Scolytinae y Platypodinae (Coleoptera: Curculionidae:)

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Escarabajos pequeños

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Daños grandes

Mortalidad de hospedera: *Dendroctonus* spp. En coníferas

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Marchitez del laurel/ *Xyleborus glabratus*

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Euwallacea spp.

Fotografía Akif Eskalen

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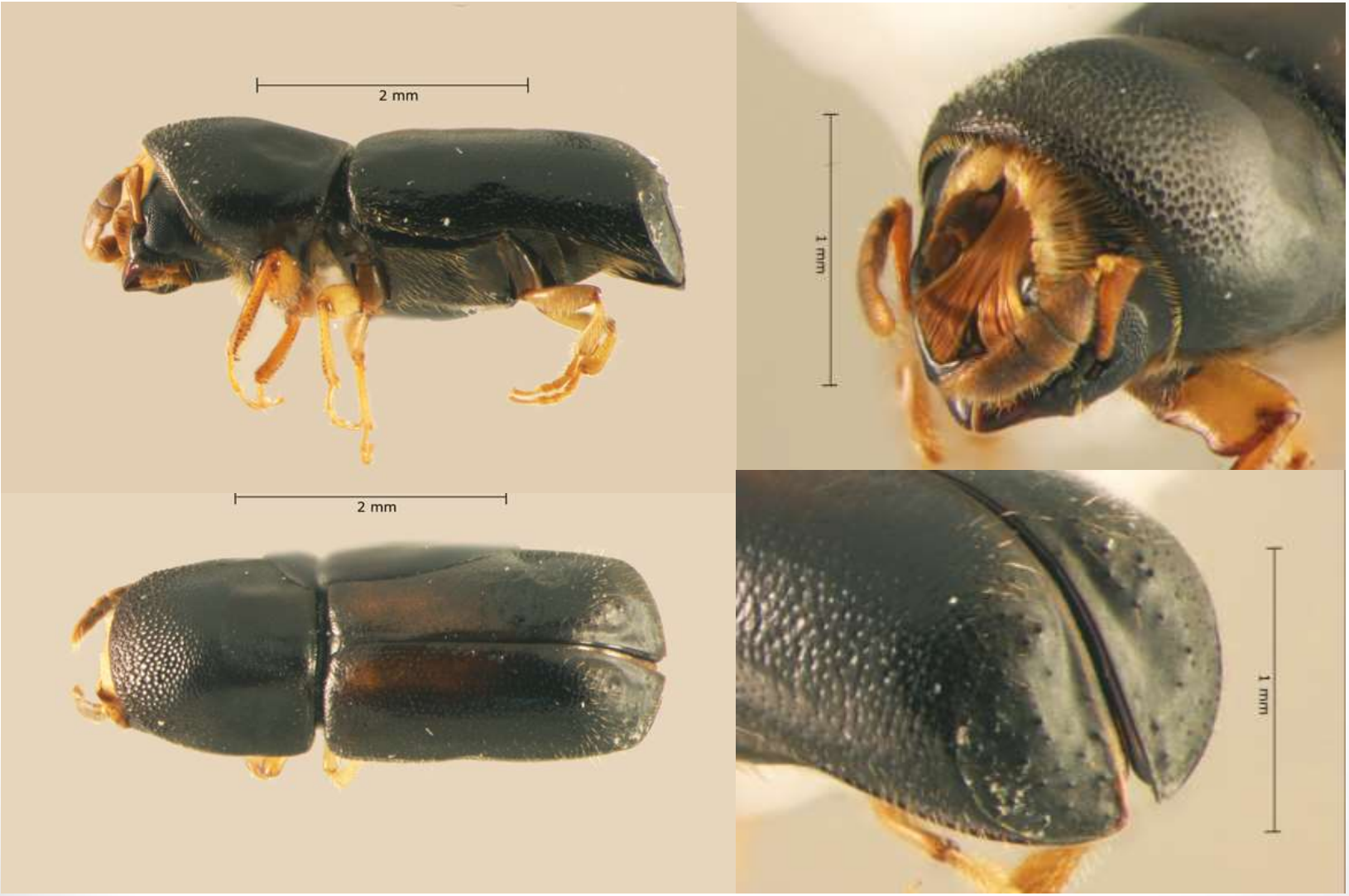
Glochinocerus gemellus Blandford



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Scolytinae Mexicanos

- Familia Curculionidae
  - Subfamilia Scolytinae
  - Antes considerado familia propia
- 902 especies (570 U.S. y Canadá; ~6,500 mundial)
- 19 tribus / 87 géneros
- nivel de conocimiento bueno (7 en escala de 10)

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Teloplatypus ratzeburgi (Chapuis)

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Platypodinae Mexicanos

- Familia Curculionidae
  - Subfamilia Platypodinae
  - Antes considerado grupo hermano a Scolytinae, ahora mas distante
- 44 especies (7 U.S. y Canadá; ~1,400 mundial)
- 3 tribus /11 géneros
- nivel de conocimiento bueno (4 en escala de 10)

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Biología

- Adulto excavan tuneles en hospedantes leñosos
- Período extendido de cuidado paternal
- Se requieren hospedantes ‘frescos’
- Solamente una generación se puede completar en un hospedante
- La mayoría, quizas todas, especies estan asociadas con hongos simbióticos.
- .

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Escarabajos descortezadores

- Hábito ancestral
- Se alimentan del floéma de plantas leñosas
- Padres hacen tuneles bajo la corteza de hospedantes
- Huevecillos en nichos a lo largo del tunel paternal
- Larvas hacen su propia mina alejándose del tunel paternal

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Escarabajos ambrosiales

- Hacen túneles en madera sana
- Adultos y larvas se alimentan de hongos ectosimbióticos (ambrosia)
- No consumen madera
- Evolución independiente >11 veces
- Sumamente dependiente de humedad ambiental alta

