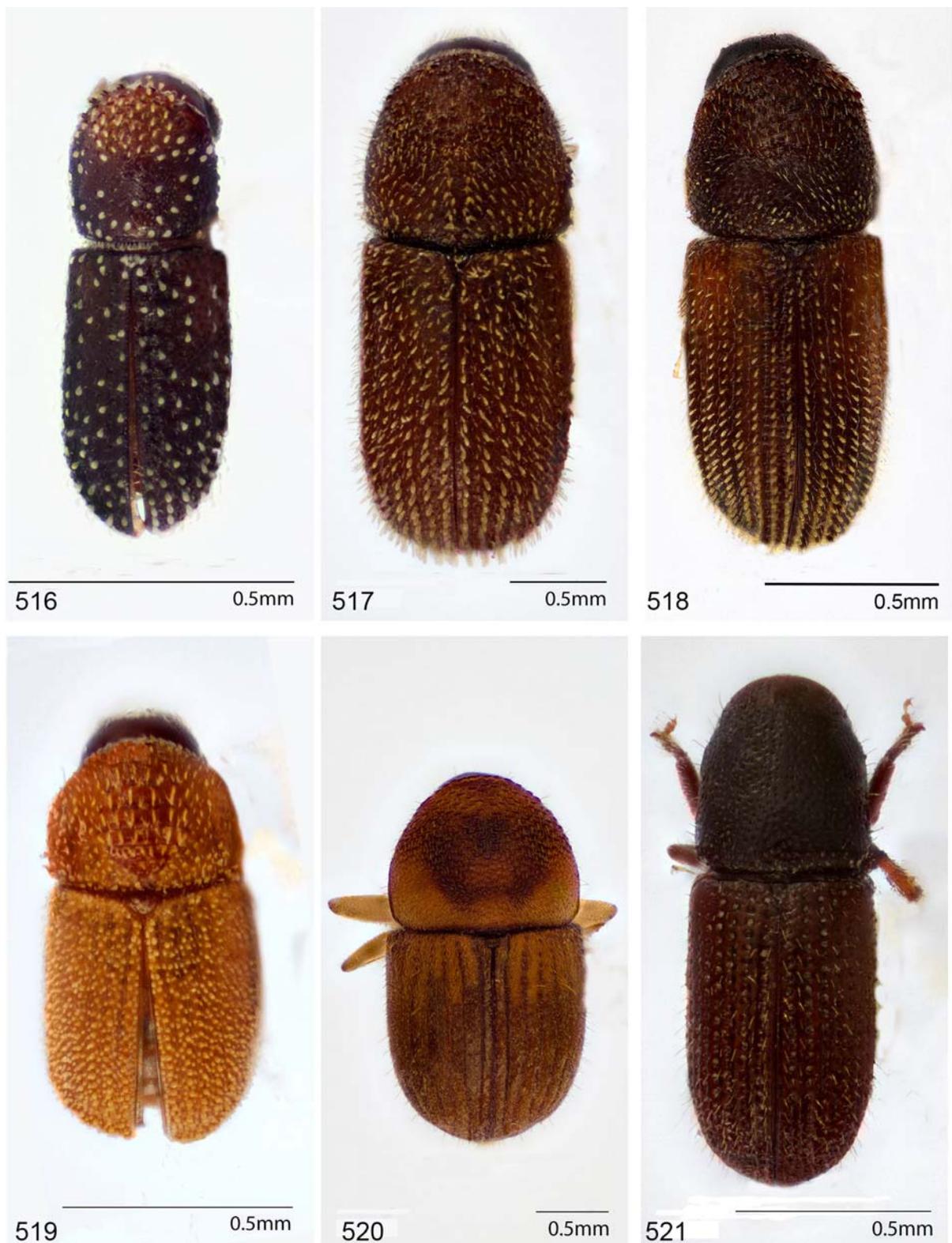
**Figures 498–503.** Dorsal habitus of various species. **498)** *Cladoctonus interruptus*. **499)** *Dendrosinus bourreriae*. **500)** *Phloeosinus neotropicus*. **501)** *Chaetophloeus cubensis*. **502)** *Liparthrum caymanensis*. **503)** *Trypanophellos neocopinus*.



**Figures 504–509.** Dorsal habitus of various species. **504)** *Hylocurus tumidosus*. **505)** *Micracis cubensis*. **506)** *Micracisella nanula*. **507)** *Parathysanoes absonus*. **508)** *Pseudothysanoes trunculus*. **509)** *Stevewoodia minutum*.



**Figures 510–515.** Dorsal habitus of various species. **510)** *Allothenemus minutus*. **511)** *Atomothenus unicus*. **512)** *Cryptocarenum seriatum*. **513)** *Hypocryphalus mangiferae*. **514)** *Hypothenemus obscurus*. **515)** *Microsomus atomus*.



**Figures 516–521.** Dorsal habitus of various species. **516)** *Pygmaeoborus cubensis*. **517)** *Scolytogenes jalappae*. **518)** *Stegomerus diversus*. **519)** *Trypolepis antillicus*. **520)** *Gymnochilus insularis*. **521)** *Microborus lautus*.



**Figures 522–527.** Dorsal habitus of various species. **522)** *Pseudohexacolus singularis*. **523)** *Pycnarthrum hispidum*. **524)** *Scolytodes atlanticus*. **525)** *Crypturgus alutaceus*. **526)** *Acanthotomicus mimicus*. **527)** *Ips cribricollis*.



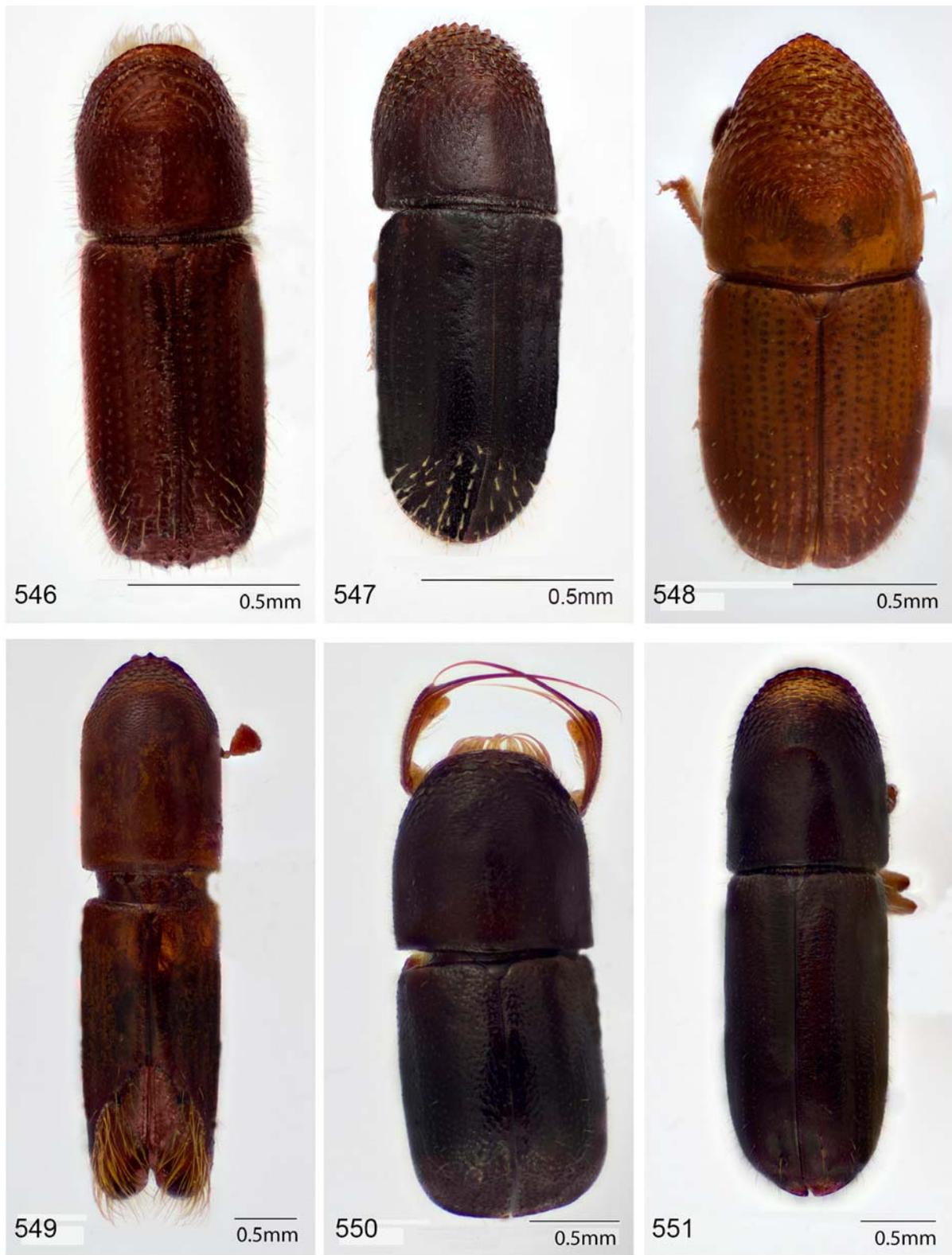
**Figures 528–533.** Dorsal habitus of various species. **528)** *Orthotomicus caelatus*. **529)** *Coccotrypes carpophagus*. **530)** *Dendrocranulus barbatulus*. **531)** *Neocultus thomasi*. **532)** *Premnobius cavipennis*. **533)** *Ambrosiodmus hagedorni*.



**Figures 534–539.** Dorsal habitus of various species. **534)** *Coptoborus vespatorius*. **535)** *Dryocoetoides capucinus*. **536)** *Euwallacea caraibicus*. **537)** *Sampsonius dampfi*. **538)** *Theoborus theobromae*. **539)** *Xyleborinus buscki*.



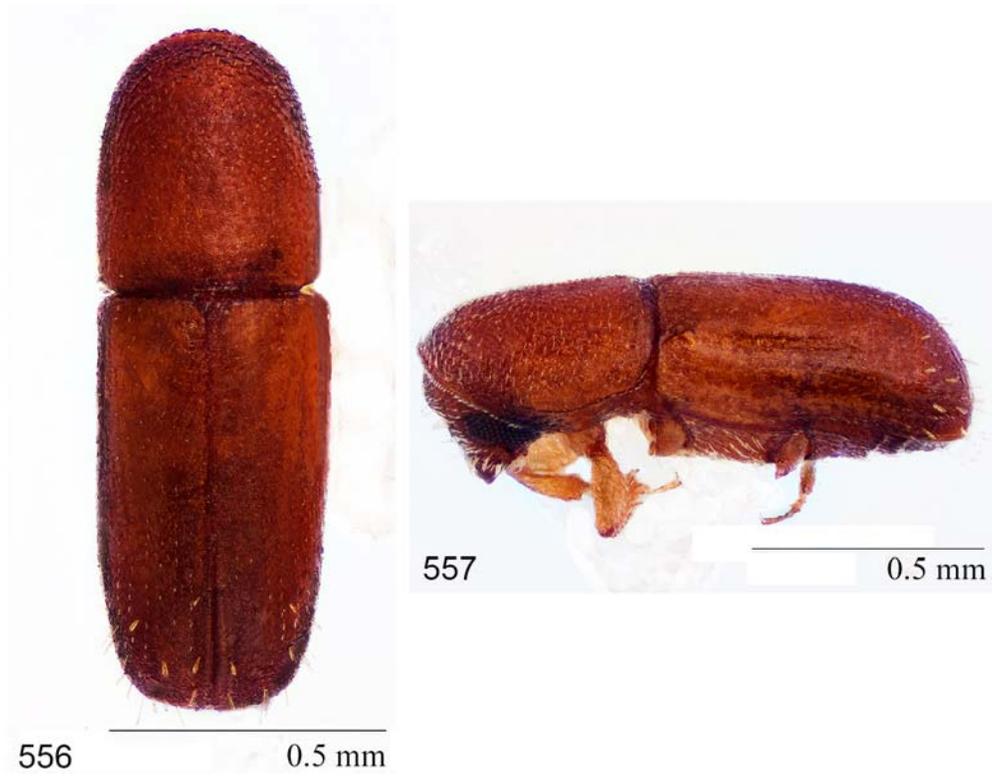
**Figures 540–545.** Dorsal habitus of various species. **540)** *Xyleborus exilis*. **541)** *Xylosandrus compactus*. **542)** *Araptus hymenaeae*. **543)** *Conophthorus insulatus*. **544)** *Gnathoraptus mandibularis*. **545)** *Pityoborus comatus* (female).



