



Powderpost Beetles and Other Wood-Infesting Insects¹

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Powderpost beetles can be serious pests of structures in Florida. The larvae of these beetles live in and consume dry, seasoned wood. The most common types of powderpost beetles in Florida are Anobiid, Lyctid, and Bostrichid beetles. Other wood infesting pests are oldhouse borers and carpenter bees. This publication explains how to recognize powderpost beetles and other wood-infesting pests as well as their damage to wooden structures (Table 1).

Anobiid Powderpost Beetles

Anobiid powderpost beetles (Figure 1) are usually about 1/16 to 1/4 inch long, reddish brown or grayish brown to dark brown. The body is cylindrical, elongated and covered with fine hair. The head is covered by pronotum from top view; the last 3 segments of antennae are usually lengthened and broadened. The larvae are white, "C" shaped grubs with rows of small spines on dorsal side (Figure 2). The beetles' life cycle lasts 1 to 10 years depending on the species. Anobiid powderpost beetles infest seasoned softwood and the sapwood of seasoned hardwoods.



Figure 1. Anobiid powderpost beetle. Credits: James Castner, University of Florida

Most commonly, infestations of Anobiid powderpost beetles are found in structural timbers made of softwood, such as beams, sills, joists, studs, subflooring, and plywood. In addition, Anobiids will infest hardwood furniture, wall paneling, window and door molding, hardwood floors, and furniture. Woods such as maple, beech, poplar, and pine are especially susceptible to attack. They prefer to infest wood with high moisture content in poorly ventilated areas in crawl spaces of houses, utility rooms, and garages. Under favorable conditions, the infestation then

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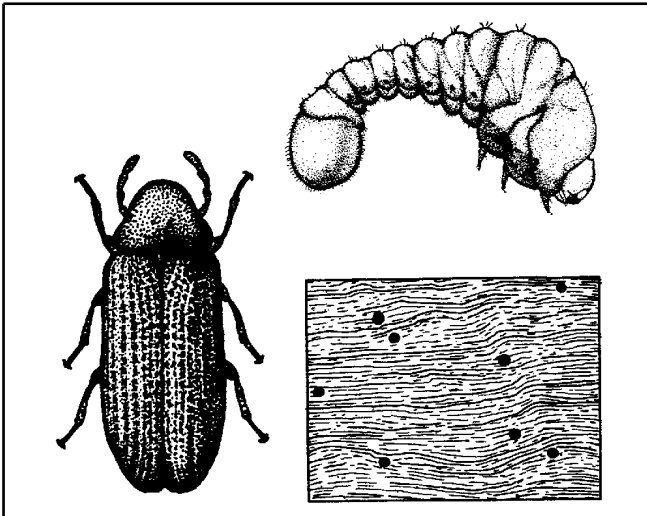


Figure 2. Deathwatch beetle (Anobiidae). Credits: University of Florida

spreads into walls and other areas of the structure. Infestations develop slowly but wood can be reinfested year after year.

Signs of Infestation

The key to avoiding serious problems with Anobiid powderpost beetles is early detection and control. Usually, homeowners see the damage rather than the beetles. The larval damage occurs entirely below the surface of the wood where larvae eat tunnels. This damage is not usually seen until the wood disintegrates. However, the adults emerge from the wood leaving emergence holes and powder-like frass that sifts from the holes.

Emergence holes from Anobiids are 1/16 to 1/8 inch in diameter, round in shape. Cigar-shaped frass is found loosely in tunnels and in small mounds outside of emergence holes. The frass is powderlike but feels gritty to the touch.

Bostrichid Powderpost Beetles

Bostrichid powderpost beetles (Figure 3) are 1/8 to 3/4 inch long, reddish brown to black in color. Their bodies are elongated and cylindrical with a roughened thorax. Heads are concealed by the pronotum from above; the antennae are short with 3 or 4 enlarged sawtoothed terminal segments. The larva is white, "C" shaped with no spines on body (Figure 4). The life cycle is 1 year. Bostrichids infest seasoned softwood and hardwood; especially

unfinished floors, window sills, furniture, etc. Bamboo items are especially susceptible to attack by some species of Bostrichid beetles.