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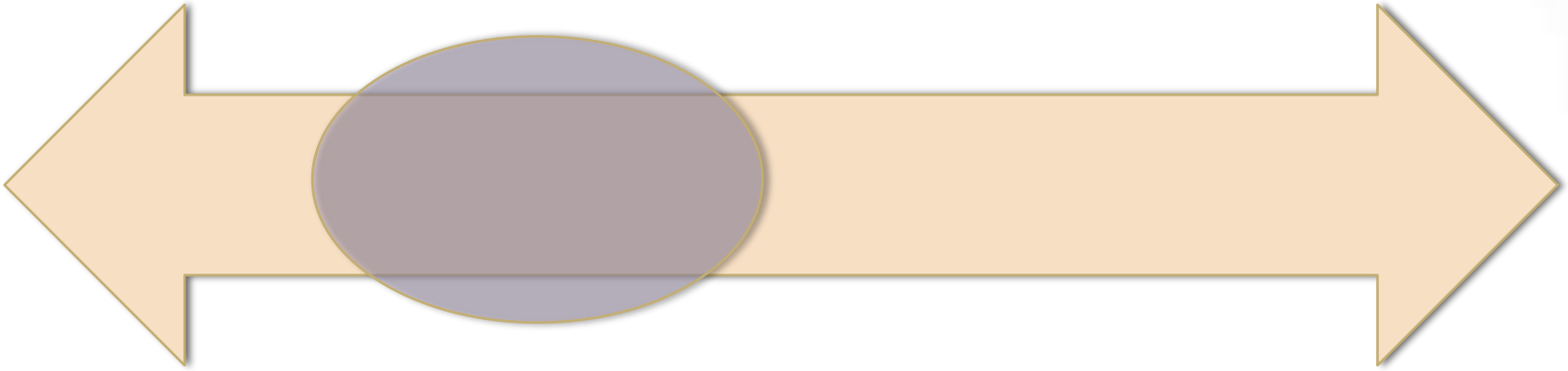
Descortezadores y Ambrosiales



Parásito / herbívoro

saprófito

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Relaciones con hospedantes

Mortalidad de hospedera: *Dendroctonus* spp. En coníferas

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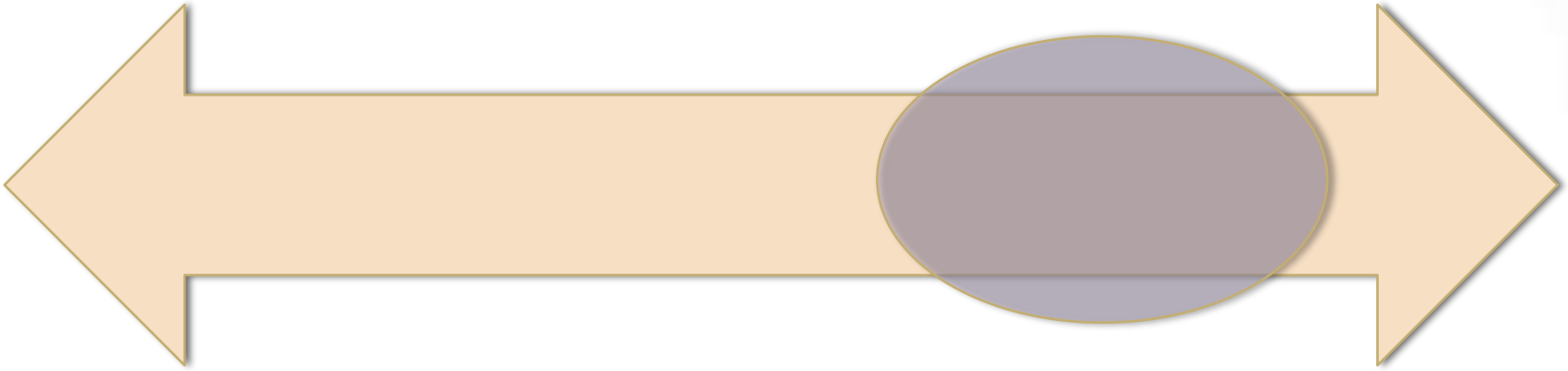
Descortezadores y Ambrosiales



Parásito / herbívoro

saprófito

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Relaciones con hospedantes

Hospedantes recién muertas o bajo stress:
Pseudohylesinus variegatus en oyamel

También ramas rotas, caidas, raíces, etc..

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Relaciones con hospedantes

Ramas vivas, hospedera sana: *Xylosandrus* spp.

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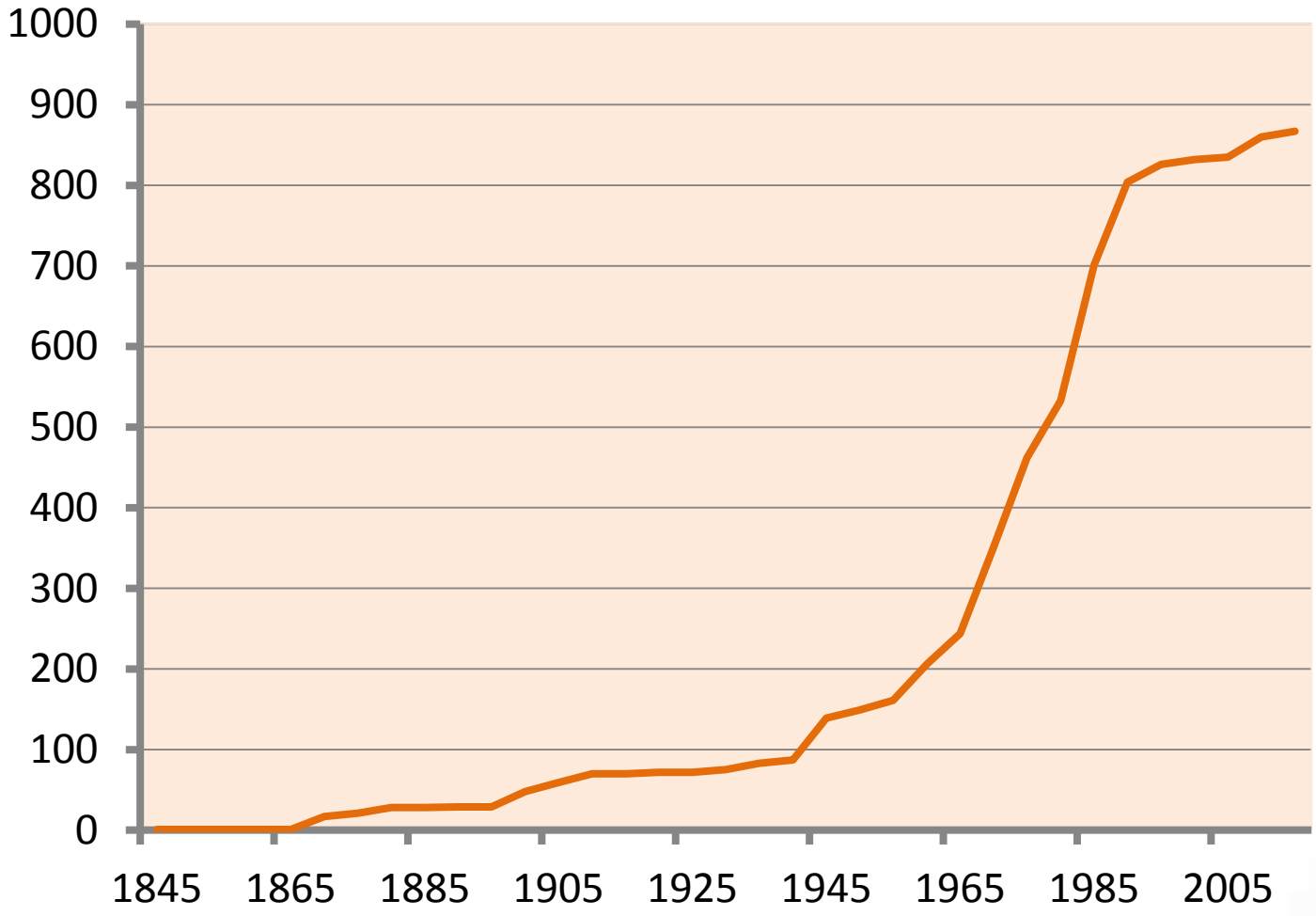
Acumulación de Especies



