

Henrico County Master Gardeners Course

Urban Insect Identification

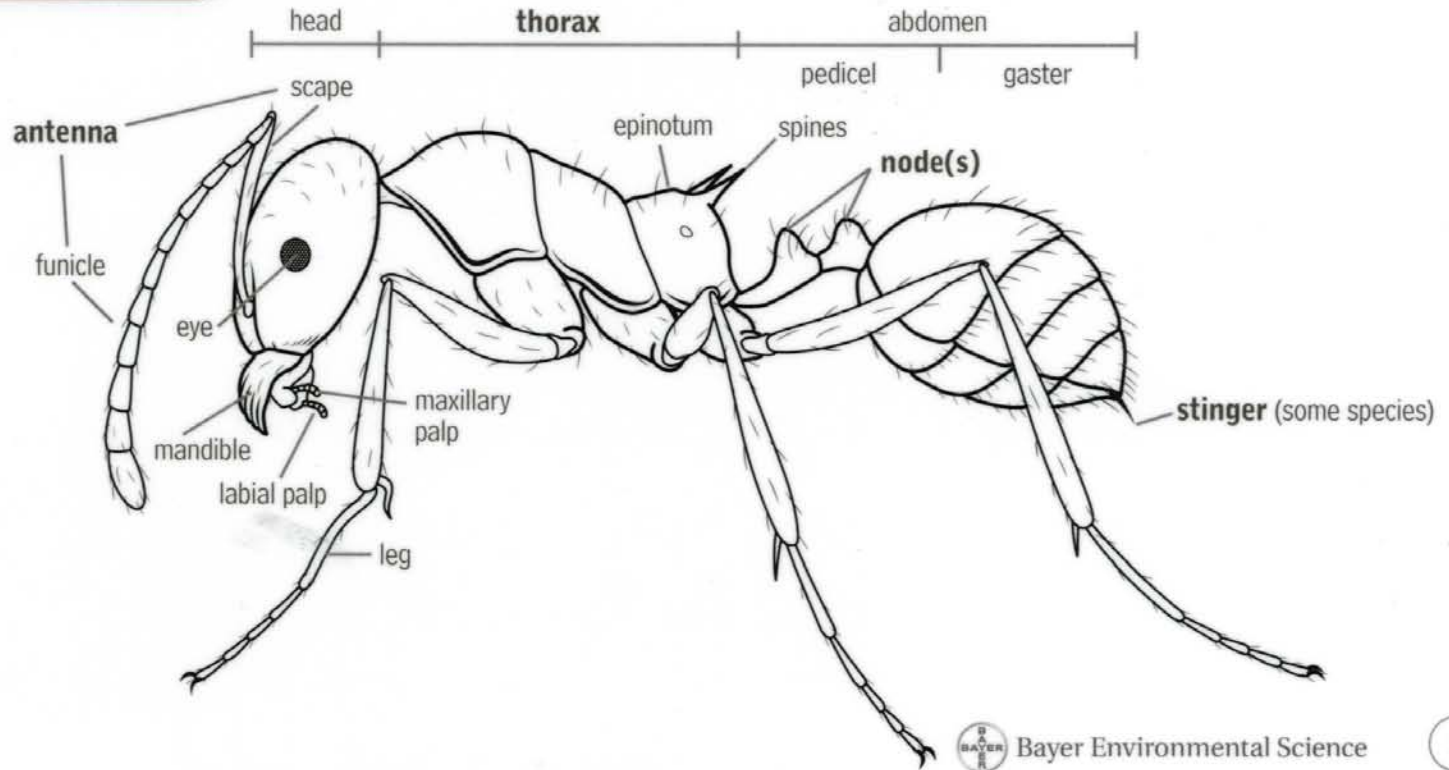
&

Biology



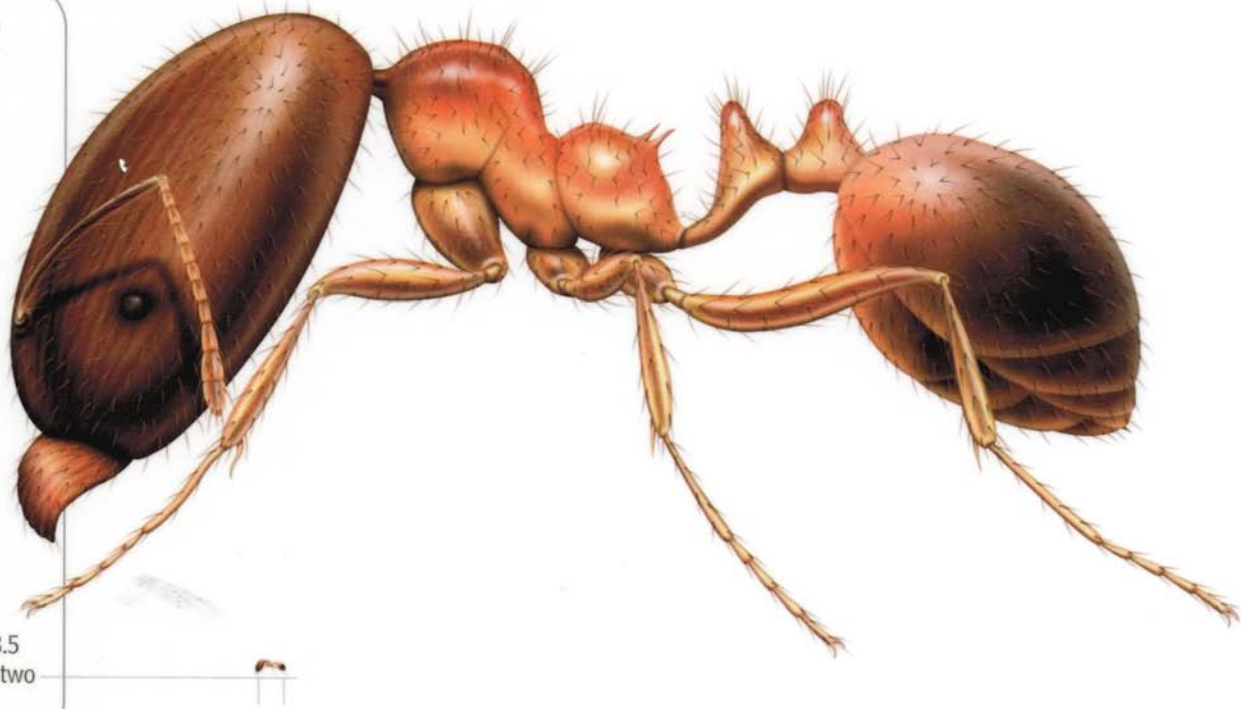
Ants

Basic Anatomy of the Ant



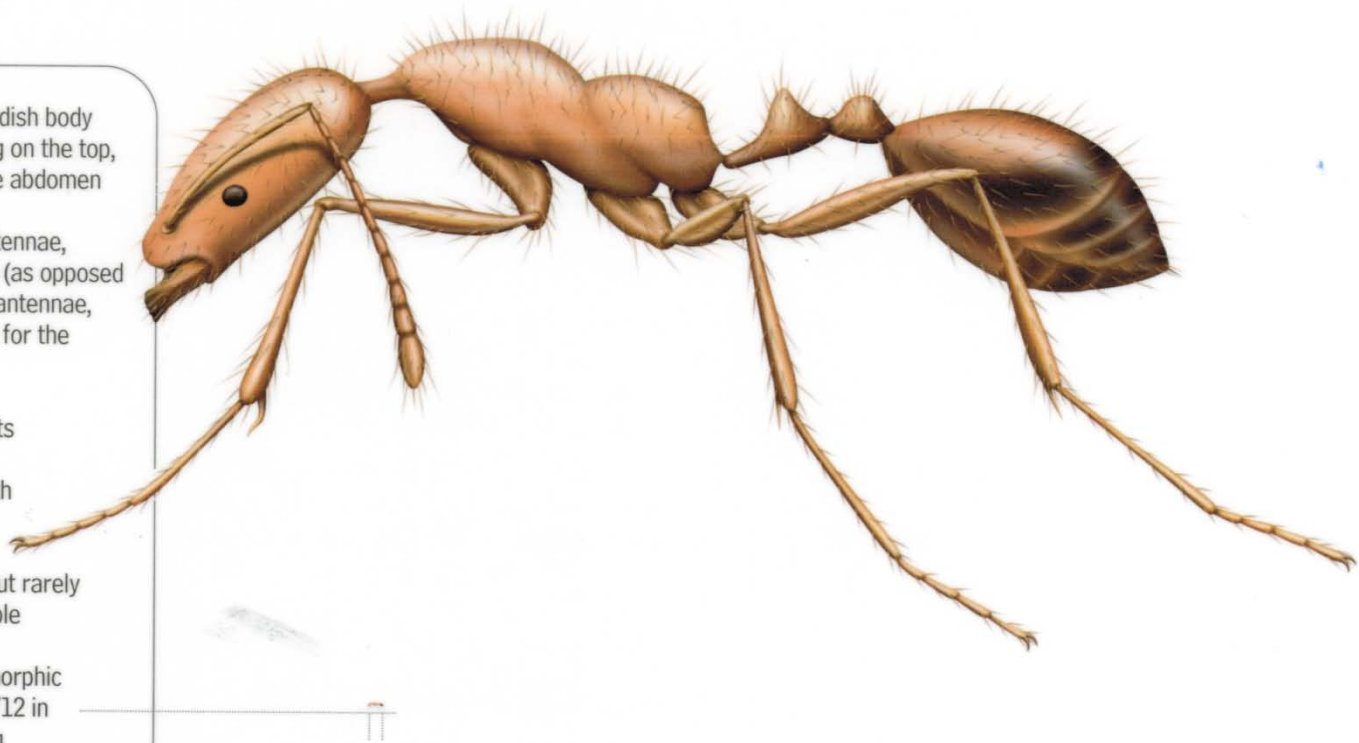
Big Headed Ant

- Major workers' heads very large in proportion to body
- Light brown to dark reddish brown
- Two node segments
- Uneven thorax
- 12-segmented antennae; 3-segmented club
- One pair of spines on thorax
- Front half of head is sculptured; back is half-smooth and shiny
- Several species make sounds when alarmed or when food is found
- Workers $\frac{1}{16}$ – $\frac{1}{8}$ in (2–3.5 mm) long; all species have two different-sized workers