Figure 3. Bostrichid powderpost beetle. Credits: James Castner, University of Florida

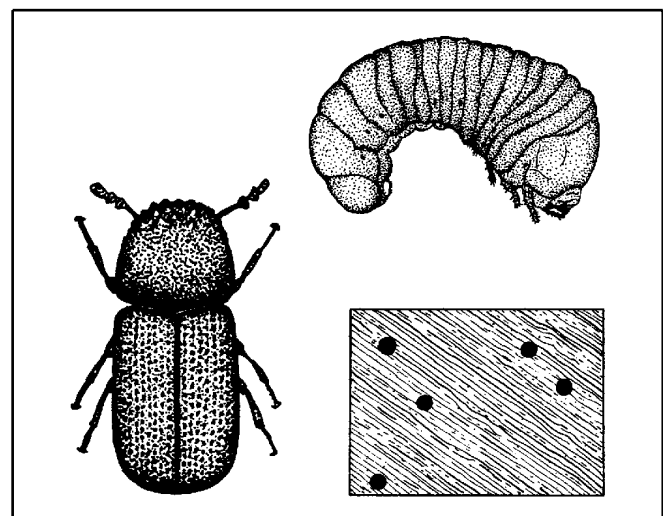


Figure 4. Bamboo borer (Bostrichidae). Credits: University of Florida

Signs of Infestation

The round emergence holes are 1/8 to 3/16 inch in diameter. Sawdust-like frass sticks together and is found tightly packed in galleries but not in entrance holes.

Lyctid Powderpost Beetles

Lyctid powderpost beetles (Figure 5) are about 1/4 inch long, brown in color, body elongated and slightly flattened, prominent head not covered by pronotum, and antennae with a 2-segmented terminal club. The larvae are white, "C" shaped, with 8th

abdominal spiracle enlarged (Figure 6). This beetle's life cycle is 6 months to 4 years.



Figure 5. Lyctid powderpost beetle. Credits: James Castner, University of Florida

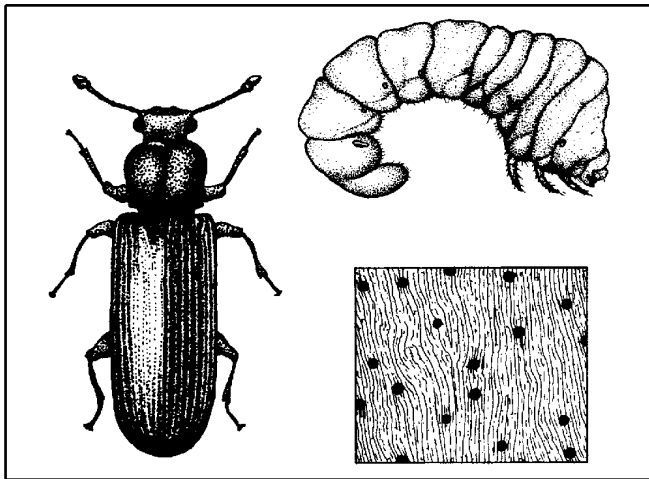


Figure 6. Powderpost beetle (Lyctidae). Credits: University of Florida

Lyctids infest the sapwoods of hardwoods; mainly ash, hickory, oak, maple, and mahogany. Consequently, most infestations are found in wood paneling, molding, window and door frames, hardwood floors, and furniture. Imported tropical hardwoods are especially infested with Lyctids because of poor storage and drying practices prior to shipment to the U.S. Joists, rafters, and subfloors of houses are not usually infested with Lyctids because they are usually made of pine or other softwoods.

Lyctids rarely infest wood older than 5 years. Therefore, infestations are usually in new homes or newly manufactured articles. Infestation usually results from wood that contained eggs or larvae at the time of purchase. Typically the item was made from wood that was improperly dried or stored.