**Figures 546–551.** Dorsal habitus of various species. **546)** *Pityophthorus antillicus*. **547)** *Pseudopityophthorus absitus*. **548)** *Sphenoceros antillicus*. **549)** *Amphicranus hispaniolus*. **550)** *Corthylus tuberculatus*. **551)** *Gnathotrichus hispaniolus*.



**Figures 552–555.** Dorsal habitus of various species. **552)** *Gnathotrupes megapunctatus*. **553)** *Microcorthylus brevis*. **554)** *Monarthrum mali*. **555)** *Tricolus gracilis*.



**Figures 556–557.** Habitus of *Minyotrypetes primus*. **556)** Dorsal. **557)** Lateral.



## APPENDIX 1

## SPECIES OMITTED FROM WEST INDIES FAUNA

***Cnesinus gracilis* Blandford**

This species is recorded from Honduras to Colombia (Wood 2007) and was recorded from Dominica in Bright and Skidmore (1997). No additional specimens have been seen during this study and the identification may be an error. The species should be removed from West Indies list until confirmed specimens are seen.

***Corthylus luridus* Blandford**

This species was recorded from Guadeloupe by Bright (1985) and repeated in Wood and Bright (1992). The original record is evidently a transcription error since no Guadeloupe record has been found during this study; therefore *C. luridus* should be deleted from the West Indian fauna.

***Euwallacea validus* (Eichhoff)**

This species is recorded from Jamaica by Wood (2007) in the key to the South American species of *Euwallacea*. No details of this record are mentioned and no specimens have been seen during this study. The species is not included herein.

***Hylocurus alienus* Eichhoff**

This species was described from Cuba. The holotype, deposited in the NHMW, is destroyed and only the abdominal sternites remain on the pinning plate. No other specimens of this species have been seen and no additional specimens of a *Hylocurus* from Cuba have been seen. Therefore, it is not possible to identify this species.

***Hypothenemus birmanus* (Eichhoff)**

See comments in this treatment under *H. erectus* LeConte.

***Hypothenemus obrienorum* Atkinson**

This name is included in a list of the Scolytidae of Cuba by Vázquez et al. (2003). No formal description of this species has been found and the name is considered a *nomem nudum*.

***Micracis swainei* Blackman**

This species is recorded from throughout the southeastern United States through Mexico to Honduras. One specimen, in the USNM, is labeled "CUBA, at Miami, 19 Aug. 1957, Quarters". This

record needs to be verified, although Cuba is not an unlikely locality.

***Microborus lectus* Wood**

This species is known from Venezuela (Wood 2007), but was recorded from Dominica (Bright 1981a) based on one specimen in the USNM. This identification needs to be verified. Until this is done, this species should be deleted from the West Indies fauna.

***Monarthrum bifoveatum* Wood**

This species, described from Costa Rica and Venezuela, is listed as doubtful from the Dominican Republic by me in 1985 and that information was repeated in Wood and Bright (1992). Wood (2007) treats this species, but does not list the doubtful Dominican Republic record. An examination of the holotype and two paratypes showed that my identification was an error and the name should be deleted from the West Indian fauna.

***Monarthrum denticulatum* Wood**

This species was described from Guadeloupe as *Pterocyclon dentatum* Eggers 1941, but the name was preoccupied by Eggers, 1931. A replacement name, *Monarthrum denticulatum* Wood, 1981 was proposed.

The holotype of this species is in the NHMW and was examined in July, 2014. When received on loan, the head, pronotum, elytra and legs were missing, only the abdomen and hind wings remained on the mounting card. Therefore, it is not possible to identify this species.

***Monarthrum minutum* (Schedl)**

This species was described from Brazil and is listed from Cuba and Jamaica in Wood and Bright 1992. Those localities were mistakenly listed in Jamaica as *Monarthrum minutissimus* (Schedl) (Bright 1972) and in Cuba as *Microcorthylus minutus* Schedl (Bright 1981a), as a result of my misinterpretation of Schedl's species. Both localities refer to the same species and are herein listed as *Microcorthylus minutissimus* Schedl.

*Monarthrum minutum* is known from Argentina, Brazil and Venezuela (Wood 2007).

***Pityogenes chalcographus* (Linnaeus)**

This species is reported from Jamaica (Haack 2001). Repeated efforts to obtain specimens definitely collected from breeding populations have been unsuccessful. I assume the record from Jamaica refers to intercepted specimens and not from actual breeding populations. Until definite breeding populations can be found, this species should be deleted from the West Indies fauna.

***Pityophthorus concavus* Blackman.**

This species is recorded from Andros Island in the Bahamas in Turnbow and Thomas (2008). This is either a case of mis-recording or a transcription error since *P. concavus* occurs in north-eastern United States and adjacent Canada (Bright 1981b). No specimens so labeled were found in the FSCA (Thomas, personal communication).

***Scolytodes guyanaensis* (Schedl)**

This species is recorded from Guadeloupe by Wood and Bright (1992). This is evidently an error since no specimens have been seen from the West Indies that could be referred to this species and the Guadeloupe record is omitted from the distribution of this species given in Wood (2007). Two paratypes from "British Guyana" in the NHMW were examined. Until definite specimens are found in the West Indies, the species should be removed from the West Indies fauna.

***Scolytodes maurus* (Blandford)**

This species was recorded from Dominica by Bright (1982) and Wood (2007). Jordal (1998) comments that this record is probably not *S. maurus*, but is possibly *S. nitidissimus* (Eggers) or a related species. For the present, this opinion is accepted and *S. maurus* is removed from the West Indian fauna. More collecting is needed to resolve this question.

***Scolytus propinquus* Blandford**

This species is recorded from Cuba in Wood and Bright (1992) and repeated in Wood (2007). No specimens from Cuba have been seen and I can

not find the original reference noting the Cuba distribution. Until authentic specimens are seen, I have excluded this species from the West Indian fauna.

***Scolytus rugulosus* (Müller)**

This species is recorded from "Martinique (?)" by Barriga-Tuñón and Kirkendall (2015). It is a common, wide-spread species in Europe, Asia and Africa and has been introduced in North and South America. It is an important economic pest. No specimens have been seen from the West Indies during the preparation of this monograph and the source of the above mentioned Martinique record is not known. The species should not be included in the West Indian fauna until specimens from breeding populations are seen.

***Theoborus coatatus* (Sampson).**

This species was recorded from "Antilles Islands" by Wood (2007) with no additional locality data. The species was described from Trinidad and this locality is presumed to be the basis for this statement. Trinidad is not considered to be part of the West Indies and the species is therefore omitted in this treatment.

***Thysanoes frimbricornis* LeConte**

This species was recorded from Cuba (Bright 1985) with a questionable identification. This record was not repeated in the World Catalog (Wood and Bright 1992) nor was it recorded in any subsequent publication until Vázquez, Rodríguez and Zorrilla (2003) included it their Cuban checklist. This is a common species in eastern North America and Mexico. Atkinson and Peck (1994) record the species from "Biscayne" in Dade County, Florida so a West Indian distribution can be expected. However, no specimens were seen during preparation of this monograph and it seems best to exclude it from the West Indies fauna until its occurrence in the West Indies can be confirmed. The genus and species are not included in Appendix 2, but the genus is included in the key to the Micracidinae genera.

## APPENDIX 2

## TABLE OF WEST INDIAN SPECIES AND DISTRIBUTION

X = recorded; **AN**-Antigua; **BA**-Bahamas; **BR**-Barbados; **CI**-Cayman Islands; **CU**-Cuba; **DR**-Dominican Republic; **DM**-Dominica; **GR**-Grenada; **GU**-Guadeloupe; **HA**-Haiti; **JM**-Jamaica; **MA**-Martinique; **MS**-Montserrat; **NA**-Netherlands Antilles (Saba [SA], St. Eustatius [SE], Curaçao [CU]); **PR**-Puerto Rico; **SN**-Saint Kitts-Nevis (Nevis [NE], Redonda [RE]), Saint Kitts [SK]); **SL**-Saint Lucia; **SV**-Saint Vincent and the Grenadines; **VB**-Virgin Islands (British); **VU**-Virgin Islands (U. S.); **OT**-Others: (Desecheo Island [DI]; Isle of Pines [IP]; Mona Island [MI]; Navassa Island [NI]; Turks and Caicos [TC]).