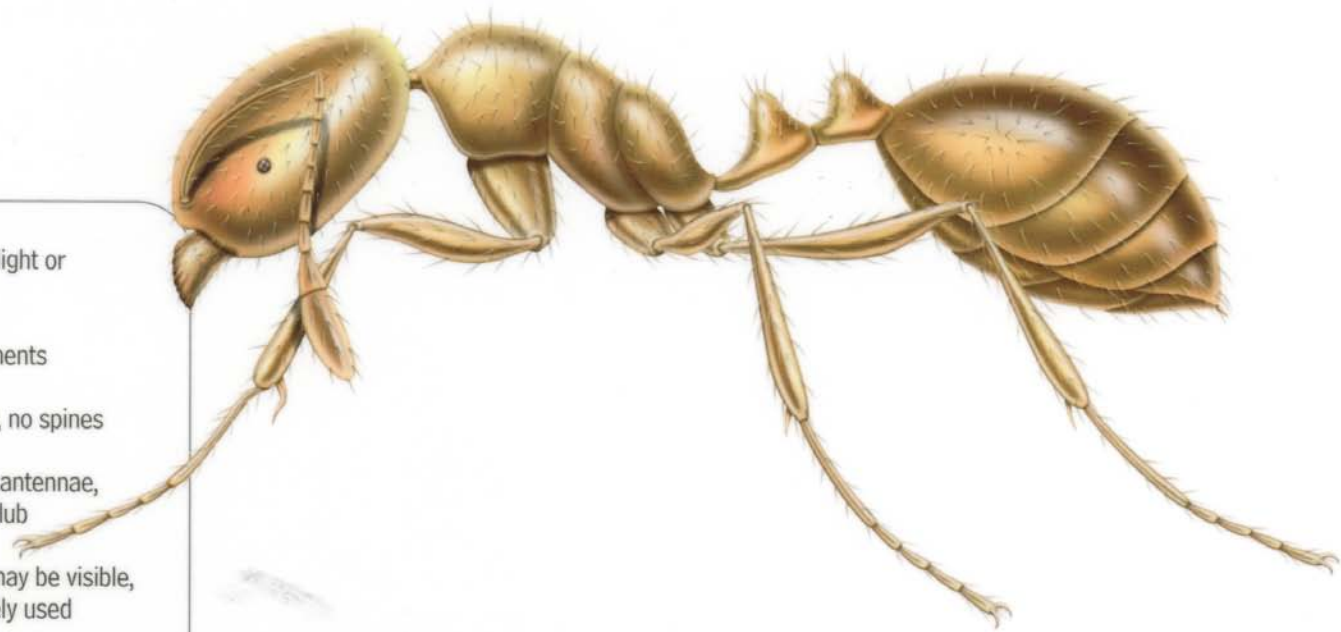


Pharaoh Ant

- Pale yellow to reddish body with black shading on the top, rear portion of the abdomen
- 12-segmented antennae, 3-segmented club (as opposed to 10-segmented antennae, 2-segmented club for the thief ant)
- Two node segments
- Uneven thorax with no spines
- Stinger present, but rarely extended and visible
- Very small monomorphic workers, 1/16–1/12 in (2.0–2.1 mm) long



