

A guide to Florida's common bark and ambrosia beetles

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Images: J. Hulcr, T. Atkinson, C. Bateman, Z. Nolen, or ForestryImages.org



This guide provides an introduction to the biology and identification of Florida's bark and ambrosia beetles.

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What are bark and ambrosia beetles?

Bark and ambrosia beetles are a highly diverse group of forest insects. Most live peaceful lives inside dead or dying trees. The beetles help fungi reach normally inaccessible nutrients by burrowing into newly dead trees and together they begin the process of decay in the tree.



Why do bark beetles matter?

A few species of bark beetles, or fungi they carry, can contribute to major diseases in trees. These diseases can cause major disruptions to forest ecosystems, and the loss of valuable wood and tree products.

Where can I find the beetles?

- Bark or ambrosia beetles are found in every forest on earth.
- Trees containing bark beetles often have sawdust or sap on the outside:



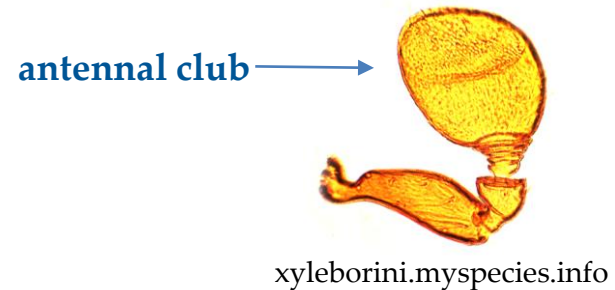
- Ambrosia beetles push compact noodles of sawdust outside the tree:



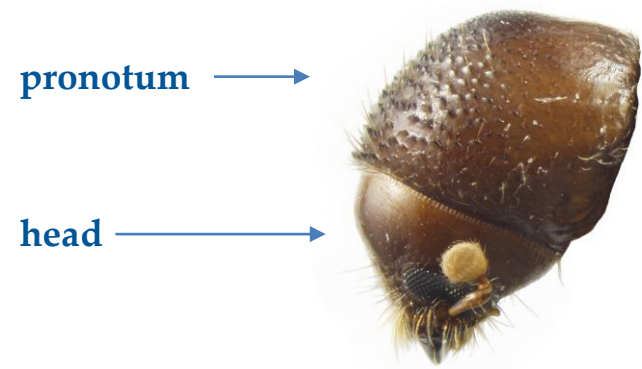
How to use this document

First, make sure you have either a bark or ambrosia beetle:

All have elbowed (bent) antennae with a large round club at the end:



All have a large, round head, often partly hidden inside their pronotum:



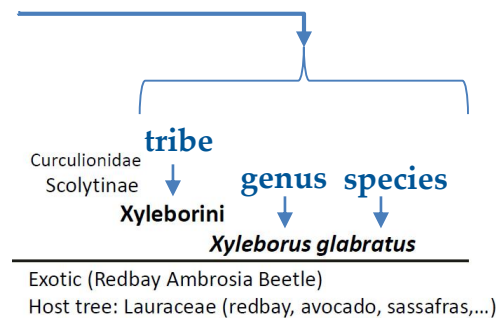
How to use this document

Next, simply scroll through the slides to see what looks right.

If there is a page for identifying a tribe or genus containing a species, use that first.

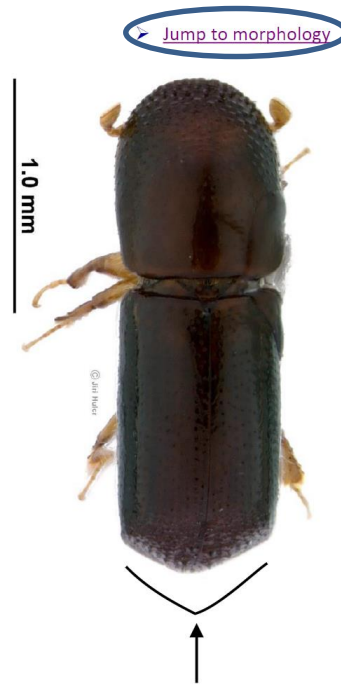
If there's a word you don't know, check the morphology page by clicking the link in the upper right corner.

If you think you have a match, check the ID characters using a microscope.



ID Characters:

- Shining, dark colored
- Distinctly pointed tip of declivity.
- Smaller than most Xyleborus.



That's it! Now you can compare your specimen to the following slides and see what you find.

Species descriptions of Florida's common bark and ambrosia beetles:

bark beetles

Subfamily SCOLYTINAE

Hylastini

Hylastes spp.

Hylurgini

Dendroctonus terebrans

Dendroctonus frontalis

Ipini

Ips avulsus

Ips grandicollis

Ips calligraphus

Orthotomicus caelatus

Pityophthorini

Pityophthorus spp.

Cryphalini

Hypothenemus spp.

Corthylini

Monarthrum mali

Gnathotrichus materiarius

Xyleborini

Ambrosiodmus spp.

Cnestus mutilatus

Euwallacea spp.

Xyleborinus saxesenii

Xyleborus affinis

Xyleborus ferrugineus

Xyleborus pubescens

Xyleborus glabratus

Xylosandrus amputatus

Xylosandrus crassiusculus

Xylosandrus compactus

Subfamily PLATYPODINAE

Myoplatypus flavicornis

Euplatypus compositus

ambrosia beetles

Curculionidae

Scolytinae

Hylurgini & Hylesinini

➤ [Jump to morphology](#)

Native

Host tree: conifers

ID Characters:

- Top of pronotum flat.¹
- Front edge of elytra curved and with rounded bumps/teeth.



Native

Sometimes **pests of live pines**

ID Characters:

- Head always visible from above.

***D. frontalis*:**

Southern pine beetle
tiny, 2-3mm.



***D. terebrans*:**

Black turpentine beetle
our largest bark beetle, 5-8mm.



Hylesinini

***Hylastes* genus**

Native

Primarily in pine roots

ID Characters:

- Head mostly invisible from above (compare *Dendroctonus*).