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Acumulación de Especies

Conclusiones

- Lapso entre colecta y descripción
- Cuand se deja de colectar, se deja de acumular especies
- >1,000 especies

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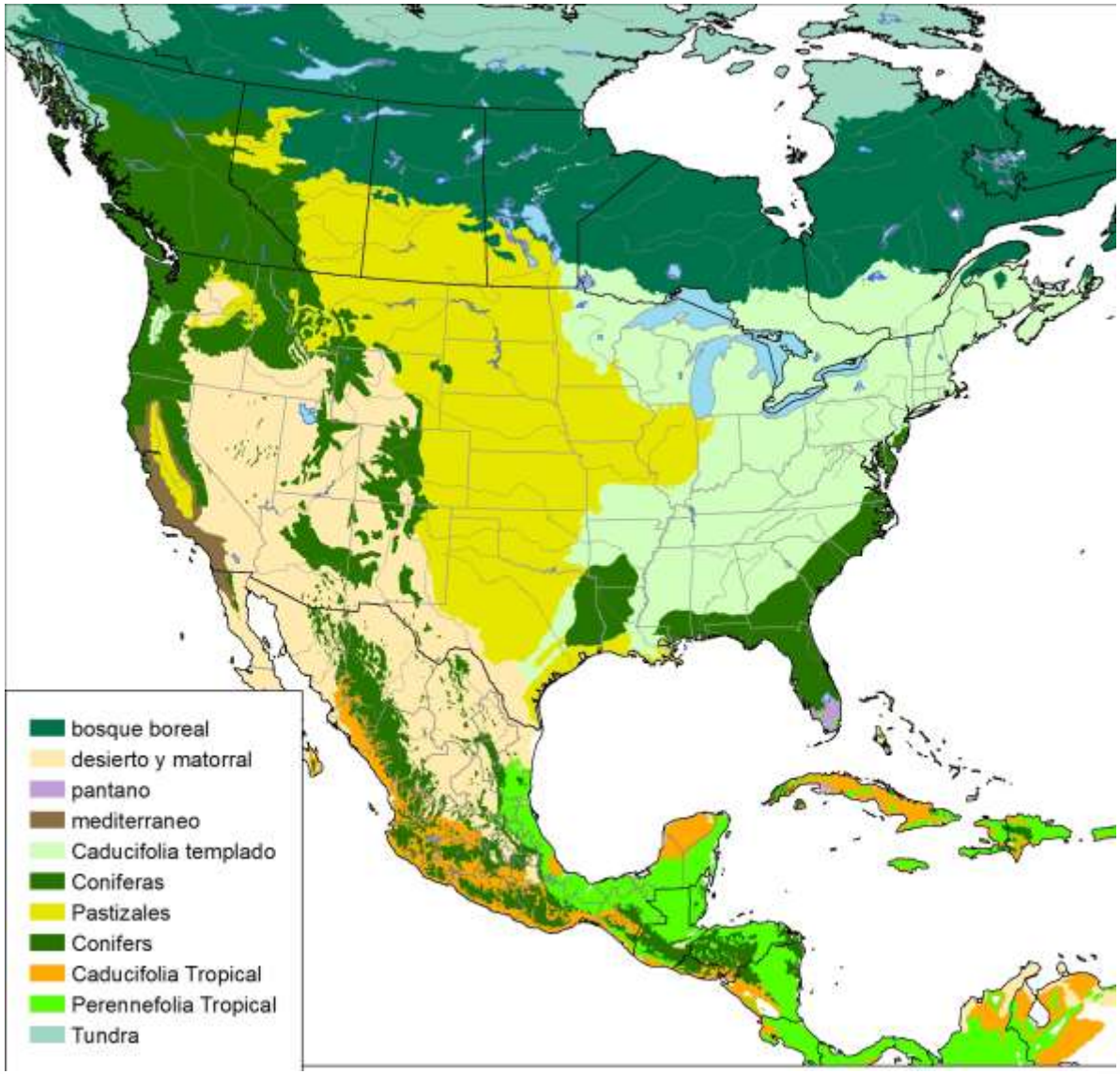
Comunidades Vegetales