Species	AN	BA	BR	CI	CU	DR	DM	GR	GU	HA	JM	MA	MS	NA	PR	SN	SL	SV	VB	VU	OT
1. <i>Acanthotomicus minutus</i> (Schedl)						X	X	X			X							X			
2. <i>Allothenemus exquisitus</i> Bright						X															
3. <i>Allothenemus minutus</i> B. and T.															X						
4. <i>Ambrosiodinus devexatus</i> (Wood)						X	X					X			X					X	
5. <i>Ambrosiodinus hagedorni</i> (Iglesias)		X	X	X	X	X	X	X	X	X	X	X	X	SA	X				X	X	
6. <i>Ambrosiodinus infidelis</i> Bright						X															
7. <i>Ambrosiodinus nuperus</i> (Bright)											X										
8. <i>Ambrosiodinus obliquus</i> (LeConte)						X	X	X	X			X			X		X				X
9. <i>Amphicramus hispaniolus</i> Bright						X															
10. <i>Amphicramus taino</i> Bright						X															
11. <i>Araptus adustus</i> Bright											X										
12. <i>Araptus beckeri</i> Bright						X					X										
13. <i>Araptus bituberculatus</i> Bright															X						
14. <i>Araptus caperatus</i> Bright											X										
15. <i>Araptus ciseruatus</i> Bright						X															
16. <i>Araptus cubensis</i> (Blackman)						X															
17. <i>Araptus culmenifrons</i> Bright																					
18. <i>Araptus decorus</i> (Bright)											X										
19. <i>Araptus ferrugineus</i> Bright									X												
20. <i>Araptus fuscus</i> Bright						X															
21. <i>Araptus grenadaensis</i> Bright								X													
22. <i>Araptus guadeloupanus</i> Wood									X												
23. <i>Araptus guadelouperensis</i> (Schedl)							X	X	X			X					X				
24. <i>Araptus howdeni</i> Bright											X										
25. <i>Araptus hymenaeae</i> (Eggers)			X			X			X	X	X		X		X		X	X			X
26. <i>Araptus incolus</i> Bright								X													
27. <i>Araptus ineditus</i> Bright						X	X						X								
28. <i>Araptus insulanus</i> Bright																					
29. <i>Araptus melampus</i> Bright								X						CU							

## Appendix 2 continued.

Species	AN	BA	BR	CI	CU	DR	DM	GR	GU	HA	JM	MA	MS	NA	PR	SN	SL	SV	VB	VU	OT
30. <i>Arapatus montanus</i> (Bright)											X										
31. <i>Arapatus niger</i> (Bright)						X					X										
32. <i>Arapatus nigriculus</i> Bright				X	X																
33. <i>Arapatus pallidus</i> (Blackman)				X						X				X							
34. <i>Arapatus politus</i> (Blandford)						X					X										
35. <i>Arapatus squamosus</i> Bright							X					X					X	X			
36. <i>Arapatus turbowi</i> Bright						X															
37. <i>Arapatus ustulatus</i> Bright								X													
38. <i>Arapatus wintoni</i> Bright																	X				
39. <i>Atomothenus unicus</i> Bright						X															
40. <i>Bothrostermus isolatus</i> Bright							X		X		X						X				
41. <i>Chaetophloeus atlanticus</i> Bright		X																			
42. <i>Chaetophloeus bahamaensis</i> Bright		X																			
43. <i>Chaetophloeus chapini</i> (Blackman)											X										
44. <i>Chaetophloeus cubensis</i> Bright					X	X															
45. <i>Chaetophloeus howdeni</i> Bright											X										
46. <i>Chaetophloeus insularis</i> (Blackman)		X			X		X								X						?
47. <i>Chaetophloeus longisetum</i> Bright											X										
48. <i>Chaetophloeus minutus</i> Bright								X							X						
49. <i>Chaetophloeus montanus</i> Bright						X															
50. <i>Chaetophloeus woodruffi</i> Bright						X															
51. <i>Chramesus atlanticus</i> Bright and Torres						X									X						
52. <i>Chramesus lepidotus</i> Bright								X													
53. <i>Chramesus materi</i> Bright																	X				
54. <i>Chramesus opacicollis</i> Eggers					X		X	X	X		X		X				X	X			
55. <i>Chramesus palearis</i> Bright																					X
56. <i>Chramesus rotundatus</i> (Chapuis)							X		X			X			X		X	X			
57. <i>Chramesus scabiosus</i> Bright								X	X			X					X	X			
58. <i>Chramesus squamosus</i> Bright													X								
59. <i>Cladotomus brevisetosus</i> Bright				X		X					X				X						
60. <i>Cladotomus cubensis</i> (Wood)					X	X					X										
61. <i>Cladotomus interruptus</i> (Eggers)	X								X				X								
62. <i>Cladotomus major</i> (Eggers)									X						X						
63. <i>Cladotomus minor</i> Bright																			X		X
64. <i>Cladotomus peckorum</i> Bright									X									X			
65. <i>Cladotomus torosus</i> Bright																					
66. <i>Cladotomus tuberosus</i> Bright							X				X						X				
67. <i>Cresimus amplus</i> Bright						X											X				





## Appendix 2 continued.

Species	AN	BA	BR	CI	CU	DR	DM	GR	GU	HA	JM	MA	MS	NA	PR	SN	SL	SV	VB	VU	OT
144. <i>Hypothenemus carinaefrons</i> Bright				X														X			
145. <i>Hypothenemus collinus</i> Bright													X				X				
146. <i>Hypothenemus columbi</i> Hopkins		X	X		X	X	X	X				X			X		X	X		X	NI
147. <i>Hypothenemus erinatus</i> Bright																				X	
148. <i>Hypothenemus erudiae</i> (Panzer)	X	X	X	X	X	X	X		X	X			X	SA	X	NE	X	X	X	X	NI
149. <i>Hypothenemus discordis</i> Bright						X														X	
150. <i>Hypothenemus dubiosus</i> Bright									X												
151. <i>Hypothenemus erectus</i> LeConte		X	X	X	X	X	X	X	X		X	X	X		X		X	X		X	
152. <i>Hypothenemus eruditus</i> (Westwood)	X	X	X	X	X	X	X	X	X		X	X	X	SA	X		X	X	X	X	NI
153. <i>Hypothenemus exceptus</i> Bright		X	X	X				X		X			X	CU		RE		X		X	
154. <i>Hypothenemus exiguus</i> (Wood)		X					X		X												
155. <i>Hypothenemus fuscicollis</i> (Eichhoff)					X?						X		X					X			
156. <i>Hypothenemus glabratus</i> (Schedl)		X	X		X		X	X	X		X	X	X	SA	X		X	X	X	X	
157. <i>Hypothenemus gossypii</i> (Hopkins)					X																
158. <i>Hypothenemus granulatus</i> Bright														CU							
159. <i>Hypothenemus hampei</i> (Ferrari)					X						X	X			X						
160. <i>Hypothenemus hirsutus</i> (Wood)						X															
161. <i>Hypothenemus ignotus</i> Bright			X																		
162. <i>Hypothenemus improvidus</i> Bright							X										X				
163. <i>Hypothenemus indistinctus</i> Bright											X										
164. <i>Hypothenemus inordinatus</i> Bright				X																	
165. <i>Hypothenemus interstitialis</i> (Hopkins)					X	X	X	X			X			SA	X						
166. <i>Hypothenemus javanus</i> (Eggers)	X	X	X	X	X	X	X		X		X		X	CU	X		X	X	X	X	NI
167. <i>Hypothenemus leptosquamis</i> Bright														CU							
168. <i>Hypothenemus liliputianus</i> Bright								X												X	
169. <i>Hypothenemus nanoparvus</i> Bright								X												X	
170. <i>Hypothenemus nesiotus</i> Bright						X			X			X							X	X	
171. <i>Hypothenemus obscurifrons</i> Bright	X					X									X						
172. <i>Hypothenemus obscurus</i> (Fabricius)	X	X	X	X	X	X	X	X	X	X	X	X	X	CU	X		X	X	X	X	NI TC
173. <i>Hypothenemus opacus</i> (Eichhoff)					X						X		X		X						
174. <i>Hypothenemus parascamosus</i> Bright			X																		
175. <i>Hypothenemus parvulus</i> Bright														SA	X	RE	X				
176. <i>Hypothenemus paulus</i> Bright												X									
177. <i>Hypothenemus perexiguus</i> Bright		X			X				X			X			X				X	X	NI
178. <i>Hypothenemus pilosus</i> Hopkins				X																	
179. <i>Hypothenemus ponticus</i> Bright														CU							







## Appendix 2 continued.

Species	AN	BA	BR	CI	CU	DR	DM	GR	GU	HA	JM	MA	MS	NA	PR	SN	SL	SV	VB	VU	OT
292. <i>Pseudothysanoes caribbeanensis</i> Bright					X																
293. <i>Pseudothysanoes cracentis</i> Bright														CU						X	
294. <i>Pseudothysanoes granulatus</i> Bright									X												
295. <i>Pseudothysanoes guadeloupensis</i> Bright						X															
296. <i>Pseudothysanoes incertissimus</i> Bright					X																
297. <i>Pseudothysanoes insularis</i> (Blackman)									X												
298. <i>Pseudothysanoes lautus</i> Bright	X												X								
299. <i>Pseudothysanoes leptus</i> Bright.		X																			
300. <i>Pseudothysanoes magnispinatus</i> B. & T.				X							X				X		X			X	
301. <i>Pseudothysanoes marginatus</i> Bright						X															
302. <i>Pseudothysanoes masneri</i> Bright						X															
303. <i>Pseudothysanoes minor</i> (Blackman)					X																
304. <i>Pseudothysanoes minutissimus</i> Bright													X								
305. <i>Pseudothysanoes muricatus</i> Bright						X															
306. <i>Pseudothysanoes perexiguus</i> Bright						X															
307. <i>Pseudothysanoes securigerus</i> (Blackman)										X					X					X	
308. <i>Pseudothysanoes smithi</i> Bright					X																
309. <i>Pseudothysanoes truncatus</i> Bright						X															
310. <i>Pycnarthrum hispidum</i> (Ferrari)	X	X		X	X	X	X	X	X		X	X	X	CU SA	X	SK	X	X	X		
311. <i>Pycnarthrum pallidum</i> (Chapuis)	X		X					X	X		X				X			X			
312. <i>Pygmaeoborus cubensis</i> Bright					X																
313. <i>Sampsonius dampfi</i> Schedl											X										
314. <i>Scolytodes anthracinus</i> Bright															X						
315. <i>Scolytodes aquilus</i> Bright																		X			
316. <i>Scolytodes aridus</i> Bright													X								
317. <i>Scolytodes atlanticus</i> B. and T.						X							X				X				
318. <i>Scolytodes atomus</i> Bright									X			X									
319. <i>Scolytodes bellus</i> Bright						X															
320. <i>Scolytodes cubensis</i> (Schedl)					X	X															
321. <i>Scolytodes glaber</i> (Eichhoff)		X		X	X	X		X	X		X		X	SA	X						
322. <i>Scolytodes iviei</i> Bright	X								X				X			SK					
323. <i>Scolytodes longisetum</i> Bright																					MI
324. <i>Scolytodes nitidissimus</i> (Eggers)						X			X								X				
325. <i>Scolytodes notatus</i> (Eggers)			X			X		X	X						X		X				
326. <i>Scolytodes oblongus</i> (Eggers)									X												
327. <i>Scolytodes obtusiceps</i> Bright						X															
328. <i>Scolytodes peckorum</i> Bright							X	X										X			