H. salebrosus

-less hair, broad

H. tenuis

-hairy, skinny



Curculionidae

Scolytinae

Ipini

Ips genus

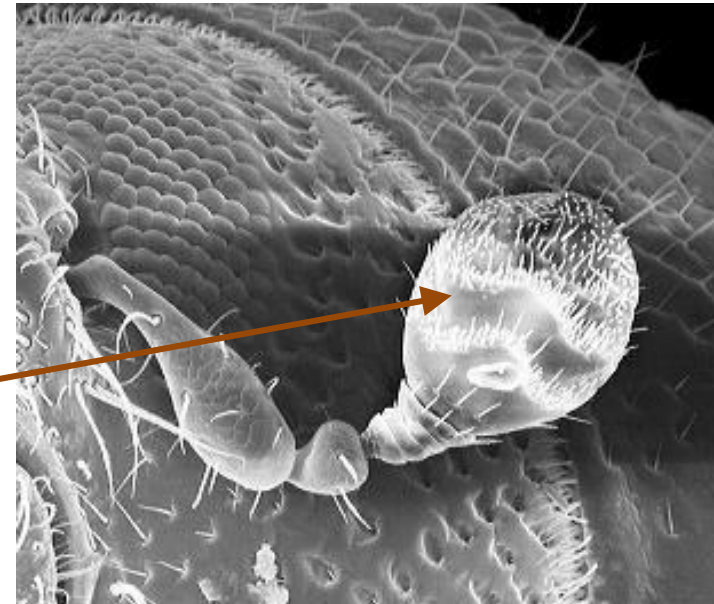
Native

Sometimes **pests of pines**

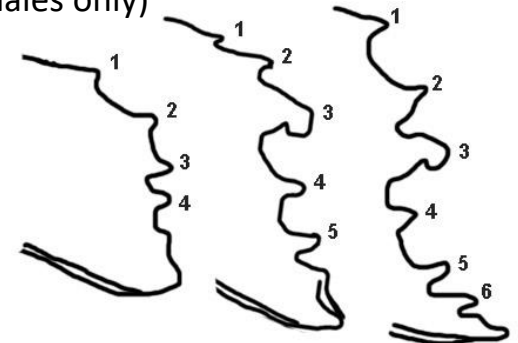
ID Characters:

- Segments of antennal club **wavy**.
- Elytra declivity excavated and with **large teeth**.
- *I. avulsus*: 2.1-2.8 mm
- *I. grandicollis*: 2.9-4.6 mm
- *I. calligraphus*: 3.8-5.9 mm

➤ [Jump to morphology](#)



I. avulsus, *I. grandicollis*, *I. calligraphus*
(males only)



Curculionidae

Scolytinae

Ipini

Orthotomicus caelatus

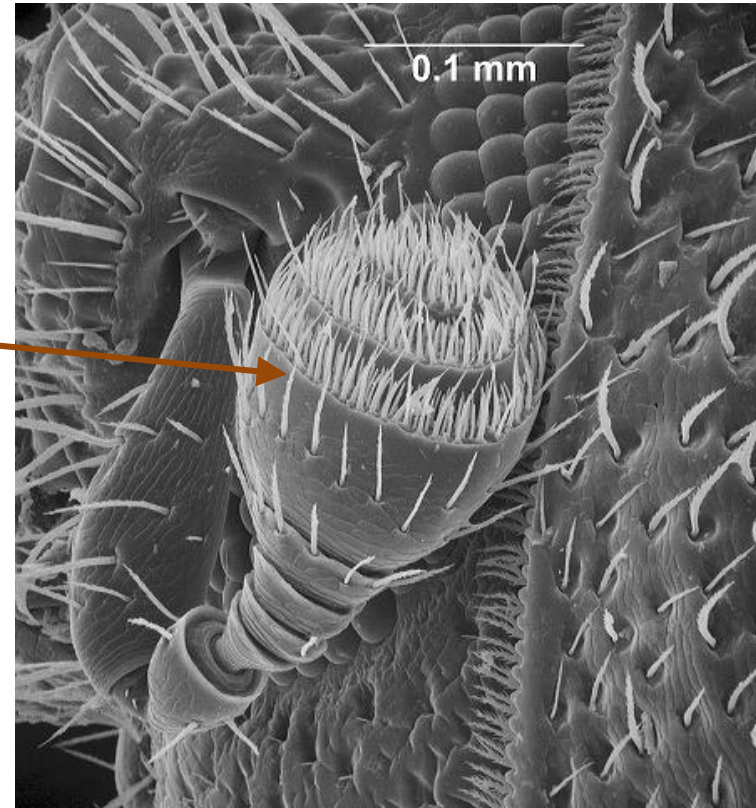
Native

Host tree: pines

ID Characters:

- Antennal sutures **curved inward**.
- Bottom of elytra declivity flat, no ridge like in [*lps.*](#)

➤ [Jump to morphology](#)



Curculionidae

Scolytinae

Cryphalini (pygmy borers)

Hypothenemus genus

Native & exotic

Host tree: diverse

ID Characters:

- The smallest bark beetles, no longer than 1.2 mm
- Hairy or scaly.
- Very noticeable **bumps or teeth on pronotum.**

➤ [Jump to morphology](#)

H. birmanus



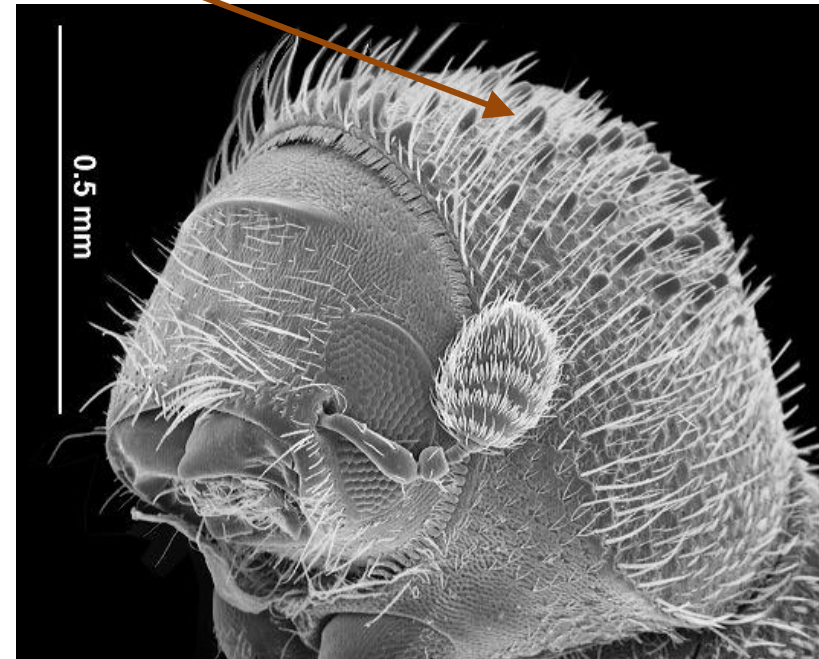
H. seriatus



H. eruditus



0.5 mm



Curculionidae

Scolytinae

Pityophthorini

***Pityophthorus* genus**

Native

Host tree: diverse

ID Characters:

- All small.
- Often hairy on frons.
- Antennal club small, flat, sutures curved.
- Layered curves on pronotum.