Old House Borer

The larvae of the old house borer (a long-horned wood boring beetle - Cerambycid) (Figure 7) sometimes infest softwoods in Florida. The adult beetle is grayish-black, 1/2 to 3/4 inch in length with several white markings on the wing covers and long antennae. The female lays eggs in crevices of logs or timbers. The larvae hatch and require 3 to 5 years or more to mature. The larvae are 1/2 to 1 1/2 inches long and are white, segmented and have an enlarged, brownish head (Figure 8). They bore through the wood making irregular galleries. During quiet times, their feeding may be heard as a clicking or rasping sound. The beetles emerge through an oval hole about 1/4 to 3/8 inch in diameter.



Figure 7. Old house borer adult. Credits: James Castner, University of Florida

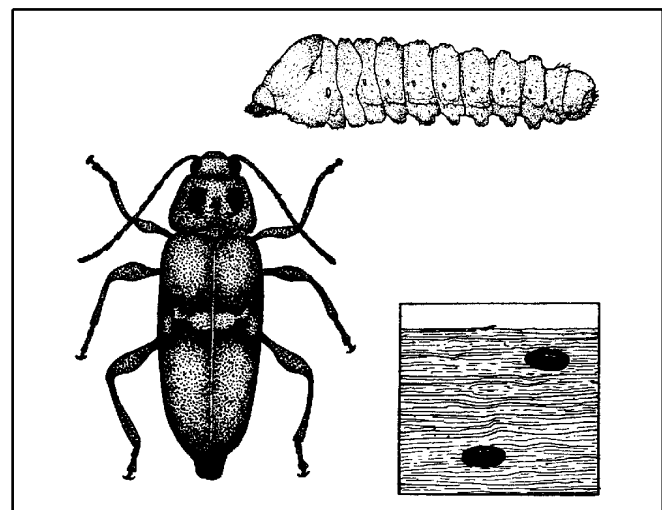


Figure 8. Old house borer (Cerambycidae). Credits: University of Florida

Signs of Infestation

The key to avoiding serious problems with old house borers is early detection and control. Usually, homeowners see the damage rather than the beetles. The larval damage occurs entirely below the surface of the wood where larvae eat tunnels. However, their frass occupies more space than the volume of wood that is consumed. Therefore, they fill the tunnels in the wood completely causing a blistering or rippled effect. The frass is a fine, powder-like dust that is found loosely packed in tunnels and in small piles outside of the hole. The frass is extremely fine and feels like talc but usually has small pellets of frass mixed with it. Adult emergence holes are oval and 1/4 to 3/8 inch in diameter.

Control of Anobiid, Bostrichid, and Lyctid Powderpost Beetles and Old House Borers

There are several options for control of powderpost beetles and old house borers. Selecting the best option depends on a number of factors, such as the severity of infestation, the location of infestation, potential for reinfestation, and cost of treatment. Powderpost beetles and old house borers damage wood slowly so there is plenty of time to make a decision on control options.

- **Prevention.** Most beetle problems are introduced into homes in lumber or finished wood products (i.e., furniture, paneling, or flooring). Most serious infestations occur when infested wood is installed in the house. Inspect wood to insure that wood is not infested at the time of home construction.
- **Wood finishes.** Powderpost beetles only lay eggs on bare, unfinished wood. Beetles will not infest wood that is painted, varnished, waxed, or similarly sealed. Beetles emerging from painted or varnished wood were either in the wood before finishing or were a result of reinfestation by eggs that were laid in emergence holes of adult beetles. Sealing holes prevents reinfestation from eggs laid within the hole.
- **Wood replacement.** Infested wood can be replaced if the infestation appears to be localized. For instance, if emergence holes appear in a

member of a door or window frame, the piece can be removed and replaced with a new, uninfested wood.

- **Surface treatment.** Insecticides are labeled for surface treatment of bare, exposed wood. Spraying or brushing insecticides onto infested wood creates a barrier that kills adult beetles as they chew their way out of wood. The barrier also kills newly-hatched larvae as they attempt to bore into wood. For the surface treatments to work properly, they must penetrate the wood. Therefore, the wood should be unfinished or sanded to remove the finish. In certain situations, the surface treatment can penetrate the wood sufficiently to kill larvae within the wood to prevent the further marring of the surface by additional emergence holes of adults. Insecticide labels for wood surface treatment are listed in Table 2. Because most unfinished wood is in either voids or attics, products registered for treatment of wood in attics and voids are listed in Table 3.
- **Fumigation.** Fumigation is considered the most effective method of controlling wood-boring beetles. However, fumigation can be the most costly method of control and does not provide residual protection of the wood. Only pest control operators certified to apply fumigants can do fumigation work. Fumigation of infested furniture or small articles like picture frames and baskets can be done without fumigating the entire structure. Some pest control operators will fumigate infested furniture inside fumigation chambers at their business so that the entire building does not need to be tented and fumigated. Products registered for fumigation are listed in Table 4.