## Appendix 2 continued.

Species	AN	BA	BR	CI	CU	DR	DM	GR	GU	HA	JM	MA	MS	NA	PR	SN	SL	SV	VB	VU	OT
329. <i>Scolytodes pleisopolitus</i> Bright									X									X			
330. <i>Scolytodes politus</i> Bright							X										X				
331. <i>Scolytodes pseudobicolor</i> (Eggers)					X							X		SA	X		X				
332. <i>Scolytodes puertoricensis</i> B. & T.														SA	X						
333. <i>Scolytodes sabaensis</i> Bright																					
334. <i>Scolytodes steineri</i> Bright			X																		
335. <i>Scolytodes striatulus</i> Wood			X			X	X		X		X		X								
336. <i>Scolytodes torresi</i> Bright					X																
337. <i>Scolytogenes jalappae</i> (Letzner)	X			X	X	X		X	X		X	X	X		X						
338. <i>Scolytopsis puncticollis</i> Blandford					X																
339. <i>Scolytus dimidiatus</i> Chapuis					X					X											
340. <i>Sphenoceros antillicus</i> Bright						X						X					X				
341. <i>Stegomerus diversus</i> Bright															X						
342. <i>Sternobolrus bicaudatus</i> (Blandford)								X													
343. <i>Steveoodia atomus</i> Bright															X						
344. <i>Steveoodia minutum</i> Bright												X					X				
345. <i>Theoborus atlanticus</i> (B. and T.)						X									X						
346. <i>Theoborus bellus</i> (Bright and Torres)								X							X						
347. <i>Theoborus crinitulus</i> (Wood)																	X				
348. <i>Theoborus puertoricensis</i> B. & T.						X									X						
349. <i>Theoborus ricini</i> (Eggers)						X					X				X						
350. <i>Theoborus theobromae</i> Hopkins			X		X	X	X	X	X			X	X	SA			X	X			
351. <i>Tricolus animatus</i> Bright						X															
352. <i>Tricolus endomus</i> Bright																	X	X			
353. <i>Tricolus gracilis</i> Eggers						X			X		X										
354. <i>Tricolus incomptus</i> Bright						X															
355. <i>Tricolus unidentatus</i> Bright											X										
356. <i>Trypanophellos minutum</i> Bright																					NI
357. <i>Trypanophellos necopinus</i> Bright				X	X																
358. <i>Trypolepis antillicus</i> Bright								X													
359. <i>Xyleborinus andrewesi</i> (Blandford)				X							X										
360. <i>Xyleborinus buscki</i> Hopkins						X			X			X					X				
361. <i>Xyleborinus echinatus</i> Bright																	X				
362. <i>Xyleborinus gracilis</i> (Eichhoff)						X	X	X	X				X		X						
363. <i>Xyleborinus howdeni</i> (Bright)											X										
364. <i>Xyleborinus insulosus</i> B. and T.															X						
365. <i>Xyleborinus intersetosus</i> (Blandford)						X			X			X									
366. <i>Xyleborinus reconditus</i> (Schedl)																	X				

## Appendix 2 continued.

Species	AN	BA	BR	CI	CU	DR	DM	GR	GU	HA	JM	MA	MS	NA	PR	SN	SL	SV	VB	VU	OT
367. <i>Xyleborus advena</i> Bright															X						
368. <i>Xyleborus affinis</i> Eichhoff	X	X	X	X	X	X	X	X	X		X	X	X	SA	X	SK	X	X	X	X	
369. <i>Xyleborus anthracinus</i> Bright					X																
370. <i>Xyleborus bispinatus</i> Eichhoff						X	X	X				X	X				X	X			
371. <i>Xyleborus distinctus</i> Bright								X							X		X				
372. <i>Xyleborus exilis</i> Schedl															X		X				
373. <i>Xyleborus ferrugineus</i> (Fabricius)	X	X	X	X	X	X	X	X	X	X	X	X	X	CU SA	X	NE	X	X	X	X	NI
374. <i>Xyleborus geayi</i> Hagedorn								X													
375. <i>Xyleborus macer</i> Blandford															X						
376. <i>Xyleborus pseudotenius</i> Schedl							X	X	X			X					X	X			
377. <i>Xyleborus pubescens</i> Zimmermann		X			X	X				X		X									IP
378. <i>Xyleborus pusio</i> Eggers						X	X		X		X	X						X			
379. <i>Xyleborus spinulosus</i> Blandford	X				X	X	X	X	X	X	X	X	X	SA	X		X	X	X	X	
380. <i>Xyleborus volvulus</i> (Fabricius)	X	X	X	X	X	X	X	X	X	X	X	X	X	CU SA	X		X	X	X	X	NI IP
381. <i>Xyleborus xylographus</i> (Say)					X?				X						X						
382. <i>Xylosandrus compactus</i> (Eichhoff)		X		X	X	X	X	X	X			X	X	SA	X		X	X	X	X	
383. <i>Xylosandrus erassiusculus</i> (Motsch.)		X													X						
384. <i>Xylosandrus cubensis</i> Bright					X																
385. <i>Xylosandrus curtulus</i> (Eichhoff)	X	X				X	X	X	X			X					X				X
386. <i>Xylosandrus morigerus</i> (Blandford)									X			X			X						
Totals	23	53	26	36	85	136	72	67	92	24	86	67	59	49	106	13	87	50	29	52	44



## INDEX

This index includes all subfamily, tribal, generic and specific names used in this monograph. Synonyms are given in *italics*. Main page entries are given in **bold**.

- aberrans* Wichmann, *Microborus* ..... **185**  
*abdominalis* Hopkins, *Hypothenemus* (=columbi Hopkins) ..... 129  
*abnormalis* Bright, *Pityophthorus* ..... **355**, 361  
*absitus* Bright, *Pseudopityophthorus* ..... **393**, 399, 455, 467  
*absonus* Bright, *Hylocurus* ..... **73**, 79  
*absonus* Bright, *Parathysanoes* ..... **82**, 439, 450, 460  
*Acanthotomicus* Blandford ..... **222**  
*aculus* Bright, *Pityophthorus* ..... **56**, 361  
*acutus* Bright, *Pseudothysanoes* ..... **86**, 93  
*adustus* Bright, *Araptus* ..... **317**, 321  
*adustus* Bright, *Hypothenemus* ..... **122**, 130  
*advena* Blandford, *Coccotrypes* ..... **230**, 239  
*advena* Bright, *Xyleborus* ..... **288**, 299  
*aequaliclavatus* Schedl, *Hypothenemus* (=fuscicollis (Eichhoff)) ..... 141  
*affinis* Eichhoff, *Xyleborus* ..... **288**, 299  
*africanus* (Hopkins), *Hypothenemus* ..... **123**, 130  
*alienus* Eichhoff, *Hylocurus* ..... **471**  
*Allothenemus* Bright and Torres ..... **105**  
*alpestris* Bright, *Corthylus* ..... 399, **400**, 447  
*alutaceus* Schwarz, *Crypturgus* .... **219**, 445, 453, 463  
*ambiguum* Bright, *Monarthrum* ..... **416**, 421  
*ambiguus* Bright, *Dendrocranulus* ..... **241**, 245  
*Ambrosiodmus* Hopkins ..... **251**  
*amoenus* Bright, *Pseudothysanoes* ..... **87**, 93  
*Amphicranus* Erichson ..... **95**  
*ampliocollis* Eichhoff, *Xyleborus* (=ferrugineus (Fabricius)) ..... 294  
*amplipennis* Hopkins, *Hypothenemus* (=columbi Hopkins) ..... 129  
*amplissimus* Bright and Torres, *Hypothenemus* ..... **124**, 130  
*amplus* Bright, *Cnesinus* ..... **23**, 27  
*andrewesi* (Blandford), *Xyleborinus* ..... **279**  
*animatus* Bright, *Tricolus* ..... **423**, 425  
*annectans* LeConte, *Pityophthorus* ..... **356**  
*anomala* Bright, *Hylocurus* ..... **72**, 79  
*anonae* Hopkins, *Coccotrypes* (=carpophagus (Hornung)) ..... 231  
*anonae* Hopkins, *Xylocleptes* (=carbonarius (Ferrari)) ..... 243  
*anthricinus* Bright, *Scolytodes* ..... **198**, 295  
*anthricinus* Bright, *Xyleborus* ..... **290**, 299  
*antillicum* Bright, *Monarthrum* ..... **416**, 421, 447  
*antillicum* Bright, *Phrixosoma* ..... **16**, 448, 457  
*antillicum* Bright, *Trypolepis* ..... **182**, 452, 462  
*antillicus* Bright, *Hylocurus* ..... **17**  
*antillicus* Bright, *Pityophthorus* .... **357**, 361, 455, 467  
*antillicus* Bright, *Sphenocerus* ..... **394**, 447, 456, 467  
*aquilus* Bright, *Scolytodes* ..... **198**, 205  
*Araptus* Eichhoff ..... **313**  
*arecae* (Hornung), *Hypothenemus* ..... **125**, 130  
*aridus* Bright, *Scolytodes* ..... **199**, 205  
*aspericollis* Eggers, *Xyleborus* (=gracilis (Eichhoff)) ..... 281  
*atlanticus* Bright, *Chaetophloeus* ..... **55**, 59, 63  
*atlanticus* Bright, *Chramesus* ..... **37**, 449, 458  
*atlanticus* Bright, *Scolytodes* ..... **200**, 205, 440, 445, 453, 463  
*atlanticus* Bright, *Theoborus* ..... 261, **272**  
*atlanticus* Schedl, *Phloeotribus* ..... **33**, 442, 449, 458  
*Atomothenus* Bright ..... **106**  
*atomus* Bright, *Microsomus* ..... **178**, 451, 461  
*atomus* Bright, *Scolytodes* ..... **200**, 205  
*atomus* Bright, *Stevewoodia* ..... **102**  
*atomus* Hopkins, *Hypothenemus* ..... **126**, 130  
*auspicatus* Bright, *Pityophthorus* ..... **358**, 361  
*avulsus* (Eichhoff), *Ips* ..... **224**, 227  
*bahamaensis* Bright, *Chaetophloeus* ..... **56**, 59, 63  
*bakeri* Hopkins, *Coccotrypes* (=carpophagus (Hornung)) ..... 231  
*barbatus* Bright, *Dendrocranulus* ..... **242**, 439, 445, 453, 464  
*beckeri* Bright, *Araptus* ..... **318**, 321  
*beckeri* Bright, *Xyleborus* ..... **264**, 299  
*bellus* Bright, *Scolytodes* ..... **201**, 205  
*bellus* (Bright and Torres), *Theoborus* ..... **261**, 273  
*bicaudatus* (Blandford), *Sternobothrus* .. **30**, 449, 458  
*bifoveatum* Wood, *Monarthrum* ..... **471**  
*bifurcatus* Bright, *Hypothenemus* ..... **127**, 177  
*bigranulatus* Bright, *Pityophthorus* ..... **359**, 361  
*birmanus* (Eichhoff), *Hypothenemus* ..... **471**  
*bispinatus* Eichhoff, *Xyleborus* ..... **291**  
*bituberculatus* Bright, *Araptus* ..... **319**, 321  
*bituberculatus* Eggers, *Stephanoderes* (=javanus (Eggers)) ..... 50  
*boops* Blandford, *Microborus* ..... **186**, 188  
*borrichiae* Wood, *Pityophthorus* ..... **360**  
*Bothrosternus* Eichhoff ..... **21**  
*Bothrosternini* ..... 21  
*bourreriae* Schwarz, *Dendrosinus* ..... **52**, 449, 459  
*brevis* Eggers, *Microcorthylus* ..... **411**, 412, 456, 468  
*brevisetosus* Bright, *Chramesus* (=opacicollis Eggers) ..... 40  
*brevisetosus* Bright, *Cladoctonus* ..... **45**, 50  
*brevisetosus* Bright, *Cnesinus* ..... **24**, 27  
*brighti* Schedl, *Xyleborus* (=howenae (Bright)) .... 282  
*brittoni* (Schedl), *Monarthrum* ..... **417**, 421  
*brunneipennis* Hopkins, *Hypothenemus* (=columbi Hopkins) ..... 129  
*brunneus* Hopkins, *Stephanoderes* (=javanus (Eggers)) ..... 150  
*bullatum* Bright, *Monarthrum* ..... **418**, 421  
*buscki* Hopkins, *Stephanoderes* (=obscurus (Fabricius)) ..... 156  
*buscki* (Hopkins), *Xyleborinus* **279**, 285, 446, 454, 465

