A guide to Florida’s common bark and ambrosia beetles

Craig Bateman¹ & Jiri Hulcr¹,²
¹UF/IFAS School of Forest Resources and Conservation,
²Entomology and Nematology Department
Images: J. Hulcr, T. Atkinson, C. Bateman, Z. Nolen, or ForestryImages.org

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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:

You can trap beetles in a forest near you. Find out more from the *Backyard Bark Beetles* project.
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.

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:

<table>
<thead>
<tr>
<th>Subfamily SCOLYTINAE</th>
<th>Corthylini</th>
<th>Xyleborini</th>
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<td>Hylastini</td>
<td>Monarthrum mali</td>
<td>Ambrosiodmus spp.</td>
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<td>Gnathotrichus materiarius</td>
<td>Cnestus mutilatus</td>
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<td>Hylurgini</td>
<td>Dendroctonus terebrans</td>
<td>Euwallacea spp.</td>
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<td>Dendroctonus frontalis</td>
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<td>Ips calligraphus</td>
<td>Xyleborus pubescens</td>
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<tr>
<td></td>
<td>Orthotomicus caelatus</td>
<td>Xyleborus glabratius</td>
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<tr>
<td>Pityophthorini</td>
<td>Pityophthorus spp.</td>
<td>Xylosandrus amputatus</td>
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<td>Xylosandrus crassiusculus</td>
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<td>Xylosandrus compactus</td>
</tr>
<tr>
<td>Cryphalini</td>
<td>Hypothenemus spp.</td>
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</tr>
</tbody>
</table>

Subfamily PLATYPODINAE

| Myoplatypus flavicornis |
| Euplatypus compositus |
Curculionidae
Scolytinae
Hylurgini & Hylesinini

Native
Host tree: conifers

ID Characters:
• Top of pronotum flat.¹
• Front edge of elytra curved and with rounded bumps/teeth.

¹ Jump to morphology

Bugguide.net
Curculionidae  
Scolytinae  
**Hylurgini**  
*Dendroctonus* genus  

Native  
Sometimes *pests of live pines*  

**ID Characters:**  
- Head always visible from above.  

*D. terebrans:*  
Black turpentine beetle  
our largest bark beetle, 5-8mm.  

*D. frontalis:*  
Southern pine beetle  
tiny, 2-3mm.
Curculionidae  
Scolytinae

**Hylesinini**

*Hylastes genus*

Native  
Primarily in pine roots

**ID Characters:**

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

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- **H. salebrosus**  
  - less hair, broad

- **H. tenuis**  
  - hairy, skinny
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

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Jump to morphology
Curculionidae  
Scolytinae  
**Ipini**  

---

**Orthotomicus caelatus**

Native  
Host tree: pines

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**ID Characters:**

- Antennal sutures **curved inward.**
- Bottom of elytra declivity flat, no ridge like in *Ips.*
Curculionidae
Scolytinae

Cryphalini (pygmy borers)

*Hypotenemus* 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.**
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.
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.
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.
Curculionidae
Scolytinae
Xyleborini

**ID Characters:**
- Eye notched.
- Antennal club mostly [type 1 and 2](#), sutures curved.
- Protibia wide and flat, and armed with teeth.
- Most of the ambrosia beetles!
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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¹ Jump to morphology
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
Curculionidae
Scolytinae

**Xyleborini**

*Curculionidae Scolytinae Xyleborini Cnestus mutilatus*

Exotic
Host tree: many, diverse

**ID Characters:**

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

[Image of Xyleborinus saxesenii with small knob highlighted.]

1.0 mm
Curculionidae  Scolytinae  

**Xyleborini**

*Xyleborus* genus

Exotic & native  
Host tree: many, diverse

**ID Characters:**

- Elongate, mostly light-colored.
- Antennal club *type 1 or 2*.
- Posterocoxal process inflated (see below).
Curculionidae
Scolytinae

Xyleborini

\textit{Xyleborus} \textit{affinis}

Native
Host tree: many, diverse

**ID Characters:**

- Dull, opaque (not shiny) elytral declivity \textit{when dry}, with small bumps.
Curculionidae
Scolytinae

Xyleborini

**Xyleborus ferrugineus**

Native
Host tree: diverse, often in pines

**ID Characters:**
- A pair of large projections on elytral declivity.
- Usually dark red/brown.

Jump to morphology
Curculionidae
Scolytinae
Xyleborini

*Xyleborus pubescens*

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.
Curculionidae
Scolytinae

**Xyleborini**

**Xylosandrus**

All exotic

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**ID Characters:**

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

**Xyleborini**

*Xylosandrus amputatus*

Exotic
Host tree: broadleaf, but mostly unknown

**ID Characters:**
- Truncated elytral declivity.
Curculionidae
Scolytinae
Xyleborini

**Xylosandrus crassiusculus**

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
Curculionidae

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).
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).
Important beetle morphology

Modified after Hopkins 1909. Contributions toward a monograph of the scolytid beetles.
Antennal clubs

1. 2nd segment
2. 1st segment
3. Examples of variations of the above
4. Rear face
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!