Thief Ant

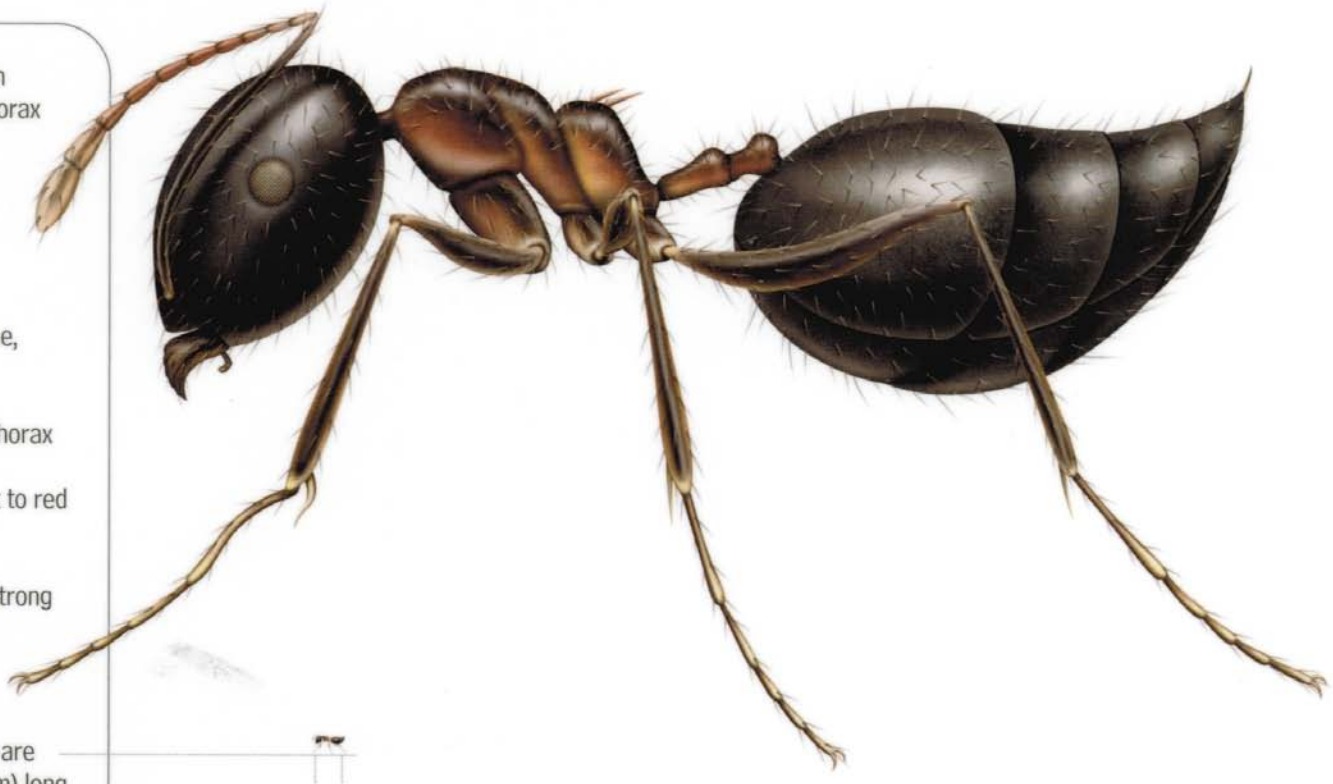


- Pale yellow to light or dark brown
- Two node segments
- Uneven thorax, no spines
- 10-segmented antennae, 2-segmented club
- Small stinger may be visible, rarely effectively used
- Very small monomorphic workers, 1/16 in (2 mm) long



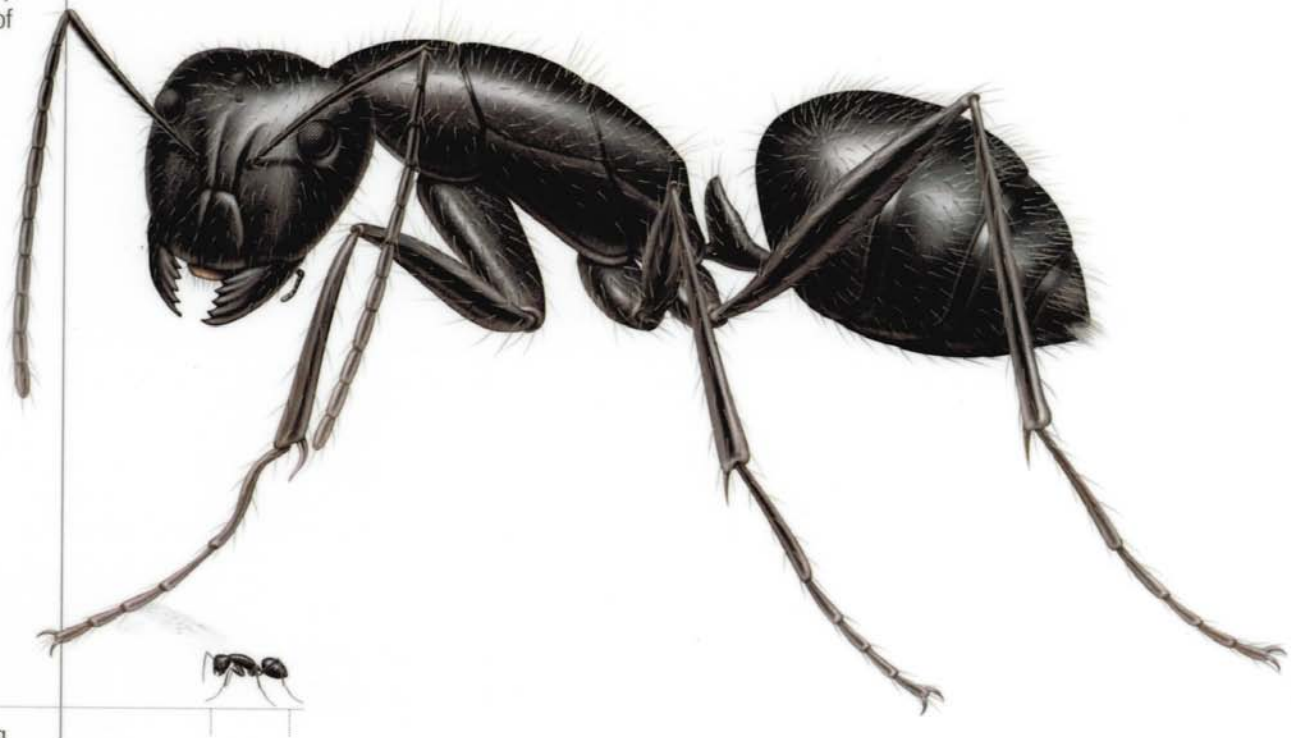
Acrobat Ant

- Heart-shaped abdomen often bends up over thorax when disturbed
- Two node segments
- Uneven thorax
- 11-segmented antennae, 3-segmented club
- One pair of spines on thorax
- Color varies from black to red and black
- Quick to bite; emits a strong odor when disturbed
- Stinger present
- Monomorphic workers are one size, 1/8 in (3.5 mm) long