- caelatus (Eichhoff), Orthotomicus ..... **228**, 453, 464  
californicus Hopkins, Hypothenemus ..... **27**, 130  
calligraphus interstitialis (Eichhoff), Ips ..... **224**  
caperatus Bright, Araptus ..... **319**, 321  
capillosus Bright, Pityophthorus ..... **360**, 361  
*capucinoides* Eggers, Xyleborus (=capucinus  
(Eichhoff) ..... 259  
capucinus (Eichhoff), Dryocoetoides  
..... **59**, 439, 446, 454, 465  
caraibicum Schedl, Phrixosoma ..... **17**  
caraibicus (Eggers), Euwallacea .... **264**, 446, 454, 465  
*caraibicus* Eggers, Pagiocerus (=frontalis Fabricius))  
..... 29  
*caraibicus* Schedl, Poecilips (=cyperi Beeson)) .... 232  
*caraibicus* Eggers (=heveae (Blackman)) ..... 109  
*caraibicus* Schedl, Cryphalomorphus (=jalapae  
(Letzner)) ..... 180  
*caribaeus* Blackman, Neodryocoetes (=hymenaeae  
(Eggers)) ..... 329  
carbonarius (Ferrari), Dendrocranulus ..... **243**  
caribensis Bright, Pseudothysanoes ..... **87**, 93  
carinafrons Bright, Hypothenemus ..... **128**, 130  
carpophagus (Hornung), Coccotrypes ... **231**, 453, 464  
cavipennis Eichhoff, Premnobius ..... **249**, 454, 464  
caymanensis Bright, Dendrocranulus ..... **244**  
caymanensis Bright, Liparthrum .... **65**, 443, 450, 459  
caymanensis Bright, Microborus ..... **187**, 188, 444  
caymanensis Bright, Phloeotribus ..... **33**, 34  
*ceibae* Hopkins, Hypothenemus (=interstitialis  
(Hopkins)) ..... 148  
Chaetophloeus LeConte ..... **53**  
chalcographus (Linnaeus), Pityogenes ..... 472  
chapini (Blackman), Chaetophloeus ..... **56**, 59, 63  
Chramesus LeConte ..... **36**  
ciseruditus Bright, Araptus ..... **320**, 321  
Cladoctonus Strohmeier ..... **44**  
Cnesinus LeConte ..... **22**  
Cnestus Sampson ..... **257**  
coatatus (Sampson), Theoborus ..... 472  
Coccotrypes Eichhoff ..... **228**  
collinum Bright, Monarthrum ..... **419**, 421  
collinus Bright, Hypothenemus ..... **129**, 130  
columbi Hopkins, Hypothenemus ..... **129**, 139  
comatus (Zimmermann), Pityoborus .... **347**, 455, 466  
*comosus* Bright, Hypothenemus (=fuscicollis  
(Eichhoff)) ..... 141  
compactus (Eichhoff), Xylosandrus  
..... **306**, 311, 455, 466  
*concaivfrons* Bright and Torres, Hypothenemus  
(=africanus Hopkins) ..... 123  
concaivus Blackman, Pityophthorus ..... 472  
centralis Bright, Pityophthorus ..... 361, **362**  
concinnus Bright, Gnatholeptus ..... **343**  
confractus Bright, Pityophthorus ..... **363**, 369  
confusus bellus Blackman, Pityophthorus ..... **363**  
confusus sequestus Bright, Pityophthorus ... **364**, 369  
congruus Bright, Pityophthorus ..... **364**, 369  
Conophthorus Hopkins ..... **340**  
convexicollis Bright and Torres, Pityophthorus  
..... **365**, 369  
convexus Bright, Dendrocranulus ..... **244**, 245  
convexus Bright, Pityophthorus ..... **366**, 369  
Coptoborus Hopkins ..... **258**  
Corthylinae ..... 310  
Corthylini ..... 395  
Corthylocurus Wood ..... **397**  
Corthylus Erichson ..... **398**  
cracentis Bright, Pseudothysanoes ..... **88**  
crassiusculus (Motschulsky), Xylosandrus ... **308**, 311  
cristatus (Fabricius), Dryocoetoides ..... **260**, 261  
cribricollis (Eichhoff), Ips ..... **225**, 227, 445, 453, 463  
crinatus Bright, Hypothenemus ..... **131**, 141  
crintulus (Wood), Theoborus ..... 261, **274**  
crudiae (Panzer), Hypothenemus ..... **131**, 141  
Cryphalinae ..... 103  
Cryphalini ..... 105  
Cryptocarenus Eggers ..... **107**  
Crypturgus Erichson ..... **219**  
Crypturginae ..... 219  
Crypturgini ..... 219  
*cubanus* Eggers, Thamnurgides (=advena Blandford)  
..... 230  
cubensis (Blackman), Araptus ..... **321**  
cubensis Blackman, Cnesinus ..... **24**, 27  
cubensis Blackman, Micracis ... **80**, 439, 443, 450, 460  
cubensis Bright, Chaetophloeus .. **57**, 59, 63, 450, 459  
cubensis Bright, Pygmaeoborus ..... **179**, 452, 462  
cubensis Bright, Xylosandrus ..... **308**, 311  
*cubensis* Hopkins, Stephanoderes (=erectus LeConte)  
..... 134  
*cubensis* Schedl, Pityophthorus (=pulicarius  
Zimmermanni)) ..... 382  
cubensis (Schedl), Scolytodes ..... **202**, 205  
cubensis (Wood), Cladoctonus ..... **46**, 50  
*cubensis* Wood, Scolytopsis (=puncticollis Blandford)  
..... 12  
culmenifrons Bright, Araptus ..... **321**, 322  
curiosus Bright, Corthylus ..... 399, **401**  
*curtuloides* Eggers, Xyleborus (=curtulus (Eichhoff))  
..... 309  
curtulus (Eichhoff), Xylosandrus ..... **309**, 311  
*cuspidatus* Eggers, Hylocurus (=quadrispinosus  
Blackman) ..... 76  
*cylindricus* Schedl, Coccotrypes (=robustus Eichhoff)  
..... 239  
cyperi (Beeson), Coccotrypes ..... **232**, 239  
dactyliperda (Fabricius), Coccotrypes ..... **234**, 239  
dampfi Schedl, Sampsonius ..... **271**, 454, 465  
decorus (Bright), Araptus ..... **323**, 327  
Dendrocranulus Schedl ..... **240**  
Dendroctonus Erichson ..... **36**  
Dendrosinus Chapuis ..... **51**  
*dentatum* (Eggers), Monarthrum (=denticulatum  
Wood) ..... 471  
denticulatum Wood, Monarthrum ..... 471  
*denticulatus* Eggers, Pityophthorus (=eggersianus  
Schedl) ..... 368  
*deplanatus* Eggers, Chramesus (=rotundatus  
(Chapuis)) ..... 42  
*depressus* Eichhoff, Stephanoderes (=areccae

- (Horning)) ..... 125  
*devoxulus* (Wood), *Ambrosiodmus* ..... 252, 255  
*devoxus* Wood, *Xyleborus* (= *devoxulus* (Wood)) .... 252  
*devius* Schedl, *Neodryocoetes* (= *pallidus* (Blackman))  
..... 336  
*diadematus* Eggers, *Cryptocarenum* ..... 108, 111  
*dimidiatus* Chapuis, *Scolytus* ..... 13, 441, 448, 457  
*discedens* Eggers, *Hexacolus* (= *notatus* (Eggers)) 207  
*discedens* Schedl, *Stephanoderes* (= *erectus* LeConte)  
..... 134  
*discordum* Bright, *Monarthrum* ..... 419, 421  
*discordis* Bright, *Hypothenemus* ..... 133, 141  
*disjunctus* Bright, *Xyleborus* ..... 292, 299  
*dissidens* Bright, *Pityophthorus* ..... 366, 369  
*distinctus* (Motschulsky), *Coccotrypes* ..... 235, 239  
*diversus* Bright, *Stegomerus* ..... 181, 452, 462  
*diversus* Bright, *Pityophthorus* ..... 367, 369  
*dolosus* Wood, *Hypothenemus* (= *opacus* (Eichhoff))  
..... 159  
*Dryocoetini* ..... 228  
*Dryocoetoides* Hopkins ..... 259  
*dubitalis* Bright, *Hypothenemus* ..... 134, 141  
*eccentricus* Bright, *Pityophthorus* ..... 368, 369  
*echinatus* Bright, *Xyleborinus* ..... 280, 285  
*eggersi* Schedl, *Poecilips* (= *cyperi* (Beeson)) ..... 232  
*eggersianus* Schedl, *Pityophthorus* ..... 368, 393  
*elegans* Eichhoff, *Hyllocurus* ..... 75  
*elevatus* (Eggers), *Euwallacea* ..... 265, 269  
*elongatus* Hopkins, *Stephanoderes* (= *eruditus*  
Westwood) ..... 136  
*emarginatus* Hopkins, *Coptoborus* (= *vespatorius*  
Schedl) ..... 258  
*endemus* Bright, *Tricolus* ..... 424, 425  
*erectus* LeConte, *Hypothenemus* ..... 134, 141  
*eruditus* Westwood, *Hypothenemus* ..... 136, 141  
*Euwallacea* Hopkins ..... 262  
*exceptus* Bright, *Hypothenemus* ..... 139, 141  
*exiguus* (Wood), *Hypothenemus* ..... 140, 141  
*exilis* Schedl, *Xyleborus* ..... 293, 455, 466  
*exquisitus* Bright, *Allothenemus* ..... 101, 105  
*favorabilis* Bright, *Pityophthorus* ..... 369, 370  
*ferrugineum* Bright, *Monarthrum* ..... 420, 421  
*ferrugineus* Bright, *Araptus* ..... 324, 327  
*ferrugineus* (Fabricius), *Xyleborus* ..... 294, 299  
*ficus* Schwarz, *Loganius* ..... 9, 11, 439, 441, 448, 457  
*flavicollis* Hopkins, *Stephanoderes* (= *eruditus*  
Westwood) ..... 136  
*flavipes* Hopkins, *Hypothenemus* (= *eruditus*  
Westwood) ..... 136  
*floridensis* Blackman, *Tachyderes* (= *seriatus* Eggers)  
..... 110  
*floridensis* Hopkins, *Hypothenemus* (= *jalapae*  
(Letzner)) ..... 180  
*floridensis* Hopkins, *Xylocleptes* (= *carbonarius*  
(Ferrari)) ..... 243  
*foleyi* Bright, *Pityophthorus* ..... 371, 377  
*formosus* Bright, *Pityophthorus* (= *laevis* (Schedl)) 375  
*frimbricornis* LeConte, *Thysanoes* ..... 472  
*frontalis* (Fabricius), *Pagiocerus* ..... 29, 449, 458  
*fulgidus* Bright, *Dendrocranulus* ..... 245  
*fulgidus* Bright, *Euwallacea* ..... 266, 269  
*fuscicollis* (Eichhoff), *Hypothenemus* ..... 140, 141  
*fuscus* Bright, *Araptus* ..... 324  
*geayi* Hagedorn, *Xyleborus* ..... 296, 299  
*gimmeli* Bright, *Pityophthorus* ..... 371, 377  
*glaber* (Eichhoff), *Scolytodes* ..... 203, 205  
*glabratulus* (Schedl), *Hypothenemus* ..... 142, 149  
*Gnatholeptus* Blackman ..... 342  
*Gnathoraptus* Bright ..... 345  
*Gnathotrichus* Eichhoff ..... 408  
*Gnathotrupes* Schedl ..... 410  
*gossypii* (Hopkins), *Hypothenemus* ..... 143, 149  
*gracile* Eichhoff, *Pycnarthrum* (= *hispidum* (Ferrari))  
..... 191  
*gracilis* Blandford, *Cnesinus* ..... 471  
*gracilis* Eggers, *Tricolus* ..... 424, 447, 456, 468  
*gracilis* (Eichhoff), *Xyleborinus* ..... 281, 285  
*gracilis* Eggers, *Stephanoderes* (= *eruditus*  
Westwood) ..... 136  
*grandicollis* (Eichhoff), *Ips* ..... 226, 227  
*granulatus* Bright, *Hypothenemus* ..... 144, 177  
*granulatus* Bright, *Pseudothysanoes* ..... 89, 93  
*gratus* Bright, *Pityophthorus* ..... 372, 377  
*grenadacolens* Bright, *Pityophthorus* ..... 372, 399  
*grenadaensis* Bright, *Araptus* ..... 325, 327  
*grenadaensis* Hopkins, *Xyleborus* (= *volvulus* (Fabri-  
cius)) ..... 302  
*gradeloupanus* Wood, *Araptus* ..... 326, 327  
*guadeloupensis* Bright, *Pseudothysanoes* ..... 89, 93  
*guadeloupensis* Eggers, *Cnesinus*  
..... 25, 127, 439, 441, 448, 458  
*guadeloupensis* Nunberg, *Pityophthorus*  
(= *eggersianus* Schedl) ..... 368  
*guadeloupensis* Schedl, *Brachydendrulus*  
(= *guadeloupanus* Wood) ..... 326  
*guadeloupensis* (Schedl), *Araptus* ..... 326, 327  
*guadeloupensis* Schedl, *Hypothenemus* (= *eruditus*  
Westwood) ..... 136  
*guatemalensis* Hopkins, *Xylocleptes* (= *carbonarius*  
(Ferrari)) ..... 243  
*guyanensis* Blackman, *Neodryocoetes* (= *hymenaeae*  
(Eggers)) ..... 329  
*gundlachi* Eggers, *Xyleborus* (= *hagedorni* (Iglesias))  
..... 252  
*guyanaensis* (Schedl), *Scolytodes* ..... 472  
*Gymnochilus* Eichhoff ..... 183  
*hagedorni* (Iglesias), *Ambrosiodmus* ..... 252, 454, 464  
*hampei* (Ferrari), *Hypothenemus* ..... 145, 149  
*heveae* (Hagedorn), *Cryptocarenum* ..... 108, 111  
*Hexacolinae* ..... 183  
*hirtus* (Wood), *Hypothenemus* ..... 146, 149  
*hirtellus* Schedl, *Xyleborus* (= *theobromae* Hopkins)  
..... 276  
*hispanicus* Bright, *Gnatholeptus* ..... 343, 344, 447  
*hispaniolum* Bright, *Liparthrum* ..... 66, 69  
*hispaniolus* Bright, *Amphicranus* ..... 396, 456, 467  
*hispaniolus* Bright, *Dendrocranulus* ..... 245, 246  
*hispaniolus* Bright, *Gnathotrichus* 408, 447, 456, 467  
*hispaniolus* Bright, *Pityophthorus* (= *subcentralis*  
Schedl) ..... 387