➤ [Jump to morphology](#)



Curculionidae



Scolytinae

Corthylini

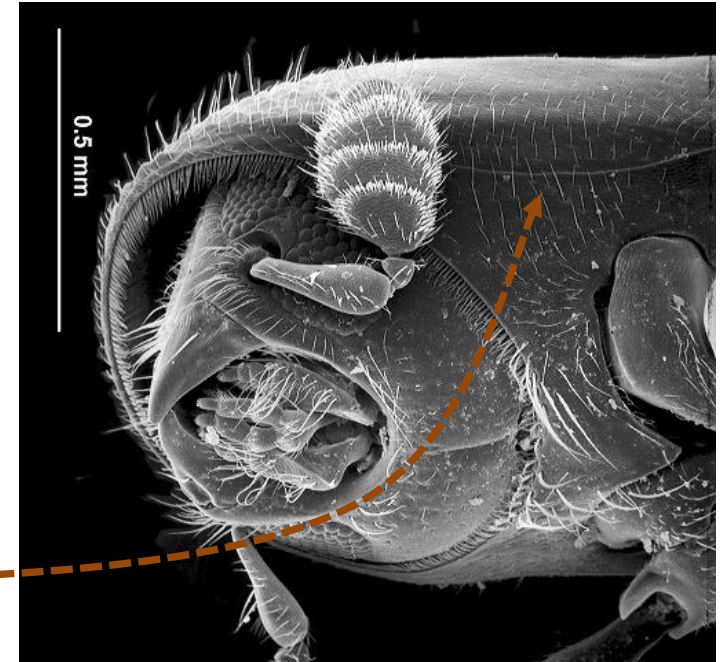
Native

Host tree: diverse

ID Characters:

- Eye deeply notched, ie: 
- Elongate, especially the pronotum.
- Sides of pronotum with a **fine raised line**. 
- Antennal club large, flat, with three clear sutures.

➤ [Jump to morphology](#)



Curculionidae

Scolytinae

Corthylini

Monathrum mali

Native

Host tree: broadleaf

ID Characters:

- Elongate, especially the pronotum.
- Elytra shallowly impressed along the middle, deeply at declivity.



Curculionidae
Scolytinae

Corthylini

Gnathotrichus materiarius

Native

Host tree: conifers

ID Characters:

- Shining, no hair.
- Elytral declivity rounded and pointed at the end.
- Sutures of antennal curved outward.
- Fine raised line on the top of pronotum.



➤ [Jump to morphology](#)



Curculionidae

Scolytinae

Xyleborini

➤ [Jump to morphology](#)

ID Characters:

- Eye notched.
- Antennal club mostly [type 1 and 2](#), sutures curved inward.
- Protibia wide and flat, and armed with teeth.
- Most of the ambrosia beetles!



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Curculionidae

Scolytinae

Xyleborini

***Ambrosiodmus* genus**

Exotic & native

Host tree: many, diverse

ID Characters:

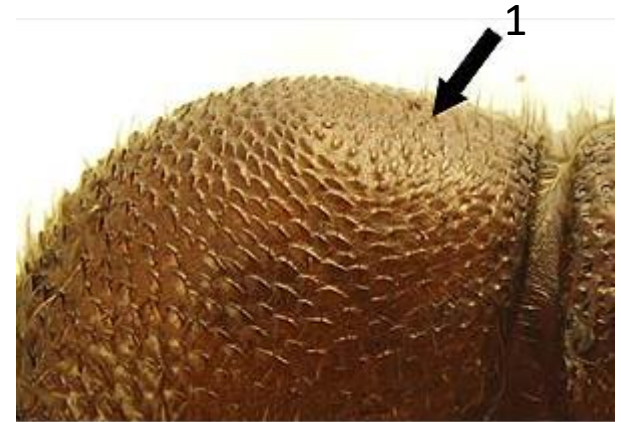
- Wide, pointed scales covering entire pronotum.¹
- Steep elytral declivity.

1.0 mm



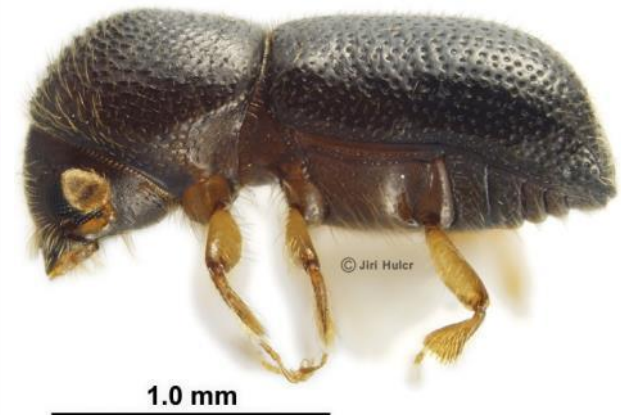
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➤ [Jump to morphology](#)



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1.0 mm



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1.0 mm

Curculionidae

Scolytinae

Xyleborini

***Euwallacea* genus**

Exotic

Host tree: many, diverse

ID Characters:

- Bulky, dark.
- Declivity gently sloped.

E. fornicatus (below) is the smallest species at 1.8 – 2.5 mm, and can range from brown to black



1.0 mm

➤ [Jump to morphology](#)



1.0 mm

Curculionidae

Scolytinae

Xyleborini

Cnestus mutilatus

Exotic

Host tree: many, diverse

ID Characters:

- Largest ambrosia beetle in North America.
- Abdomen much shorter than pronotum.