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Riqueza Estimada

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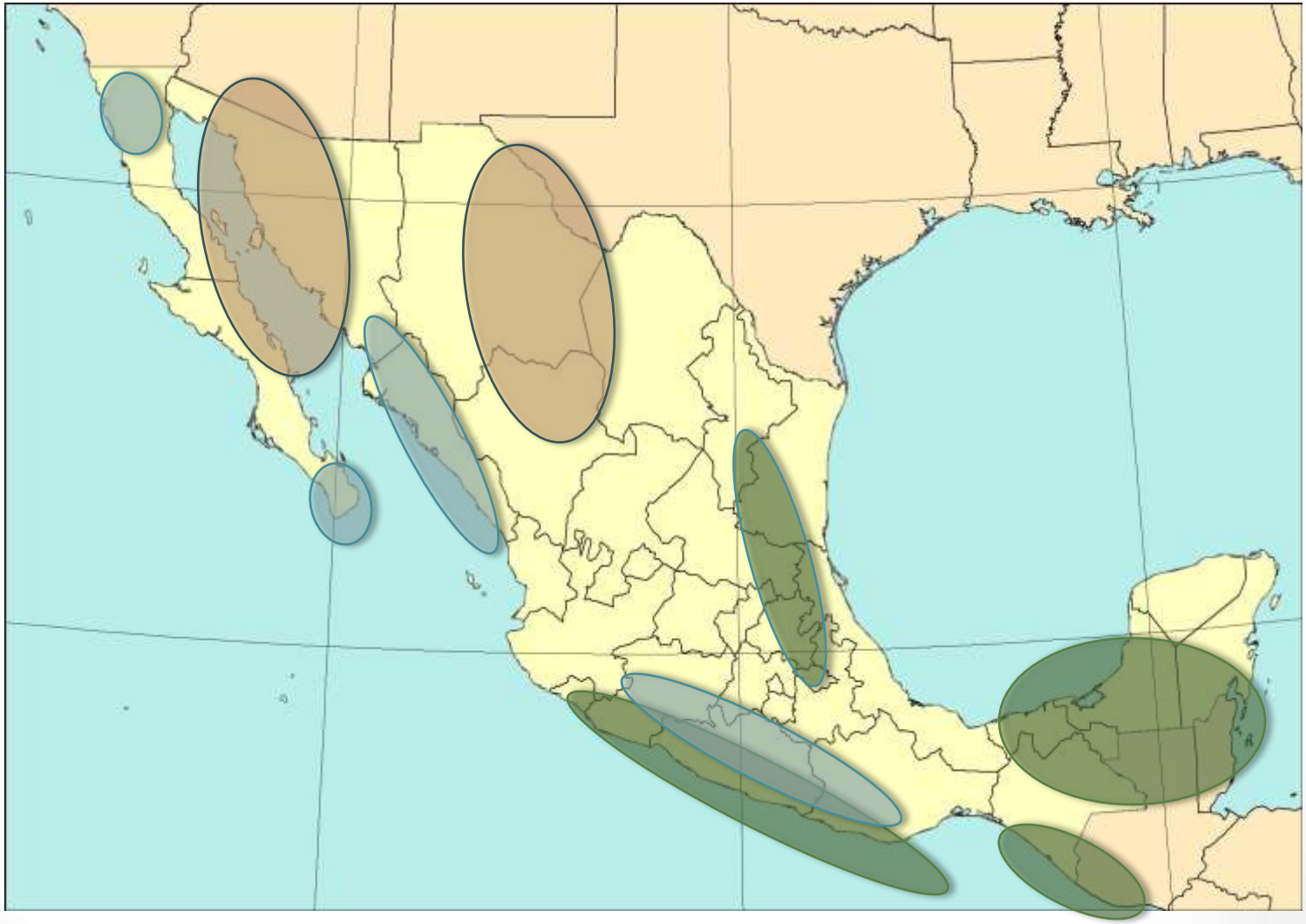
Áreas sub-muestreadas



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Publicaciones importantes sobre taxonomia de escarabajos ambrosiales y descortezadores.

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www.barkbeetles.info

Bark and Ambrosia Beetles

Home | Regional Checklists | US and Canada | SE U.S. | Mexico | Images | Database | Links | Articles | About

Oviposition galleries of *Ips calligraphus* (Germar) in *Pinus elliottii elliottii*. Gainesville, Florida. T.H. Atkinson.

Bark beetles and ambrosia beetles form a large group of small wood-boring beetles that bore into trees, shrubs and vines in all forest and shrub habitats throughout the world, from deserts to rain forests. A wide variety of hosts are used. The best known species are destructive pests of coniferous forests, especially in the Northern Hemisphere. Other species may be pests of ornamental, fruit, and forest trees. Most species are not considered economically important. The group is very diverse in terms of life cycles, host plants interactions and behavior.

This site is dedicated to the bark and ambrosia beetles of the New World. Information presented here is based on a database that includes 54,541 collection records for 7,787 species. At present, information on species from the U.S., Canada, and Mexico is essentially complete. Information on species from Central America is approximately 85% complete. Host and distribution records are taken from 245 articles, monographs, and other databases. Numerous unpublished records are also included. At present this information is accessible via expandible checklists for:

- Customized Regional Checklists
- The U.S. and Canada (including Alaska)
- The Southeastern U.S.
- Mexico

Through the checklists and indices, information on synonyms, host plants, distribution, images, and distribution maps for individual species is available. Checklists for individual states and Central American countries will be added in the near future.

Image Library. An image library includes 4,485 photographs and line drawings for 1,073 species from North, Central, and South America. These come from a wide variety of published and unpublished sources. Additional images from others are welcomed. Please contact me for details.

Almost by definition, this site and associated pages will always be a work in progress. Once the information is posted, I can't control how viewers use it. I would strongly suggest that the information not be quoted without contacting me. The posted information may not be the most current. Feel free to contact me with questions, comments, and suggestions. Inevitably in a project of this size there will be errors of all sorts, so let me know if you come across any. In the relatively

News and Notices

- Customized regional checklists (Nov. 3, 2013).
- All data complete for Canada, U.S., Mexico (May 15, 2013).
- Final photos from Wood (2007) (May 11, 2013)
- Bark and Ambrosia Beetles of California (Bright & Stark 1973).
- Distribution records from EDRR trapping, 2006-2011
- New photos from Wood (2007) (September 17, 2012)
- Bark and ambrosia beetles of the U.S. and Canada (July 7, 2012).

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Base de Datos

- Fuentes de datos
  - Mis colecciones
  - Ejemplares vistos en museos
  - Publicaciones taxónomicas publications
  - Otras publicaciones científicas
  - Otros bases de datos
- Imágenes útiles para identificación
- Cobertura Regional
  - Canadá, EUA, México, Centroamérica, 100%
  - Caribe 90%
  - Sudamerica 60 % (final de 2016)

Estadisticas

- 68,219 registros (3,894 especies)
- 14,600 fotografías y dibujos (2,279 especies)
- 358 referencias
- 209 museos
- 7943 especies (mundial)
  - 13,113 nombres
  - 14,296 acciones taxonómicas

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Regiones de interés definidos por el usuario

Eventually these will disappear because the same information is available here.

Click on headers to expand selection menus

Canada and the U.S.

Canada and U.S. (continental N. America)

Canada (country)

Provinces of Canada

U.S. (country)

U.S. States

North American Regions

Mexico

Mexico (country)
States of Mexico

Central America

Central America (region)

Note: While the list of species for Central America is complete, some synonyms, distributions and host information is still missing. These lists are preliminary.

Individual Countries

Default: Norte y Centroamérica

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Resúmen

Bark and Ambrosia Beetles of Mexico (county)

Home | Regional Checklists | US and Canada | SE U.S. | Mexico | Images | Database | Links | Articles | About

Bark and Ambrosia Beetles of Mexico (county): Overview

Summary

904 species of bark and ambrosia beetles (Curculionidae: Scolytinae [862] and Platypodinae [42]).
22 have been introduced from other continents
736 species of Scolytinae included by Wood (1982) (not necessarily *listed from Mexico (county)*)
126 species have been added since 1982

Inevitably there will be errors and omissions. I would appreciate it if these are brought to my attention.