- hispidum* (Ferrari), *Pycnarthrum* ..... 191, 193, 445, 452, 463  
*howdenae* (Bright), *Xyleborinus* ..... 282, 285  
*howdeni* Bright, *Araptus* ..... 328, 333  
*howdeni* Bright, *Chaetophloeus* ..... 58, 59, 63, 442  
*hubbardi* Blackman, *Neodryocoetes* (=politus  
(Blandford)) ..... 337  
*hubbardi* Hopkins, *Coccotrypes* (=carpophagus  
Hornung)) ..... 231  
*Hylastes* Erichson ..... 18  
Hylastini ..... 18  
Hylesininae ..... 14  
Hylesinini ..... 20  
*Hylocurus* Eichhoff ..... 71  
hymenaeae (Eggers), *Araptus* ..... 329, 333, 455, 466  
Hypoborini ..... 53  
Hypocryphalus Hopkins ..... 112  
Hypothenemus Westwood ..... 113  
*ignotus* Bright, *Hypothenemus* ..... 146, 149  
*ignotus* Bright, *Tricolus* (=gracilis Eggers) ..... 424  
*illuminus* Bright, *Pityophthorus* ..... 373, 377  
*imitans* Eggers, *Microborus* (=aberrans Wichmann)  
..... 185  
*imitans* Eggers, *Prionosceles* (=nitidissimus (Eggers))  
..... 206  
*improvidus* Bright, *Hypothenemus* ..... 147, 149  
*incertissimus* Bright, *Pseudothysanoses* ..... 90, 93  
*incertus* Bright, *Coccotrypes* ..... 236, 239, 445  
*incolus* Bright, *Araptus* ..... 330, 333, 446  
*incomptus* Bright, *Tricolus* ..... 425, 426  
*indistinctus* Bright, *Hypothenemus* ..... 147, 149  
*ineditus* Bright, *Araptus* ..... 331, 333  
*imermis* Eichhoff, *Xyleborus* (=xylographus Say) 305  
*infidelis* Bright, *Ambrosiodmus* ..... 254, 255  
*innovatus* Bright, *Euwallacea* ..... 267, 269  
*inops* Eichhoff, *Cryphalus* (=mangiferae (Stebbing))  
..... 113  
*inordinatus* Bright, *Hypothenemus* ..... 148, 149  
*insolitus* Bright, *Xyleborus* (=andrewesi (Blandford))  
..... 279  
*insulanus* Bright, *Araptus* ..... 332  
*insularis* (Blackman), *Chaetophloeus* ..... 58, 59, 63  
*insularis* (Blackman), *Pseudothysanoses* ..... 91  
*insularis* Bright, *Gnatholeptus* ..... 343, 345  
*insularis* Bright, *Microcorthylus* ..... 411, 413  
*insularis* Eggers, *Cnesinus* ..... 26, 27  
*insularis* Eggers, *Dryocoetes* (=cyperi Beeson) ... 232  
*insularis* (Eggers), *Gymnochilus* .... 184, 444, 452, 462  
*insularis* Eggers, *Neodryocoetes* (=hymenaeae  
(Eggers)) ..... 329  
*insularis* Eggers, *Neopityophthorus*  
(=guadeloupenensis (Schedl)) ..... 326  
*insularis* Eggers, *Phloeotribus* ..... 34  
*insularis* Schedl, *Hexacolus* (=notatus (Eggers)) . 207  
*insularis* Bright and Torres, *Corthylus* . 399, 401, 405  
*insulatus* Bright, *Conophthorus* ..... 340, 455, 466  
*insulatus* Bright, *Pityophthorus* ..... 374, 377  
*insulosus* Bright and Torres, *Xyleborinus* .... 282, 285  
*interruptus* (Eggers), *Cladoctonus* .. 47, 442, 449, 459  
*intersetosus* (Blandford), *Xyleborinus* ..... 283, 285  
*interstitialis* (Hopkins), *Hypothenemus* ..... 148, 149  
*intrusus* Blandford, *Xyleborus* (=pubescens  
Zimmermann) ..... 298  
*inuitatus* Bright, *Pityophthorus* ..... 374, 377  
*Ipinae* ..... 220  
*Ipini* ..... 222  
*Ips* DeGeer ..... 223  
*isolatus* Bright, *Bothrosternus* ..... 21, 441, 448, 458  
*iviei* Bright, *Microborus* ..... 187, 188  
*iviei* Bright, *Scolytodes* ..... 204, 205  
*jalapae* (Letzner), *Scolytogenes* .... 180, 444, 452, 462  
*jamaicensis* (Bright), *Euwallacea* ..... 267  
*javanus* (Eggers), *Hypothenemus* ..... 150, 161, 444  
*klapperichi* Bright, *Ambrosiodmus* (=obliquus  
(LeConte)) ..... 255  
*knabi* Hopkins, *Ernoporides* (=jalapae (Letzner)) 180  
*laevis* (Schedl), *Pityophthorus* ..... 375, 377  
*lateralis* Swaine, *Pityophthorus* (=concentraris  
Eichhoff) ..... 362  
*lautus* Bright, *Pseudothysanoses* ..... 92, 93  
*lautus* Wood, *Microborus* ..... 189, 452, 462  
*lecontei* Hopkins, *Ambrosiodmus* (=hagedorni  
(Iglesias)) ..... 252  
*lectus* Wood, *Microborus* ..... 471  
*lepidotus* Bright, *Chramesus* ..... 38, 39  
*lepidus* (Bright), *Cnestus* ..... 257  
*leptosquamus* Bright, *Hypothenemus* ..... 152, 177  
*leptus* Bright, *Pseudothysanoses* ..... 92  
*liliputanus* Bright, *Hypothenemus* ..... 152, 161  
*lima* Eggers, *Dendrosinus* (=bourrieriae Schwarz) . 52  
*lineatifrons* Hopkins, *Hypothenemus* (=eruditus  
Westwood) ..... 136  
*Liparthrum* Wollaston ..... 65  
*liquidambaris* Blackman, *Pityophthorus* .... 376, 377  
*Loganius* Chapuis ..... 9  
*longicollis* Eggers, *Cnesinus* ..... 27  
*longicollis* Eggers, *Hexacolus* (=pseudobicolor  
(Eggers)) ..... 213  
*longisetum* Bright, *Scolytodes* ..... 59, 60, 63  
*longulus* Schedl, *Xyleborus* (=buscki (Hopkins)) . 279  
*luridus* Blandford, *Corthylus* ..... 471  
*macer* Blandford, *Xyleborus* ..... 297, 299  
*magnispinatus* Bright and Torres, *Pseudothysanoses*  
..... 94, 101  
*maieri* Bright, *Chramesus* ..... 39  
*major* (Eggers), *Cladoctonus* ..... 47, 50  
*mali* (Fitch), *Monarthrum* ..... 420, 421, 456, 468  
*mandibularis* Bright, *Chaetophloeus* ..... 61  
*mandibularis* Bright, *Gnathoraptus* .....  
..... 346, 447, 455, 466  
*mangiferae* (Stebbing), *Hypocryphalus*  
..... 112, 439, 444, 451, 461  
*marginatus* Bright, *Pseudothysanoses* ..... 94, 101  
*marginicollis* (Eggers), *Sternobothrus* ..... 31  
*martiniquensis* Eggers, *Stephanoderes* (=arecae  
(Horning)) ..... 125  
*masneri* Bright, *Pityophthorus* ..... 377, 378  
*masneri* Bright, *Pseudothysanoses* ..... 95  
*maurus* (Blandford), *Scolytodes* ..... 472  
*megapunctatus* Bright, *Gnathotrupes* . 410, 456, 468