squished-looking
abdomen

Curculionidae

Scolytinae

Xyleborini

Xyleborinus saxesenii

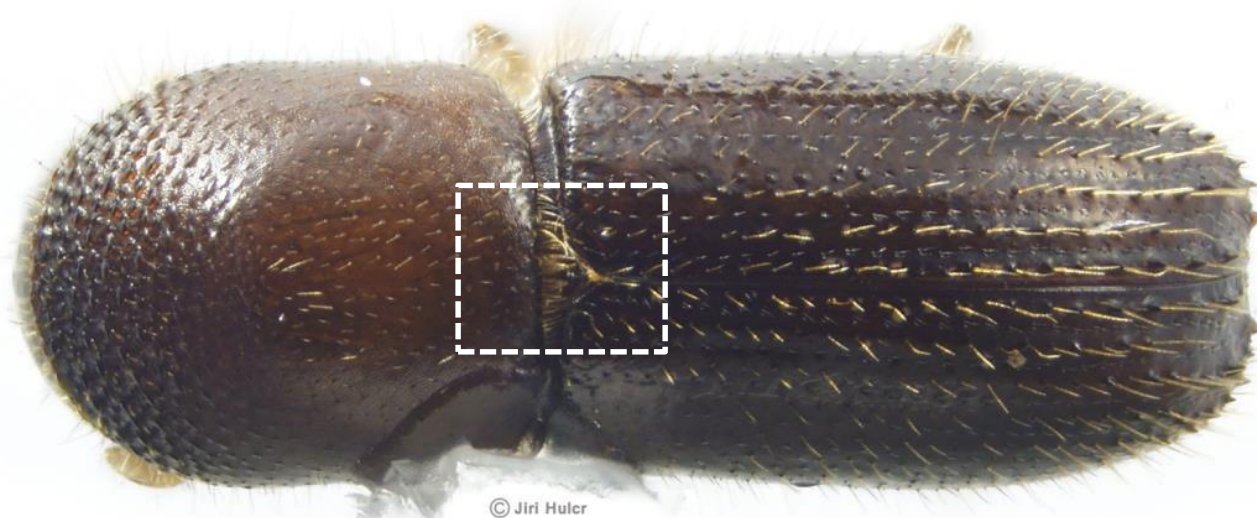
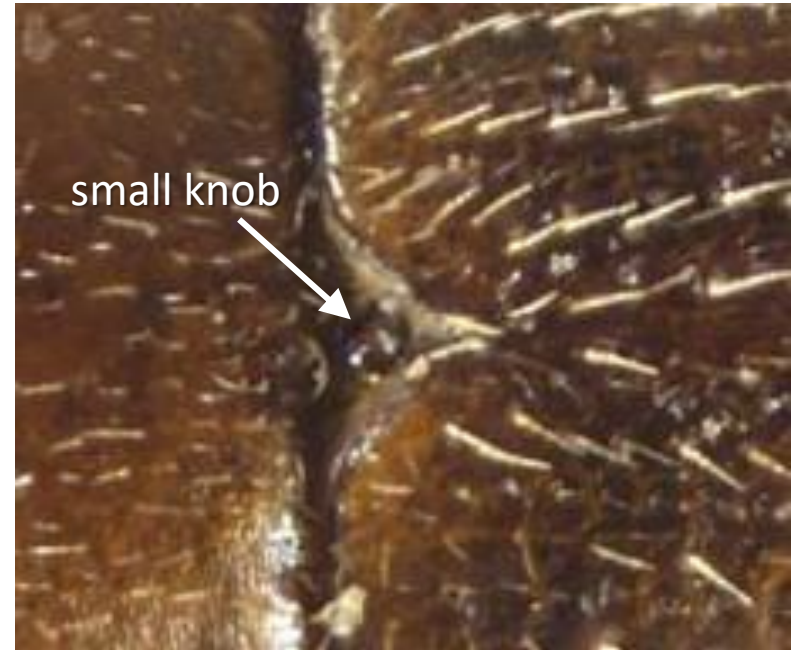
Exotic

Host tree: many, diverse

ID Characters:

- Small knob surrounded by hair between pronotum and abdomen (all species of *Xyleborinus*).
- Antenna club [type 1](#).

➤ [Jump to morphology](#)



© Jiri Hulcr

1.0 mm

Curculionidae

Scolytinae

Xyleborini

***Xyleborus* genus**

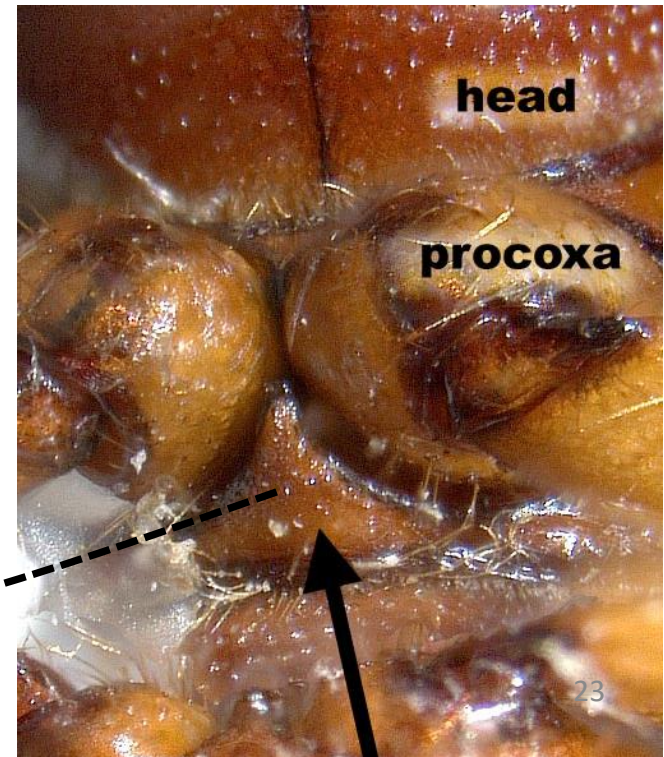
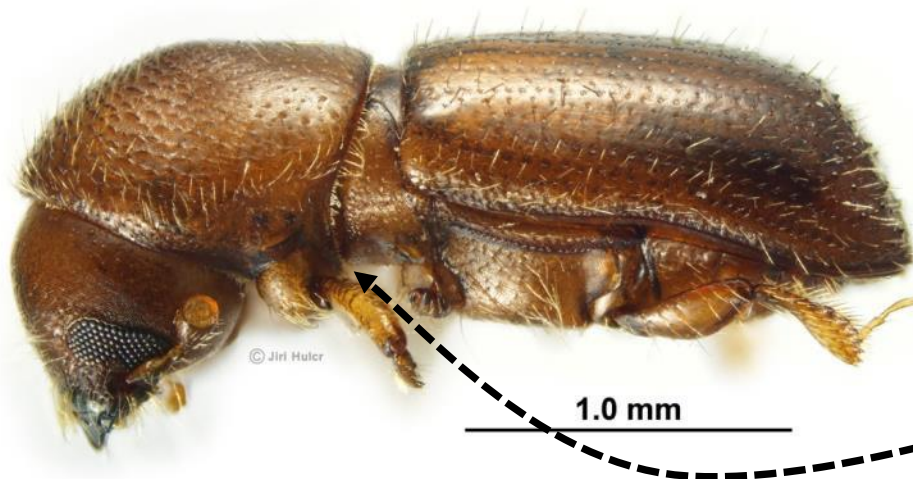
➤ [Jump to morphology](#)

Exotic & native

Host tree: many, diverse

ID Characters:

- Elongate, mostly light-colored.
- Antennal club [type 1 or 2](#).
- Posterocoxal process inflated (see below).