Access to Species Information

Information on individual species can be accesed through 3 routes:

- condensed taxonomic list. For those familiar with the higher classification of the group, this allows a quick lookup. Clicking on names of tribes, subtribes, and genera will expand (or close) sublists down to the species level.
- checklist of the species of Mexico (county). For those with some familiarity with the classification, but need a little help a checklist of all species that the user can scroll through.
- alphabetical Index. It may be easier in some cases just to look up a species in the alphabetical Index. All currently accepted names as well as all synonyms of which I am aware are included. This means that even if you can't keep up with all of the name changes, you should still be able to find your beetle.

Species Information

Clicking on the book icon (📖) will bring up information on a particular species. There are separate sections for images (if any are available), synonymy, a summary of distribution records from the database, a summary of host and trapping information from database records, a list of references from which information was taken for the species, a distribution map, and a table of data records. In the references section, links are provided to the pages in the Wood (1982) monograph and in the Wood & Bright (1992) catalog where the species is treated.

Return to top

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Bark and Ambrosia Beetles of Mexico (county)

Home | Regional Checklists | US and Canada | SE U.S. | Mexico | Images | Database | Links | Articles | About

Regional Checklist: Bark and Ambrosia Beetles of Mexico (county) (Overview)

Explanation of symbols
* = non-native species | = link species information | Click on any underlined taxon name to expand or collapse.

Platypodinae

Schedlariini
Schedlariina

Tesserocerini
Tesserocerina

Platypodini
Platypodina

Scolytinae

Hylesinini
Hylastina
Hylastes

Hylurgops
Hylurgops incomptus (Blandford) 1896
Hylurgops longipennis (Blandford) 1896
Hylurgops planirostris (Chapuis) 1869
Hylurgops subcostulatus alternans (Chapuis) 1869
Hylurgops subcostulatus subcostulatus (Mannerheim) 1853

Hylesinina
Hylurgina
Phrixosomatina
Bothrosternina
Phloeotribina
Phloeosinina

Listado condensado

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Bark and Ambrosia Beetles of Mexico (county)

Home | Regional Checklists | US and Canada | SE U.S. | Mexico | Images | Database | Links | Articles | About

Regional Checklist: Bark and Ambrosia Beetles of Mexico (county) (Overview)

Explanation of symbols
* = non-native species | = link species information | Click on any underlined taxon name to expand or collapse.

Platypodinae

Schedlariini
Schedlariina
Schedlarius
Schedlarius mexicanus (Duges) 1885

Tesserocerini
Tesserocerina
Tesserocerus
Tesserocerus dewalquei Chapuis 1865
Tesserocerus ericius Blandford 1895
Tesserocerus retusus Guerin-Meneville 1838
Tesserocerus rudis Chapuis 1865
Tesserocerus schmutzenhoferi Schedl 1977
Tesserocerus spinolae Chapuis 1865

Platypodini
Platypodina
Costaroplatus
Costaroplatus pulchellus (Chapuis) 1865
Costaroplatus pulcher (Chapuis) 1865
Epiplatypus
Epiplatypus annexus (Wood) 1966
Euplatypus
Euplatypus alternans (Chapuis) 1865
Euplatypus angustatus (Chapuis) 1865
Euplatypus compositus (Say) 1823
Euplatypus haagi (Chapuis) 1865

Listado expandido

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Bark and Ambrosia Beetles of Mexico (county)

Home | Regional Checklists | US and Canada | SE U.S. | Mexico | Images | Database | Links | Articles | About

Bark and Ambrosia Beetles of Mexico (county): Alphabetical Index Valid Names and Synonyms (Overview)

This index includes all current names as well as synonyms for species known from Mexico (county). It also includes most combinations used in major publications in the U.S. Current names are shown in bold italics. Please let me know if any names are missing.

A| B| C| D| E| F| G| H| I| J| K| L| M| N| O| P| Q| R| S| T| U| V| W| X| Y| Z

A ↑

- ***Acanthotomicus mimicus*** (Schedl) 1961
- ***Ambrosiodmus coffeiceus*** (Schedl) 1951
- ***Ambrosiodmus ferus*** Wood 1986
- *Ambrosiodmus guatemalensis* Hopkins 1915
- ***Ambrosiodmus hagedorni*** (Iglesias) 1914
- *Ambrosiodmus linderae* Hopkins 1915
- ***Ambrosiodmus obliquus*** (LeConte) 1878
- ***Ambrosiodmus rubricollis*** Eichhoff 1875
- ***Ambrosiodmus rugicollis*** (Blandford) 1989
- ***Ambrosiodmus rusticus*** (Wood) 1974
- ***Amphicranus brevipennis*** Blandford 1905
- ***Amphicranus cordatus*** (Bright) 1972
- *Amphicranus crenatus* Eichhoff 1878
- *Amphicranus dentatus* Eggers 1931
- *Amphicranus elegans* Eichhoff 1869
- ***Amphicranus filiformis*** Blandford 1905
- ***Amphicranus hybridus*** Blandford 1905
- ***Amphicranus melanurus*** (Blandford) 1904
- *Amphicranus mexicanus* Eggers 1931
- ***Amphicranus micans*** Wood 1976
- ***Amphicranus micidus*** Wood 2007
- ***Amphicranus parilis*** Wood 1975

Índice de nombres y sinónimos

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Bark and Ambrosia Beetles of Mexico (county)

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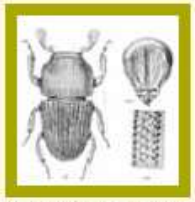
Página de especie

Camptocerus auricomus Blandford 1986

Images: Displaying 1 to 6 of 6

<- Species Index <- Taxonomic Index <- Subtribe Scolytina <- Genus *Camptocerus*

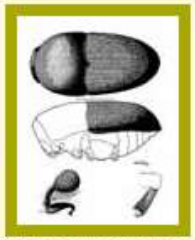
Camptocerus auricomus (female)

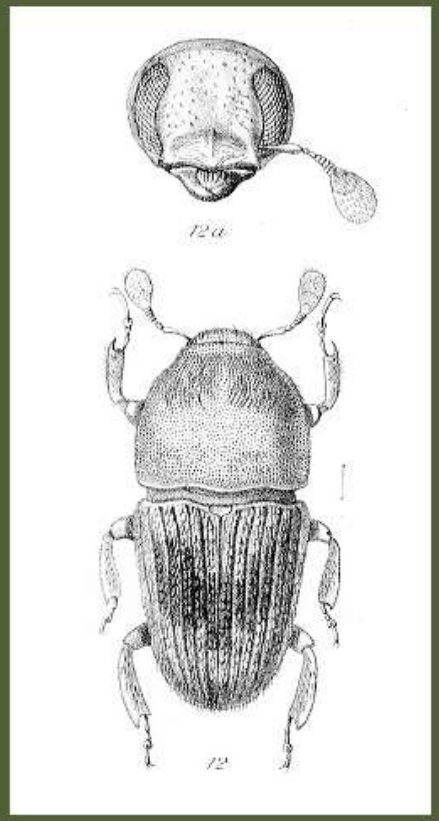

Camptocerus auricomus (male)

Camptocerus auricomus (male)

Camptocerus auricomus (male)

Camptocerus auricomus (male)


Camptocerus auricomus (-)



Camptocerus auricomus (female)(by Blandford, W.F.H.) Blandford, W.F.H. 1905. Biol.Centrali-Americana 4(6)

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Summary of Information

SYNONYMY

- *Camptocerus striatulus* Hagedorn 1904. Bull. Mus. Paris 10: 547
- *Camptocerus auricomus* Blandford 1986. Biol. Cent. Amer. 4(6): 125

DISTRIBUTION.