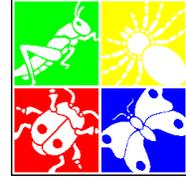
- melanurus Bright, Araptus ..... **333**  
 Micracidinae ..... 70  
 Micracidini ..... 71  
 Micracis LeConte ..... **80**  
 Micracisella Blackman ..... **81**  
 Microborus Blackman ..... **184**  
 Microcorthylus Ferrari ..... **411**  
 Microsorus Bright ..... **178**  
 miles (LeConte), Hypothenemus ..... **153**  
 minicus (Schedl), Acanthotomicus ..... **222**, 453, 463  
 minor (Blackman), Pseudothysanoes ..... 93, **96**  
 minor Bright, Cladoctonus ..... **48**, 50  
 minutissimus Bright, Pityophthorus ..... **379**, 385  
 minutissimus Bright, Pseudothysanoes ..... 93, **96**  
*minutissimus* Schedl, Cryphalomorphus (=jalapae  
 (Letzner)) ..... 180  
 minutissimus Schedl, Microcorthylus ..... 411, **413**  
*minutissimus* (Wood), Hypothenemus (woodi Bright)  
 ..... 153  
 minutum Bright, Stevewoodia ..... **103**, 451, 460  
 minutum Bright, Trypanophellos ..... **68**, 69, 443  
 minutum (Schedl), Monarthrum ..... **471**  
 minutus Bright, Chaetophloeus ..... 59, **62**, 63  
 minutus Bright and Torres, Allothenemus  
 ..... **106**, 451, 461  
*minutus* Hopkins, Stephanoderes (=seriatus  
 (Eichhoff)) ..... 156  
 Minyotrypetes Bright ..... **247**  
 Monarthrum Kirsch ..... **414**  
 montanus (Bright), Araptus ..... 333, **334**, 341  
 montanus Bright, Chaetophloeus ..... 59, **62**, 63  
 monticellus Bright, Corthylus ..... **402**, 495  
 morigerus (Blandford), Xylosandrus ..... **310**, 311  
*moschatae* Schaufuss, Stephanoderes (=obscurus  
 (Fabricius)) ..... 156  
*multidentatus* Hopkins, Stephanoderes (=obscurus  
 Fabricius)) ..... 156  
 muricatus Bright, Pseudothysanoes ..... **97**, 101  
 nanoparvus Bright, Hypothenemus ..... **154**, 161  
 nanula (LeConte), Micracisella ..... **81**, 443, 450, 460  
 neocopinus Bright, Trypanophellos... 69, **70**, 450, 459  
 neotropicus Schedl, Phloeosinus ..... **53**, 442, 450, 459  
 Neocultus Bright ..... **248**  
 nesocolus Bright, Pityophthorus ..... **379**, 385  
 nesiotus Bright, Hypothenemus ..... **154**, 161  
 niger (Bright), Araptus ..... **335**, 341  
 nigriculus Bright, Araptus ..... **335**, 341  
*nitidipennis* Hopkins, Stephanoderes (=obscurus  
 Fabricius)) ..... 156  
 nitidissimus, (Eggers), Scolytodes ..... **206**, 209  
*nitidulus* Hopkins, Stephanoderes (=obscurus  
 Fabricius)) ..... 156  
 notatus (Eggers), Scolytodes ..... **207**, 209  
*notatus* Eggers, Xyleborus (=ferrugineus (Fabricius))  
 ..... 294  
*novagrenadensis* Eggers, Xyleborus (=caraibicus  
 Eggers) ..... 264  
*novus* Bright, Xyleborinus (=howdenae (Bright)) 282  
 nubila Blackman, *Ceratolepis* (=ficus Schwarz) ..... 9  
 nuperus (Bright), Ambrosiodmus ..... **255**  
*obesus* Hopkins, Stephanoderes (=javanus (Eggers))  
 ..... 150  
*obliquus* Hopkins, Stephanoderes (=interstitialis  
 (Hopkins)) ..... 149  
 obliquus (LeConte), Ambrosiodmus ..... **255**  
 oblongus (Eggers), Scolytodes ..... **208**, 209  
 "obrienorum Atkinson, Hypothenemus" ..... **471**  
 obscurifrons Bright, Hypothenemus ..... **155**, 161  
*obscurus* Eichhoff, Stephanoderes (=arecae  
 (Horning)) ..... 125  
*obscurus* (Fabricius), Hypothenemus  
 ..... **156**, 161, 169, 451, 461  
*obscurus* Ferrari, Cryphalus (=eruditus Westwood)  
 ..... 136  
 obtusiceps Bright, Scolytodes ..... 209, **210**  
*omissum* (Schedl), Monarthrum (=mali (Fitch)) .. 420  
 opacicolis Eggers, Chramesus ..... 39, **40**  
*opacicollus nitidus* Eggers, Chramesus (=opacicolis  
 Eggers) ..... 40  
*opacifrons* Hopkins, Stephanoderes (=pubescens  
 Hopkins) ..... 165  
*opacifrons* Schedl, Pterocyclon (=mali (Fitch)) ... 420  
 opacus (Eichhoff), Hypothenemus ..... **159**, 161  
 opimus (Wood), Ambrosiodmus ..... **257**  
 Orthotomicus Ferrari ..... **227**  
*ovalis* Eggers, Hexacolus (=pseudobicolor (Eggers))  
 ..... 213  
 Pagiocerus Eichhoff ..... **29**  
 papulans Eichhoff, Corthylus ..... **403**, 405  
 palearis Bright, Chramesus ..... 39, **41**  
 pallidum (Chapuis), Pycnarthrum ..... **193**  
 pallidus (Blackman), Araptus ..... **336**, 341  
*parallelus* Schedl, Dendrocranulus (=cabonarius  
 (Ferrari)) ..... 243  
 parasquamosus Bright, Hypothenemus ..... **160**, 161  
 Parathysanoes Bright ..... **82**  
*parvistriatus* Wood, Hypothenemus (=glabratulus  
 Schedl) ..... 142  
 parvulus Bright, Hypothenemus ..... **160**, 161  
 parvum Blackman, Phrixosoma ..... **17**  
*parvus* Blackman, Cryptocarenus (=heveae  
 (Hagedorn)) ..... 109  
*parvus* Hopkins, Hypothenemus (=eruditus  
 Westwood) ..... 136  
 pauculus Bright, Pityophthorus ..... **380**, 385  
 paulus Bright, Hypothenemus ..... **162**, 169  
 pecki Atkinson, Pityophthorus ..... **381**  
 peckorum Bright, Cladoctonus ..... **49**, 50  
 peckorum Bright, Scolytodes ..... 209, **211**  
*pelicerinus* Schedl, Hexacolus (=pseudobicolor  
 (Eggers)) ..... 213  
*perdilgens* Schedl, Tricolus (=gracilis Eggers) ... 424  
 perexiguus Bright, Hypothenemus ..... **162**, 169  
 perexiguus Bright, Pseudothysanoes ..... **97**, 101  
 Phloeoborus Erichson ..... **20**  
 Phloeosinini ..... 36  
 Phloeosinus Chapuis ..... **52**  
 Phloeotribini ..... 32  
 Phloeotribus Latreille ..... **32**  
 Phrixosoma Blandford ..... **16**

- Phrixosomatini ..... 16
- pilosus Hopkins, Hypothenemus ..... **163**
- pinavorus Bright, Pityophthorus ..... **381**, 385
- pisinnus (Bright), Corthylocorus ..... **397**
- pistor* Schedl, Stephanoderes (=javanus) ..... 150
- Pityoborus Blackman ..... **347**
- Pityophthorini ..... 313
- Pityophthorus Eichhoff ..... **348**
- plesiopolitus Bright, Scolytodes ..... **211**, 217
- plumeriae* Nordlinger, Bostrichus (=eruditus Westwood) ..... 136
- politus (Blandford), Araptus ..... **337**, 341
- politus Bright, Scolytodes ..... **212**, 217
- porticus Bright, Hypothenemus ..... **164**, 177
- portoricensis* Schedl, Neodryocoetes (=pallidus (Blackman)) ..... 336
- posticus (Eichhoff), Euwallacea ..... **268**, 269
- praeustum* (Eggers), Monarthrum (=mali (Fitch)) 420
- precarius Bright, Coccotrypes ..... **237**, 239
- Premnobini ..... 249
- Premnobius Eichhoff ..... **249**
- primus Bright, Minyotrypetes ..... **247**, 469
- procerus Bright, Pityophthorus ..... **382**, 385
- propinquus Blandford, Scolytus ..... **472**
- prosper* Schedl, Stephanoderes (=javanus (Eggers)) ..... 150
- pseudobicolor (Eggers), Scolytodes ..... **213**, 217
- pseudobrasiliensis* Eggers, Xyleborus (=obliquus (LeConte)) ..... 255
- Pseudohexacolus Bright ..... **190**
- Pseudopityophthorus Swaine ..... **392**
- pseudosolitarius (Eggers), Dryocoetoides ..... 261, **262**
- pseudotenuis Schedl, Xyleborus ..... **297**
- Pseudothysanoes Blackman ..... **83**
- pubescens Hopkins, Hypothenemus ..... **165**, 169
- pubescens* Schedl, Coccotrypes (=carpophagus (Hornung)) ..... 231
- pubescens Zimmermann, Xyleborus ..... **298**, 299, 303
- pubens* Blackman, Pityophthoides (=laevis (Schedl)) ..... 375
- puertoricensis (Bright and Torres), Hypothenemus ..... **166**, 169
- puertoricensis (Bright and Torres), Scolytodes ..... **214**, 217, 440, 446
- puertoricensis Bright and Torres, Theoborus 261, **274**
- pulicarius Zimmermann, Pityophthorus ..... **382**, 385
- punctatus Eggers, Pityophthorus ..... **383**
- puncticollis Blandford, Scolytopsis ..... **12**, 448, 457
- punctulatus* Eggers, Coccotrypes (=carpophagus) 231
- pusio Eggers, Xyleborus ..... **300**, 303
- Pycnarthrum Eichhoff ..... **191**
- Pygmaeoborus Bright ..... **178**
- pygmaeomorphus Bright, Hypothenemus ..... **166**
- quadrispinosus Blackman, Hylocurus ..... **76**, 79
- rawlinsi Bright, Microborus ..... 188, **189**
- reconditus (Schedl), Xyleborinus ..... **284**, 285
- regularis Blackman, Pityophthorus ..... **384**, 385
- reticulatum* Schedl, Pycnarthrum (=pallidum (Chapuis)) ..... 193
- reticulatus Bright, Corthylus ..... **404**, 495
- rhizophorae (Hopkins), Coccotrypes ..... **238**
- ricini (Eggers), Theoborus ..... 261, **275**
- ritchiei* Sampson, Hypothenemus (=jalapae (Letzner)) ..... 180
- robustus Eichhoff, Coccotrypes ..... **239**
- robustus* Schedl, Chramesus (=opacicolis Eggers) . 40
- rogueti Bright, Pityophthorus ..... **384**, 385
- rotundatus (Chapuis), Chramesus ..... 39, **42**, 442
- rotundicollis (Eichhoff), Hypothenemus ..... **167**, 169
- rubrithorax Bright, Hypothenemus ..... **168**, 169
- rugulosus (Müller), Scolytus ..... 472
- sabaensis Bright, Scolytodes ..... **215**, 217
- sacchari* Hopkins, Hypothenemus (=eruditus Westwood) ..... 136
- sacchari* Hopkins, Xyleborus (=affinis Eichhoff) .. 288
- salebrosus Eichhoff, Hylastes ..... **18**
- Sampsonius Eggers ..... **270**
- saxesenii (Ratzeburg), Xyleborinus ..... **284**
- scaber Erichson, Phloeoborus ..... **20**, 441, 448, 457
- scabiosus Bright, Chramesus ..... 39, **43**
- schwarzi* Hopkins, Erineophilus (=glaber (Eichhoff)) ..... 203
- Scolytinae ..... 8
- Scolytini ..... 9
- Scolytodes Ferrari ..... **194**
- Scolytogenes Eichhoff ..... **179**
- Scolytus Geoffroy ..... **13**
- Scolytopsis Blandford ..... **12**
- securigerus (Blackman), Pseudothysanoes ..... **98**, 101
- seticosus Bright, Pityophthorus ..... 385, **386**
- sepositus Bright, Pityophthorus ..... **386**, 393
- seritus Eggers, Cryptocarenus **110**, 111, 444, 451, 461
- seriatus* (Eichhoff), Hypothenemus (=obscurus Fabricius) ..... 156
- setiferus Bright, Hypothenemus ..... **169**
- setosus (Eichhoff), Hypothenemus ..... **170**, 175
- simulatus (Bright), Euwallaea ..... **270**
- smithi Bright, Pseudothysanoes ..... **99**
- singularis Bright, Pseudohexacolus ..... **190**, 452, 463
- solitariceps* Schedl, Xyleborus (=ricini (Eggers)) . 275
- solivagus Bright, Hypothenemus ..... **171**, 175
- Sphenocerus Schedl ..... **394**
- spinifer* Schwarz, Corthylus (=papulans Eichhoff) 403
- spinulosus Blandford, Xyleborus ..... **301**, 303, 440
- squamosus Bright, Araptus ..... **337**, 341
- squamosus Bright, Chramesus ..... 39, **44**
- squamosus (Hopkins), Hypothenemus ..... **171**, 175
- Stegomerus Wood ..... **181**
- steineri Bright, Scolytodes ..... **215**, 217
- Sternobothrus Eggers ..... **30**
- Stevewoodia Bright ..... **100**
- striatulus Wood, Scolytodes ..... **216**, 217
- striatus (Atkinson), Hypothenemus ..... **172**, 175
- striatus Eggers, Hylocurosoma (=striatulus Wood) ..... 216
- strigicollis LeConte, Cnesinus ..... 27, **28**
- subasperulus Eggers, Corthylus ..... **404**, 405
- subconcentralis* Hopkins, Stephanoderes (=eruditus Westwood) ..... 136
- subconcentralis Schedl, Pityophthorus ..... **387**, 393