Carpenter Bees

Carpenter bees (Figure 9) are 3/4 to 1 inch long and closely resemble bumble bees except that their abdomen is a shiny metallic greenish-black; whereas, the abdomen of bumble bees is very hairy. These insects sometimes build their nests in solid wood such as weather boarding, railings, supports, and trim of buildings. Their nests are in the form of tunnels 3 to 6

inches deep in the wood. The entrance hole is about 1/2 inch in diameter. The holes are very clean and appear as though they were made by a drill. Damage to wood is seldom extensive.



Figure 9. Adult carpenter bee, *Xylocopa* sp. Credits: Paul M. Choate, University of Florida

Control

Carpenter bees can be controlled by removing and replacing infested wood. Painting, staining, or filling holes with putty does not usually prevent the bees from digging a new tunnel.

Insecticides can be used to treat areas of wood where carpenter bees are active. Table 2 lists products that can be used to treat wood for carpenter bee management.

Table 1. Classification of families of beetles which attack wood.

	Living wood	Diseased and/or dying trees and also logs	Dry, seasoned wood
True powderpost beetles (Lyctidae)			X
Deathwatch beetles (Anobiidae)		X	X
False powderpost beetles (Bostrichidae)	X	X	X
Round-headed borers (Cerambycidae)	X	X	X
Weevils (several families, Curculionidae included)	X	X	X
Flat-headed borers (Buprestidae)	X	X	
Ambrosia beetles (Platypodidae & Scolytidae)	X	X	
Bark & engraver beetles (scolytidae)		X	

Table 2. Products labeled for wood treatment to manage wood boring beetles or carpenter bees.*

Common Name	Homeowner Products*	Commercial Products*
Beta-Cyfluthrin	Bayer Power Force Carpenter Ant & Termite Killer Plus	
Bifenthrin	Ortho Termite & Carpenter Ant Killer	Talstar Termiticide/Insecticide
Cyfluthrin	Bayer Advanced Home, Home Pest Control Indoor & Outdoor Insect Killer	PT Cy-Kick Crack & Crevice Pressurized Residual PT Cy-Kick CS Controlled Release Cyfluthrin Tempo 20 WP Tempo SC Ultra
Cypermethrin		Prevail FT Termiticide Prevail TC Termiticide/Insecticide
Deltamethrin		Suspend SC Insecticide
Disodium Octaborate Tetrahydrate		Bora-Care Jecta Tim-Bor
Fenvalerate		Tribute Termiticide/Insecticide Concentrate
Imidacloprid		Premise 0.5 SC Premise 2 Premise 75
Lambda Cyhalothrin		PT 221L
* Read label carefully to insure pest, site, and commodity are listed prior to applying product. Some product labels are very restrictive.		

Table 3. Products labeled for treatment of wood in voids and attics to manage wood boring beetles or carpenter bees.*

Common Name	Homeowner Products*	Commercial Products*
Cyfluthrin		Tempo 20 WP Tempo SC Ultra
Disodium Octaborate Tetrahydrate		Bora-Care Tim-Bor
Imidacloprid		Premise 0.5 SC Premise 2 Premise 75
Pyrethrins		PT Tri-Die Silica & Pyrethrum Dust
* Read label carefully to insure pest, site, and commodity are listed prior to applying product. Some product labels are very restrictive.		

Table 4. Products labeled for fumigation treatment to manage wood boring beetles or carpenter bees.*

Common Name	Homeowner Products*	Commercial Products*
Sulfuryl Fluoride		Vikane
* Read label carefully to insure pest, site, and commodity are listed prior to applying product. Some product labels are very restrictive.		