Numbers in parentheses after each geographic unit are the number of distinct collection events in the database for that unit. For exotic species generally only countries are listed for localities outside the New World. For further information on published sources of distribution, check the REFERENCES section.

- **Central America** (18)
  (1): *no state / prov. data* (1); **Costa Rica** (5): *Cartago* (1), *Heredia* (1), *Limón* (1), *Puntarenas* (1), *San José* (1); **Nicaragua** (1): *Chontales* (1); **Panamá** (11): *Bocas del Toro* (2), *Chiriquí* (2), *Panamá* (7);
- **North America** (2)
  México (2): *HGO* (1), *VER* (1);
- **South America** (3)
  Guyana (1): *unknown* (1); **Trinidad** (1): *no state / prov. data* (1); **Venezuela** (1): *Mérida* (1);

HOSTS

Numbers in parentheses after each host family, genus, or collection method are the number of distinct collection events in the database for that host or method.

- **No host information** (19);
- **Burseraceae** (2): ***Protium*** (2): *copalifera* (1), *sp.* (1);
- **Clusiaceae** (1): ***Rheedia*** (1): *edulis* (1);
- **Meliaceae** (1) **Cedrela** (1): *sp.* (1);

REFERENCES

The following are important recent monographs, catalogs, and supplements to catalogs that refer to this species. The specific page on which the reference is made is shown in pink at the [illegible] of the reference. In the case of Wood (1982) and Wood & Bright (1992) clicking on the reference page will link to a [illegible]al version of the work in question.

- **Wood, S.L. 1982.** The bark and ambrosia beetles [illegible]orth and Central America (Coleoptera: Scolytidae), a taxonomic monograph. Great Basin Nat. Mem. 6:1-1356. [416]. (data capture complete)
- **Wood, S.L., Bright,D.E. 1992.** A catalog of Scolytidae and Platypodidae (Coleoptera), Part 2. Taxonomic Index. Great Basin Nat. Mem. 13:1-1553 (vol. A, B). [319]
- **Wood, S.L. 2007.** Bark and ambrosia beetles of South America (Coleoptera: Scolytidae). Monte L. Bean Sci. Mus.,Provo, Utah. 900 pp. [207]. (all data not captured)

The following are references from which host and distribution data have been input into the database. If one of the above monographs or catalogs also appears in this list, i[illegible]eans that most relevant collection event data have been included.

1. **Anon. 2010.** Taxonomic Holdings & Ty[illegible]ings (http://www.arc.ent.msu.edu/holdings.php). Albert J. Cook Arthropod Research Collection. Web database, un[illegible]d, accessed June 6, 2010..
2. **Atkinson, T.H., Equihua M., A 1986.** Biology of Scolytidae and Platypodidae (Coleoptera) of a tropical rain forest in southeastern Mexico with an annotated checklist of species. Ann. Entomol. Soc. Amer. 79: 414-423.
3. **Bright, D.E., Skidmore, R.E. 1997.** A Catalog of Scolytidae and Platypodidae (Coleoptera), Supplement 1 (1990-1994). NRC Research Press: 1-368.
4. **Wood, S.L. 1982.** The bark and ambrosia beetles of North and Central America (Coleoptera: Scolytidae), a taxonomic

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- Preface
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- Biological Activities
- Economic Losses
- Classification
- Biogeography
- Methods

Systematic Section

- Family Scolytidae
- Key to Subfamilies, Tribes, and Genera

Subfamily Hylesininae

- Tribe Hylastini
- Tribe Hylesinini
- Tribe Hylurgini (Tomicini)
- Tribe Phrixosomatini
- Tribe Bothrosternini
- Tribe Phloeotribini
- Tribe Phloeosinini
- Tribe Hypoborini
- Tribe Polygraphini

Subfamily Scolytinae

- Tribe Scolytini
  - Cnemonyx
  - Camptocerus
    - Camptocerus quadridens Blackman
    - Camptocerus aeneipennis (F.)
    - Camptocerus infidelis Wood
    - Camptocerus niger (F.)
    - Camptocerus auricomis Blandford
  - Scolytopsis
  - Scolytus
- Tribe Hexacolini
- Tribe Micracidini
- Tribe Cactopinini
- Tribe Ipini
- Tribe Dryocoetini
- Tribe Crypturgini
- Tribe Xyloterini
- Tribe Xyleborini
- Tribe Cryphalini
- Tribe Corthylini

Camptocerus squamiger Chapuis, 1869, Synopsis des Scolytides, p. 51 (Syntypes, a male and a female, Cayenne; Brussels Mus.); Eggers, 1934, Ent. Nachrbl. 8:27. *Synonymy*

Camptocerus striatulus Hagedorn, 1904, Bull. Mus. Paris 10:547 (Syntypes; French Guyana; Paris Mus.); Eggers, 1933, Ent. Nachrbl. 7:20. *Synonymy*

DIAGNOSIS.— This species is distinguished from *auricomus* Blandford by the smaller size and by characters of the male frons described below.

MALE.— Length 2.6–3.5 mm, 1.8 times as long as wide; color dark brown, vestiture pale.

Frons as in *auricomus* except smooth, devoid of tubercle and carina.

Pronotum and elytra as in *auricomus* except vestiture usually uniformly pale and setae on lower half of declivity only slightly more slender than those on disc.

FEMALE.— Similar to female *auricomus* except interstrial punctures usually more distinctly, more extensively impressed, with their anterior margins finely granulate.

DISTRIBUTION.— Costa Rica to Brazil.

COSTA RICA: Hamburgfarm on Río Reventazon, Limón, 24-II-37, in trockenem holz, F. Nevermann. OTHER COUNTRIES: Brazil, Colombia, French Guiana, Peru.

HOST.— *Protium* sp.