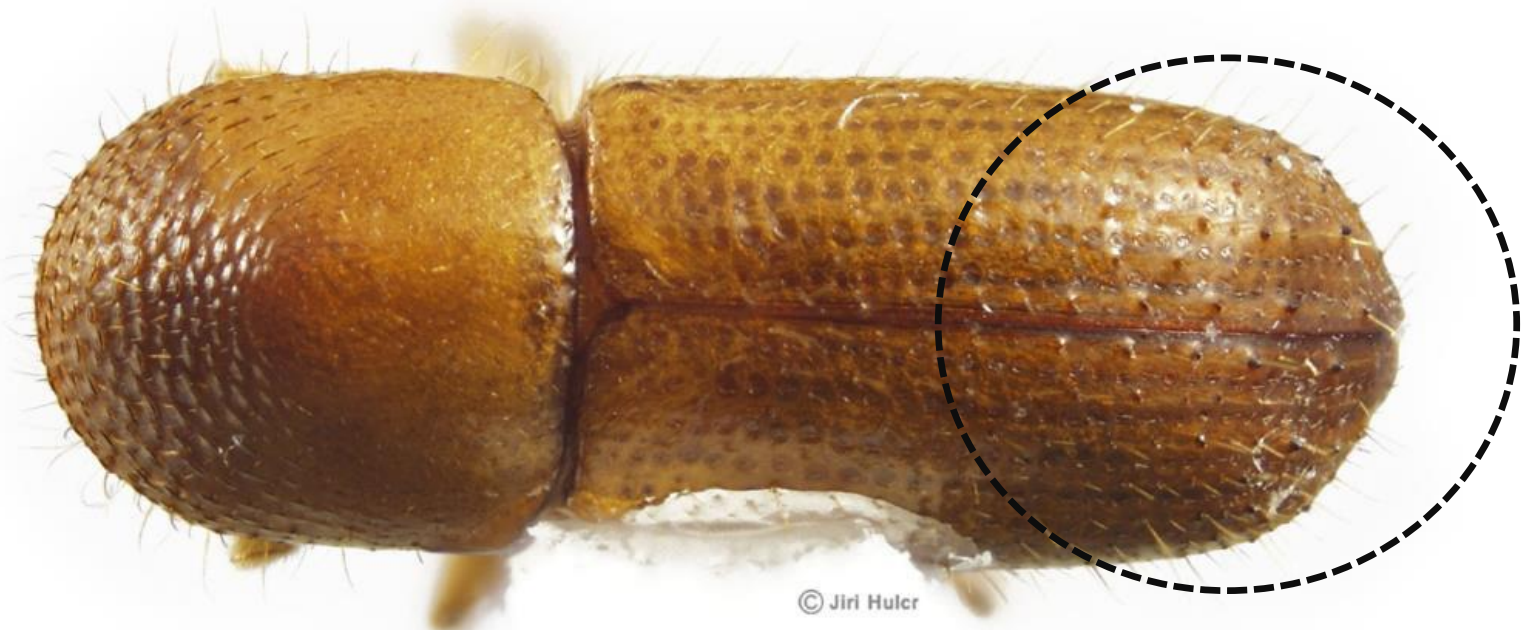


Native

Host tree: many, diverse

ID Characters:

- Dull, opaque (not shiny) elytral declivity **when dry**, with small bumps.



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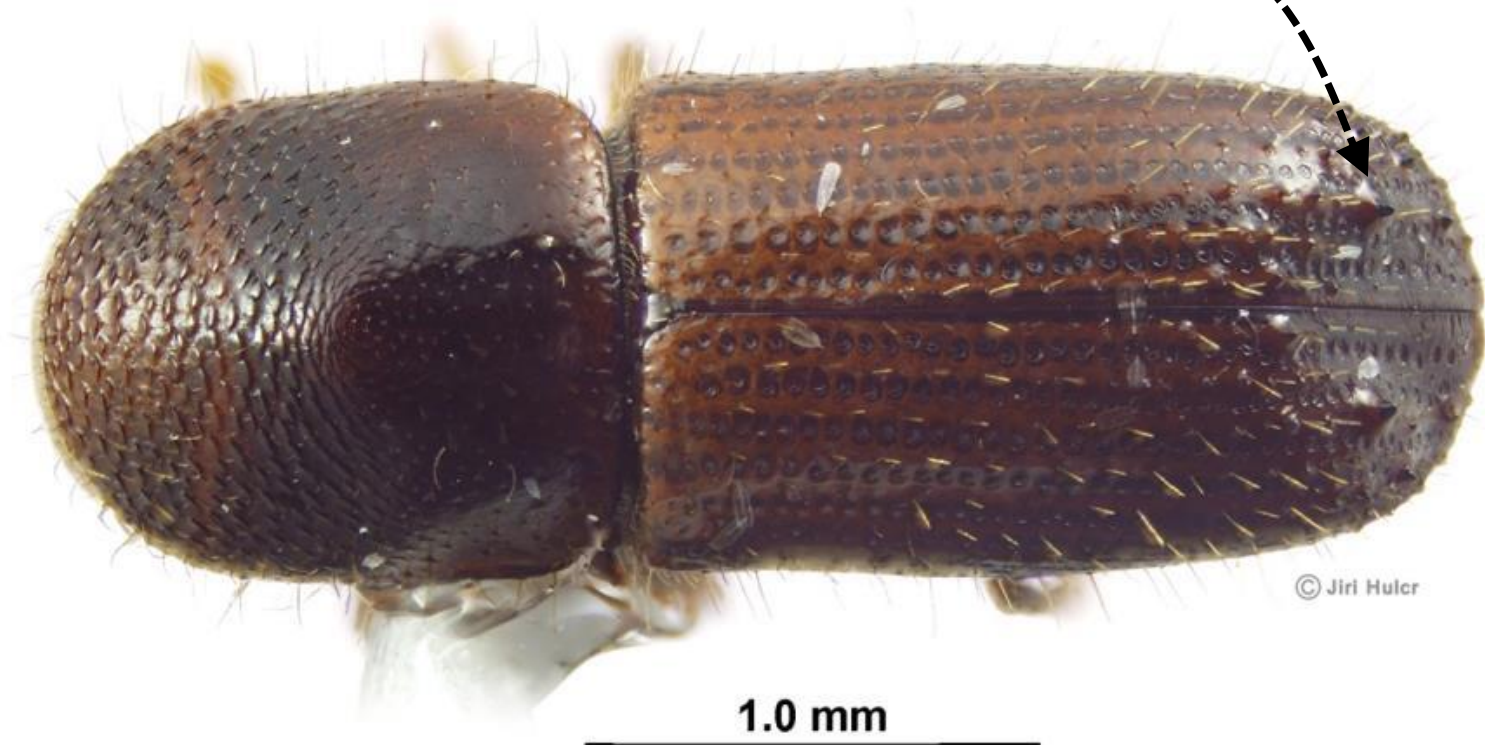
1.0 mm

Native

Host tree: diverse, often in pines

ID Characters:

- A pair of large projections on elytral declivity.
- Usually dark red/brown.



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Curculionidae

Scolytinae

Xyleborini

Xyleborus pubescens

➤ [Jump to morphology](#)

Native

Host tree: many, but primarily pine

ID Characters:

- Very similar to *X. affinis*, but declivity **shining**, steeper, and more rounded.