- subimpressus* Eggers, Coccotrypes (=cyperi (Beeson)) ..... 232
- subopacicollis* Hopkins, Stephanoderes (=obscurus (Fabricius)) ..... 156
- subparallelus* Eggers, Hexacolus (=pseudobicolor (Eggers)) ..... 213
- subtilus* Bright, Pityophthorus ..... **388**, 393
- sundaensis* (Eggers), Hypothenemus (=fuscicollis (Eichhoff)) ..... 140
- suspeiosus* Bright, Pityophthorus ..... **389**, 393
- suspectus* Bright, Hylastes ..... **18**
- swaini* Blackman, Micracis ..... **471**
- Tachyoderes* Blackman (=Cryptocarenum) ..... 107
- taino* Bright, Amphicranus ..... **396**, 399
- tectus* Bright, Hypothenemus ..... **173**, 175
- tenuis* Eichhoff, Hylastes ..... **19**, 439, 448, 457
- texanus* Schaeffer, Phloeotribus ..... **35**
- Theoborus* Hopkins ..... **271**
- theobromae* Hopkins, Theoborus ..... **276**, 454, 465
- thomasi* Bright, Neocultus ..... **248**, 453, 464
- thrinacis* Hopkins, Coccotrypes (=carphagus (Hornung)) ..... 231
- tomentosus* Bright, Pityophthorus ..... **389**, 393
- Tomicini* ..... 36
- torosus* Bright, Cladoctonus ..... **49**, 50
- torresi* Bright, Hylocurus ..... **77**, 79
- torresi* Bright, Pityophthorus ..... **390**, 393
- torresi* Bright, Scolytodes ..... 217, **218**
- touroulti* Bright, Hylocurus ..... **77**, 79
- transatlanticus* Eggers, Stephanoderes (=eruditus (Westwood)) ..... 136
- Tricolus* Blandford ..... **422**
- trinidadensis* Schedl, Xyleborus (=caraibicus Eggers) ..... 264
- trinitatis* Hopkins, Stephanoderes (=crudiae (Panzer)) ..... 132
- Trischidias* Hopkins (=Hypothenemus) ..... 113
- trunculus* Bright, Pseudothysanoes ..... **100**, 101, 443, 451, 460
- Trypanophellos* Bright ..... **67**
- Trypolepis* Bright ..... **182**
- tuberculatus* Eggers, Corthylus ..... **406**, 411, 447, 456, 467
- tuberosus* Bright, Cladoctonus ..... 50, **51**
- tumidosus* Bright, Hylocurus ..... **78**, 79, 443, 450, 460
- turnbowi* Bright, Araptus ..... **338**
- turnbowi* Bright, Hypothenemus ..... **173**, 175
- turnbowi* Bright, Liparthrum ..... **67**, 69
- unicolor* Hopkins, Stephanoderes (=eruditus (Westwood)) ..... 136
- unicus* Bright, Atomothenemus ..... **107**, 451, 461
- unidentatus* Bright, Tricolus ..... **426**
- ustulatus* Bright, Araptus ..... **339**, 341
- ustulatus* Bright, Hypothenemus ..... **174**, 175
- vagabundus* Wood, Loganius ..... **10**, 11
- validus* (Eichhoff), Euwallacea ..... **471**
- vernaculus* Bright, Hypothenemus ..... **174**, 177
- versicolor* Bright, Corthylus ..... **407**, 411
- versicolor* Bright, Hypothenemus ..... 175, **176**
- vespatorius* (Schedl), Coptoborus .. **258**, 261, 454, 465
- villosus* Bright, Hypothenemus ..... **176**
- volvulus* (Fabricius), Xyleborus ..... **302**, 303
- vulgaris* (Eggers), Coccotrypes ..... **240**
- vulgaris* Bright, Pityophthorus ..... **391**, 393
- wintoni* Bright, Araptus ..... **340**, 341
- woodi* Bright, Hypothenemus ..... **153**
- woodruffi* Bright, Chaetophloeus ..... 59, 63, **64**
- Xyleborini* ..... 251
- Xyleborinus* Reitter ..... **277**
- Xyleborus* Eichhoff ..... **285**
- xylographus* (Say), Xyleborus ..... **305**
- Xylosandrus* Reitter ..... **306**
- youngi* Bright, Pityophthorus ..... **391**, 393
- zimmermanni* Hopkins, Anisandrus (=curtulus (Eichhoff)) ..... 309



Museum publications of  
FDACS-Division of Plant Industry



## Florida State Collection of Arthropods

### Arthropods of Florida and Neighboring Land Areas (ISSN 0066-8036)

- Vol. 1 - Lepidoptera of Florida / C.P. Kimball (1965)
- Vol. 2 - The Widow Spiders of Florida / J.D. McCrone, K.J. Stone (1965)
- Vol. 3 - Florida Armored Scale Insects / G.W. Dekle (1965, revised 1979)
- Vol. 4 - Scorpions, Whip Scorpions, and Wind Scorpions of Florida / M.H. Muma (1967)
- Vol. 5 - Synoptic Review of North American, Central American & West Indian Solpugida / M.H. Muma (1970)
- Vol. 6 - Phytoseiidae of Florida / M.H. Muma, H.A. Denmark (1970)
- Vol. 7 - Agromyzidae of Florida / K.A. Spencer (1973)
- Vol. 8 - Scarab Beetles of Florida, Part I, The Laparosticti / R.E. Woodruff (1973)
- Vol. 9 - Ichneumoninae of Florida and Neighboring States / G.H. Heinrich (1977)
- Vol. 10 - Sand Flies of Florida / F.S. Blanton (1979)
- Vol. 11 - Soft Scale Insects of Florida / A.B. Hamon, M.L. Williams (1984)
- Vol. 12 - Coreidae of Florida / R.M. Baranowski, J.A. Slater (1986)
- Vol. 13 - Scarab Beetles of Florida, Part II, May or June Beetles (Genus *Phyllophaga*) / R.E. Woodruff, B.M. Beck (1989)
- Vol. 14 - Lygaeidae of Florida (Hemiptera: Heteroptera) / J.A. Slater, R.M. Baranowski (1990)
- Vol. 15 - The Flat Bark Beetles of Florida / M.C. Thomas (1993)
- Vol. 16 - A Distributional Checklist of the Beetles (Coleoptera) of Florida / S.B. Peck and M.C. Thomas (1998)
- Vol. 17 - Lepidoptera of Florida. Part 1. Introduction and Catalog / J. B. Heppner (released 2003, printed 2007)
- Vol. 18 - A Checklist of the Beetles of Cuba (Insecta: Coleoptera) / Stewart B. Peck (2005)

### Occasional Papers of the Florida State Collection of Arthropods (ISSN 0885-5943)

- Vol. 1 - Revision of New World Species of the Genus *Neobisnius* Ganglbauer (Coleoptera: Staphylinidae) / J.H. Frank (1981)
- Vol. 2 - Water Beetles of the Genus *Desmopachria*: Convexa-grana Group (Coleoptera: Dytiscidae) / F.N. Young, Jr. (1981)
- Vol. 3 - Revision of New World Species of *Placonotus* Macleay (Coleoptera: Cucujidae: Laemophloeinae) / M.C. Thomas (1984)
- Vol. 4 - Revision of the Genus *Amblyseius* Berlese, 1914 (Acari: Phytoseiidae) / H.A. Denmark (1989)
- Vol. 5 - Bibliography to Harvestmen of the West Indies (Arachnida: Opiliones) / J.C. Cokendolpher, G.R. Camilo-Rivera (1989)
- Vol. 6 - Bothrideridae and Colydiidae of America north of Mexico (Coleoptera) / K.H. Stephan (1989)
- Vol. 7 - Revision of the Genus *Typhlodromus* Scheuten (Acari: Phytoseiidae) / H.A. Denmark (1992)
- Vol. 8 - Catalog of Aleyrodidae on Citrus and their Natural Enemies (Homoptera - Aleyrodidae) / R. Nguyen, R.I. Sailer (1993)
- Vol. 9 - Revision of the genus *Ischyryus* Lac. (1842) of North and Central America (Coleoptera: Erotylidae) / P.Skelley (1998)
- Vol. 10 - Revision of the genus *Selonodon* Latreille (Coleoptera: Cebrionidae) / K.E.M. Galley (1999)
- Vol. 11 - Revision of the Jumping Spiders of the genus *Phidippus* (Araneae: Salticidae) / G.B. Edwards (2004)
- Vol. 12 - Taxonomic Monograph of the Bark and Ambrosia Beetles of the West Indies (Coleoptera) / D. Bright (2019)