NOTES.— Three female syntypes from the Copenhagen Collection and one female and one male syntype from the Kiel Collection, now at Copenhagen, were examined. The male is here designated as the lectotype of *Hylesinus niger* Fabricius. Four Dejean specimens of *squamiger* Chapius are now in the Chapius collection; of these, two are labeled "Amer. mer." and two are labeled Cayenne. The latter two, a male and a female, are considered to be syntypes. All four specimens are of *niger*.

Schedl (1940:205) reported this species from Costa Rica, although I have not seen Central American specimens. The above treatment was based on the five s[illegible]ypes of *niger*, on the four Chapius [illegible]ens of *squamiger*, and on 20 oth[illegible] American specimens.

5. *Camptocerus auricomus* Blandford

DIAGNOSIS.— This species is distinguished by the feebly elevated, procurved, transverse, male, frontal carina at the level of the antennal insertion, with a conspicuous, median, epistomal tubercle in the male, by the distinctive frontal vestiture in the male, and by other characters summarized in the above key.

MALE.— Length 3.3–4.0 mm, 1.8 times as long as wide; color dark brown, with abundant, erect scales in a variegated pattern, sparse scales and no pattern in female.

Frons moderately concave from eye to eye, from vertex to level of antennal insertion, ascending orad to a weakly elevated, procurved, transverse carina (precipitous on ventral side only), then flat to epistomal margin; epistomal margin armed by a rather large, rounded, median tubercle; surface of concavity smooth, dull, finely punctured, vestiture of long yellow hair in patches on either side of median line, much longer above, tips of none of hair reaching level of antennal insertion. Antennal club 1.2 times as long as wide; lateral half of suture 1 clearly indicated, septate; funicular fringe well developed.

Pronotum 0.83 times as long as wide; widest near base, sides arcuate, converging very little anteriorly on basal two-thirds, lateral margins slightly constricted just before broadly rounded anterior margin; surface dull, very closely, deeply, finely punctured, interspaces equal to less than diameter of a puncture; vestiture of fine, abundant short hair, and a few longer, coarse bristles on anterior third.

Elytra 1.1 times as long as wide; widest at base, sides almost straight on basal half, conspicuously converging posteriorly, narrowly rounded behind; scutellum twice as wide as long, flat; basal margins indistinctly marked by a raised line; striae not impressed, punctures small, distinct, close; interstriae about six times as wide as striae, flat, shining, punctures rather fine, dense, confused to indistinctly three-ranked, squamiferous. Declivity convex, moderately steep; strial punctures larger, deeper; interstriae less than twice as

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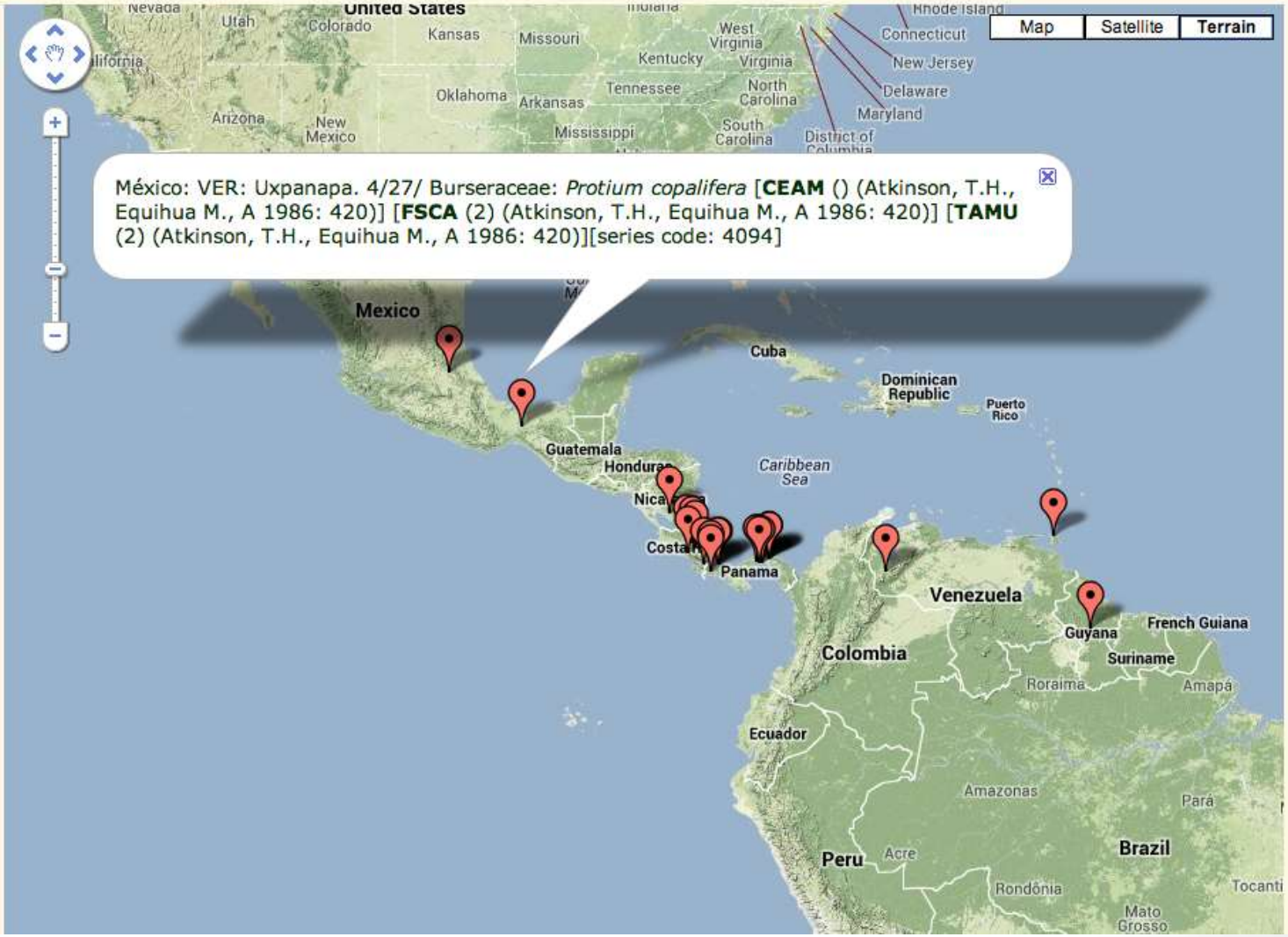
Distribution Map

Maps automatically open at the center of the plotted points and the scale is set to encompass all map points. Maps can be resized (scale bar at upper left) and the center moved (place cursor over map and drag) to see other parts of the distribution of the species. Clicking on a map marker will pull up collection event data and a literature citation if present. If any errors are found, please refer to the "series code" which is a unique identifier for a database record in any communications). Coordinates have not been entered for all collection records. Localities outside the New World are not plotted, even though they are listed in the distribution summary and in the table of records.