Curculionidae

Scolytinae

Xyleborini

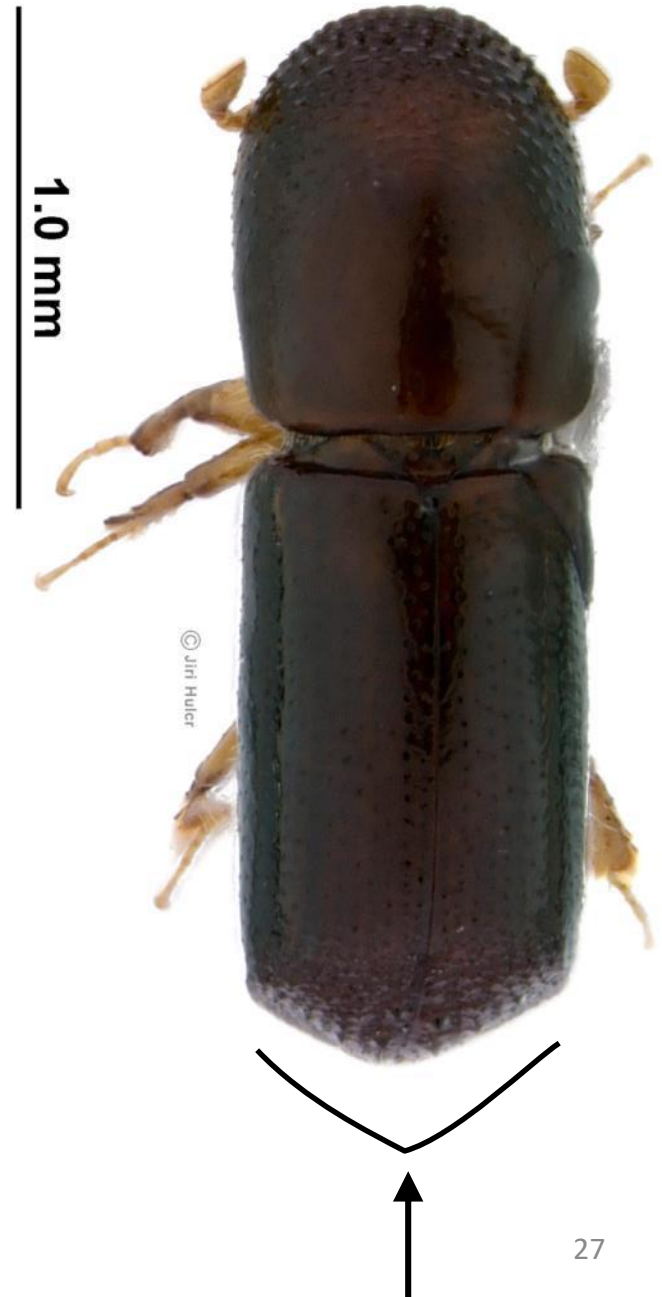
Xyleborus glabratus

Exotic (Redbay Ambrosia Beetle)

Host tree: Lauraceae (redbay, avocado, sassafras,...)

ID Characters:

- Shining, dark colored.
- Distinctly pointed tip of declivity.
- Smaller than most *Xyleborus*.



All exotic

ID Characters:

- Bulky species.
- Antennal club flat, truncated.
- Procoxae separated (see yellow arrows).



Curculionidae

Scolytinae

Xyleborini

Xylosandrus *amputatus*

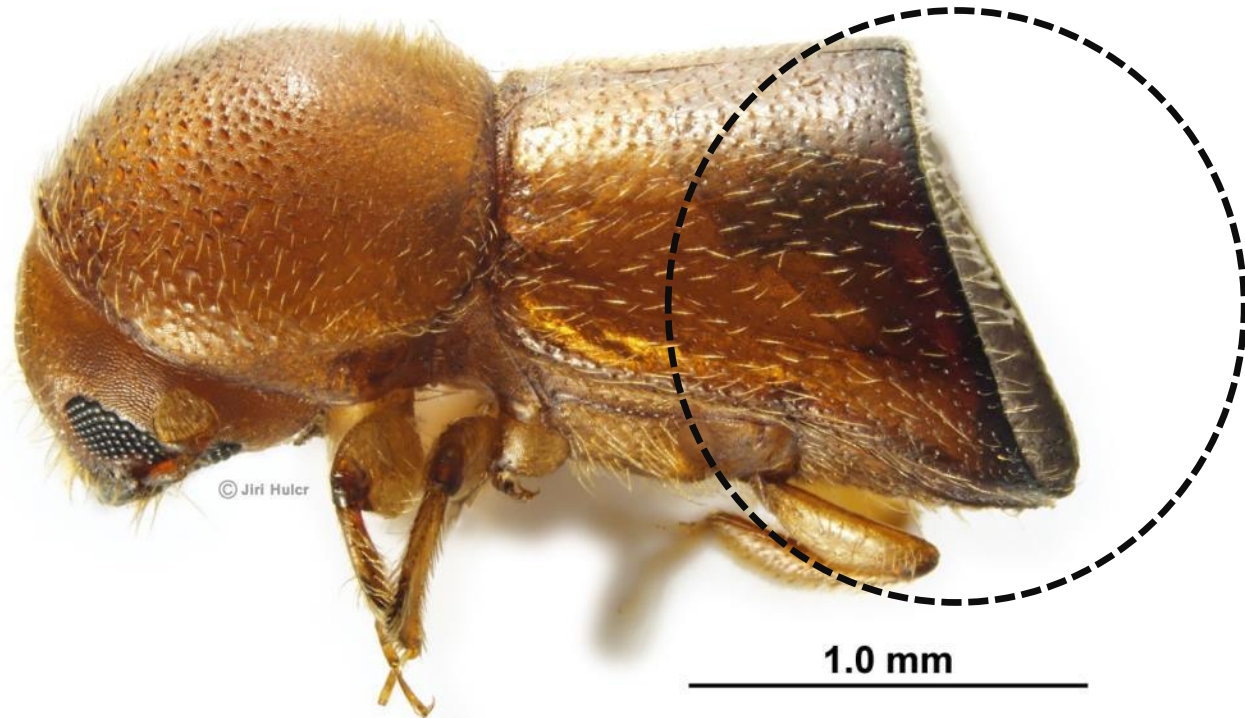
➤ [Jump to morphology](#)

Exotic

Host tree: broadleaf, but mostly unknown

ID Characters:

- Truncated elytral declivity.