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Collection Records

No.	Collection data	Publication
Central America		
1->	, no state / prov. data; Meliaceae: *Cedrela sp.*	[**unknown** (0) (Wood, S.L., Bright, D.E. 1992: 319)]
2->	Costa Rica, Cartago, Peralta; 3/X/1964; Wood, S.L.; Burseraceae: *Protium sp.*	[**MSUC** (1) (Anon. 2010: 0)] [**SLWC** (1) (Wood, S.L. 1982: 416)]
3->	Costa Rica, Heredia, La Virgen, 10 km SE; 7/IV/2003; Riley, E.G.	[**TAMU** (1) (THA-2006, unpublished)]
4->	Costa Rica, Limón, Guapiles; 22/VI/1966; Wood, S.L.	[**SLWC** (1) (Wood, S.L. 1982: 416)]
5->	Costa Rica, Puntarenas, Finca Gromaco on Rio Coto Brus; 23/VII/1963; Wood, S.L.	[**MSUC** (1) (Anon. 2010: 0)] [**SLWC** (1) (Wood, S.L. 1982: 416)]
6->	Costa Rica, San José, Rio Damitas; 18/II/1964; Wood, S.L.; Clusiaceae: *Rheedia edulis*	[**MSUC** (1) (Anon. 2010: 0)] [**SLWC** (1) (Wood, S.L. 1982: 416)]
7->	Nicaragua, Chontales, Chontales; Belt, T.	[**BMNH** (1: *syntype(s)*) (Wood, S.L. 1982: 416)]
8->	Panamá, Bocas del Toro, Chiriqui Grande, 2 km WSW; 6/VIII/1999; Wappes, J.E.; Morris, R.	[**TAMU** (1) (THA-2006, unpublished)]
9->	Panamá, Bocas del Toro, Chiriqui Grande, 40 km W; 13/V/1999; Wappes, J.E.; Morris, R.	[**TAMU** (1) (THA-2006, unpublished)]
10->	Panamá, Chiriquí, Bugaba	[**BMNH** (1: *syntype(s)*) (Wood, S.L. 1982: 416)]
11->	Panamá, Chiriquí, Volcan Chiriqui; 1/II/1964	[**BMNH** (1) (Wood, S.L. 1982: 416)]
12->	Panamá, Panamá, Barro Colorado Isl.; 27/VIII/2012; Smith, S.M.	[**THAC** (2) (SMS-2012, unpublished)]
13->	Panamá, Panamá, Camino del Oleoducto; 28/VI/1997; Turnbow, R.H.	[**RHTC** (1) (THA-2008, unpublished)]
14->	Panamá, Panamá, El Llano-Carti Rd., km 8; 29/V/1984; Stockwell, H.P.	[**TAMU** (1) (THA-2006, unpublished)]
15->	Panamá, Panamá, El Llano-Carti Rd., km 8; 17/II/1992; Stockwell, H.P.	[**TAMU** (1) (THA-2006, unpublished)]

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Publications cited for distribution and host records

Distribution or host information was taken from the following 316 articles. Underlined references link to PDF copies. Please note that not all data from all mentions of a particular species species have been captured. This may be for several reasons:

- Some records are repetitive or simply uninformative.
- A more complete record has been entered from another source. For example Wood (1982: 752) lists only states (U.S.) and provinces (Canada) for *Trypodendron lineatum*, but lists localities in Wood (1957: 349).
- I haven't gotten to them yet.

1. **Anderson, D.M. 1974.** First record of Xyleborus semiopacus in the continental United States (Coleoptera: Scolytidae). United States Dept. Agric. Coop. Econ. Ins. Rept. 24(45 48): 863 864: 863-864.
2. **Anon. 2010.** Taxonomic Holdings & Type Holdings (http://www.arc.ent.msu.edu/holdings.php). Albert J. Cook Arthropod Research Collection. Web database, undated, accessed June 6, 2010..
3. **Anon. 2012.** Bugguide.net . Bugguide.net (downloaded March, 2012).
4. **Atkinson, T.H. 1989.** New species and notes on Mexican Hylesininae (Coleoptera: Scolytidae). Insecta Mundi 3(1): 57-64.
5. **Atkinson, T.H. 1989.** New synonymy, new species, and notes on Scolytidae (Coleoptera) from southeastern United States. Coleopterists Bull. 43(4): 325-337.
6. **Atkinson, T.H. 1993.** Rediscovery of 2 neotropical bark beetles (Coleoptera: Scolytidae) from southern Florida. Coleopterists Bull. 47 (2): 287-288.
7. **Atkinson, T.H. 1993.** A new species of Trischidias (Coleoptera: Scolytidae) from southern Florida with a key to the species of the southeastern United States. . Fla. Entomol. 76: 416-422.
8. **Atkinson, T.H. 1993.** A new species of Pityophthorus Eichhoff (Coleoptera: Scolytidae) from southern Florida with a key to the Florida species. Fla. Entomol. 76: 608-615.
9. **Atkinson, T.H. 2009.** A new species of Dryocoetoides Hopkins from southern Florida (Coleoptera: Curculionidae: Scolytinae). Zootaxa 2311: 66-68.
10. **Atkinson, T.H. 2010.** New species and records of Cactopinus Schwarz with a key to species (Coleoptera: Curculionidae: Scolytinae). Zookeys 56: 17-33.
11. **Atkinson, T.H., D. Carrillo, R.E. Duncan, Peña, J.E. 2013.** Occurrence of Xyleborus bispinatus (Coleoptera: Curculionidae: Scolytinae) Eichhoff in southern Florida. Zootaxa 3669 (1): 96-100.
12. **Atkinson, T.H., Equihua M., A 1985.** Lista comentada de los coleópteros Scolytidae y Platypodidae del Valle de México. Fol. Entomol. Mex. 65: 63-108.
13. **Atkinson, T.H., Equihua M., A 1985.** Notes on biology and distribution of Mexican and Central American Scolytidae (Coleoptera). II. Scolytinae: Cryphalini and Corthylini. Coleopterists Bull. 39: 355-363.
14. **Atkinson, T.H., Equihua M., A 1985.** Notes on biology and distribution of Mexican and Central American Scolytidae (Coleoptera). I. Hylesininae, Scolytinae except Cryphalini and Corthylini. Coleopterists Bull. 39: 227-238.
15. **Atkinson, T.H., Equihua M., A 1986.** Biology of Scolytidae and Platypodidae (Coleoptera) of a tropical rain forest in

Gracias por su atención

hembra

macho

Corthylus mexicanus

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