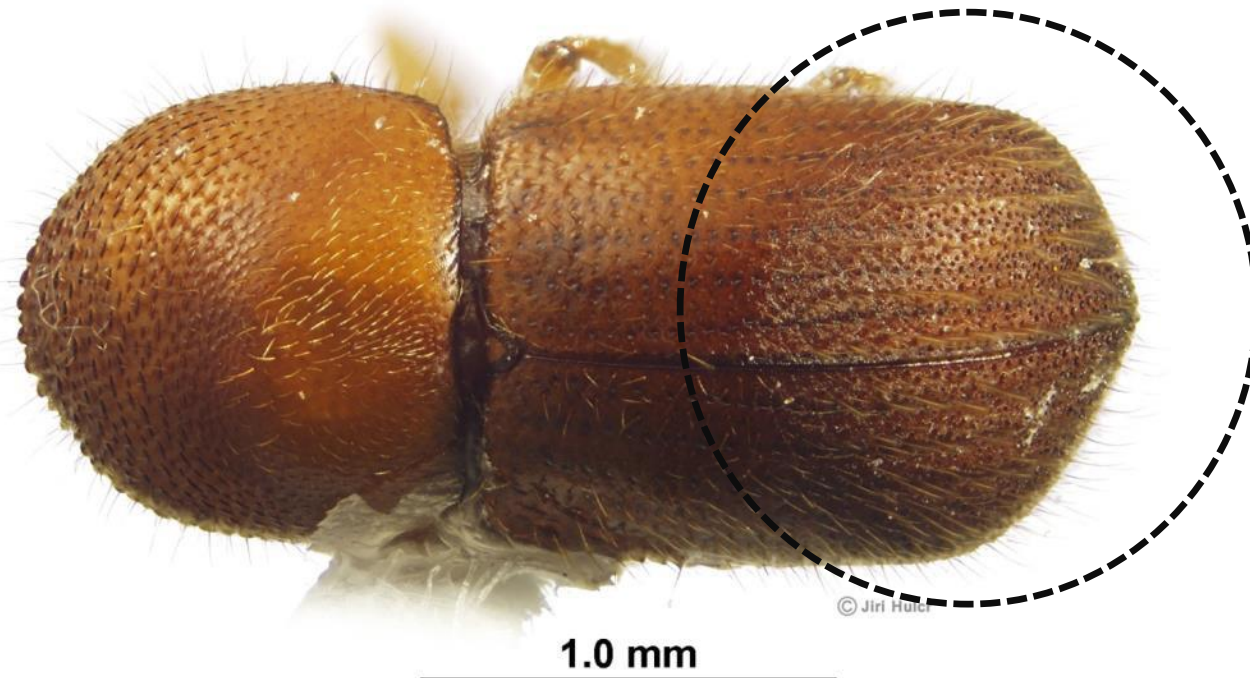


Exotic (Granulate Ambrosia Beetle)

Host tree: many, diverse

ID Characters:

- Dull, opaque (not shiny) elytral declivity **when dry**, and without any large bumps.



Curculionidae

Scolytinae

Xyleborini

Xylosandrus compactus

Exotic (Black Twig Borer)

Host tree: twigs of most broadleaf trees

ID Characters:

- Tiny, black, with shiny declivity



1.0 mm



➤ [Jump to morphology](#)

Platypodinae

Euplatypus compositus

Native

Host tree: hardwoods

ID Characters:

- Female elytral declivity blunt.
- Male declivity with two narrow, pointed projections.
- Female & male pronotum with two small pores.
- Very long leg segments (all platypodines).



female



Curculionidae
Platypodinae

Myoplatypus flavicornis

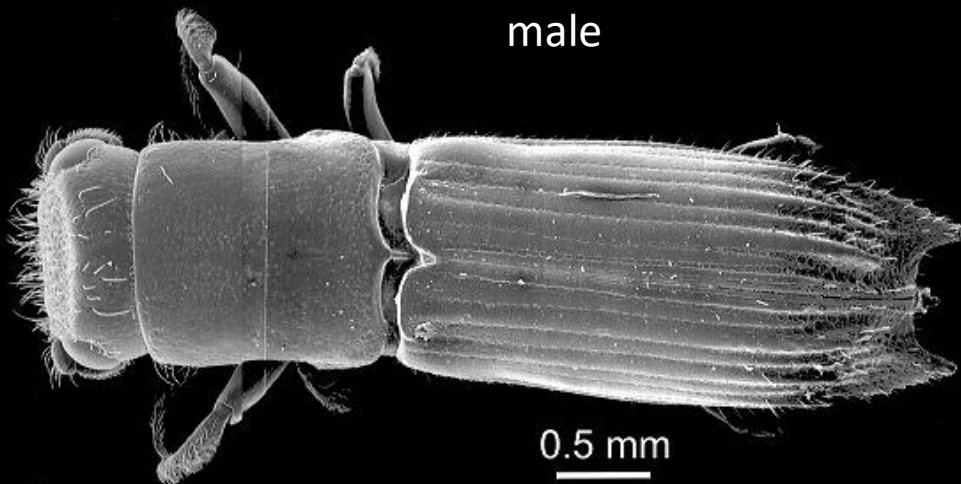
Native

Host tree: pines

ID Characters:

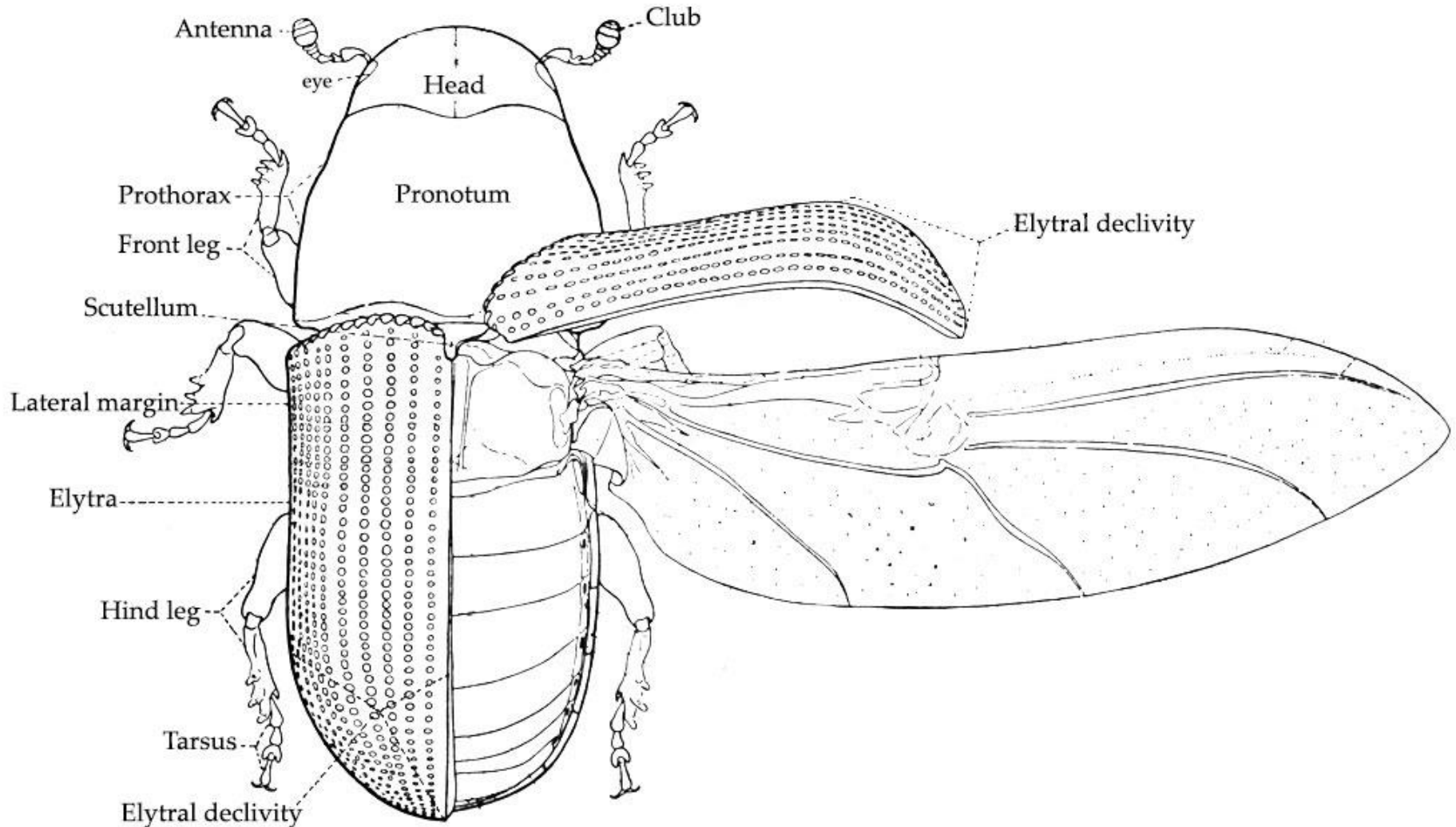
- Female elytral declivity with blunt projection.
- Male declivity with a more sharply pointed projection.
- Very long leg segments (all platypodines).

[Jump to morphology](#)



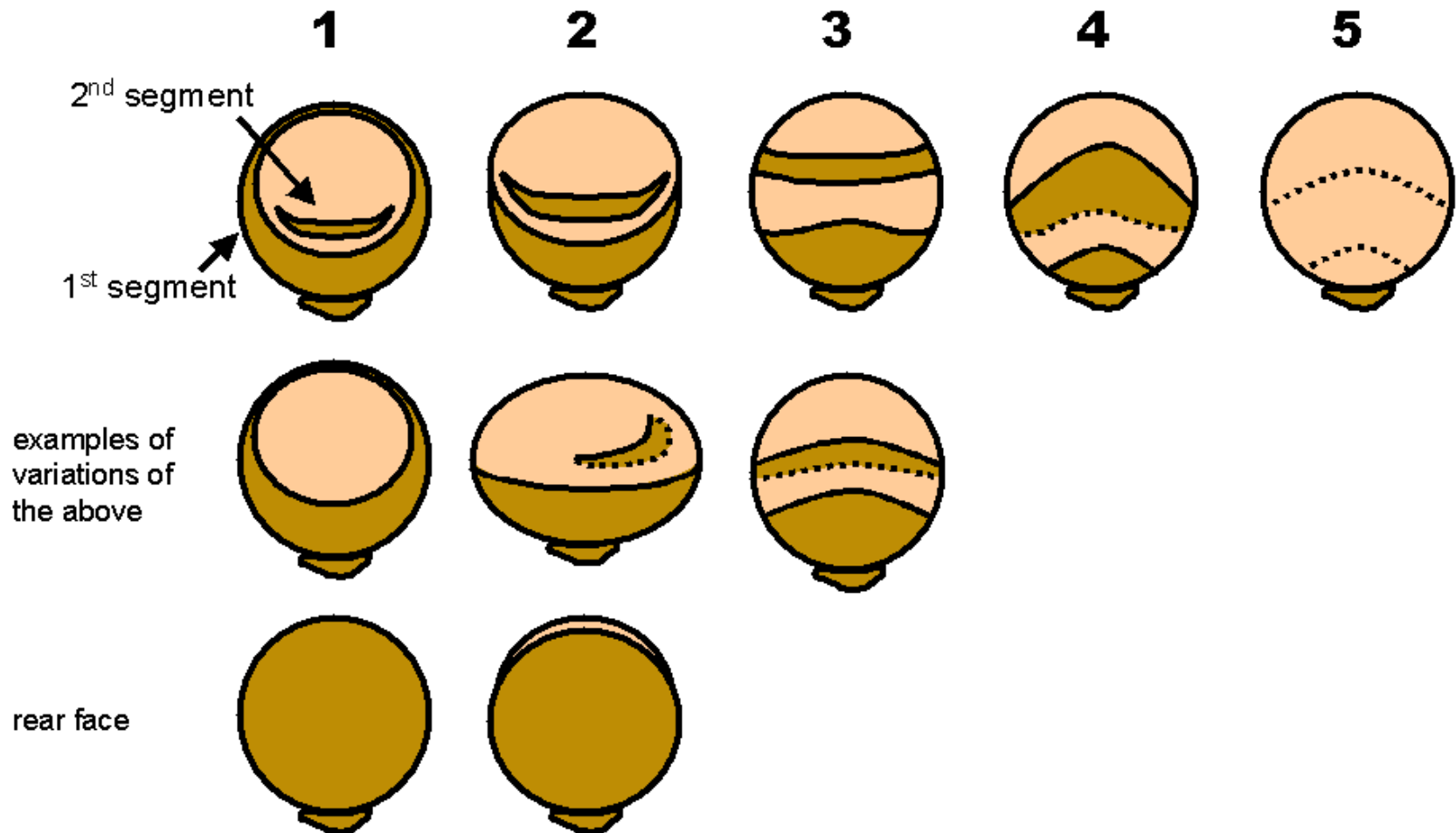
Important beetle morphology

➤ [Last slide viewed](#)



Antennal clubs

➤ [Last slide viewed](#)



Additional resources

Online Keys

- [Bark beetle genera of the US](#)
- [Bark beetles of Louisiana](#)
- [Key to Xyleborini of North America](#)
- [Key to Xyleborini genera](#)
- [S. Bambara's bark beetles of SE USA](#)

Beetle Resources

- [Backyard bark beetles](#): Trap beetles and contribute to a citizen science program!
- Interactive tool for identifying [Damage by the Redbay ambrosia beetle](#)
- [Tom Atkinson's bark beetles of Southeast USA](#)
- [World's bark beetle pictures](#)
- [The Xyleborini taxonomy database](#)
- [xyleborini.myspecies.info](#): A collaborative ambrosia beetle database - you can join!