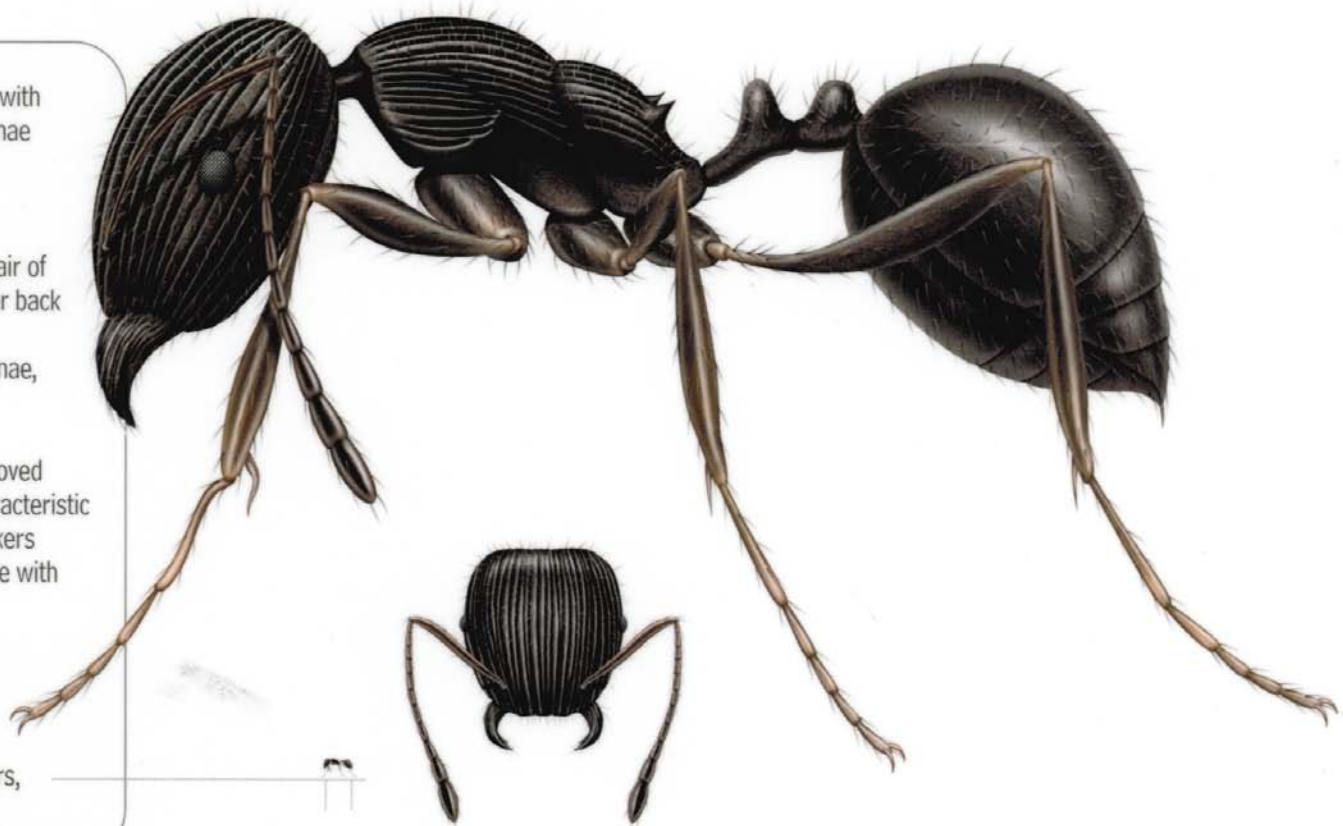
Carpenter Ant

- Black (other *Camponotus* species may be dark brown, dark red or a combination of these colors)
- One node segment
- Spineless thorax, profile evenly rounded on upper side
- Circular ring of hairs at end of abdomen (visible with hand lens)
- Top of gaster covered with long, pale yellow or white hairs
- 12-segmented antennae, no club
- No stinger
- Polymorphic workers, 1/4–1/2 in (7–13 mm) long



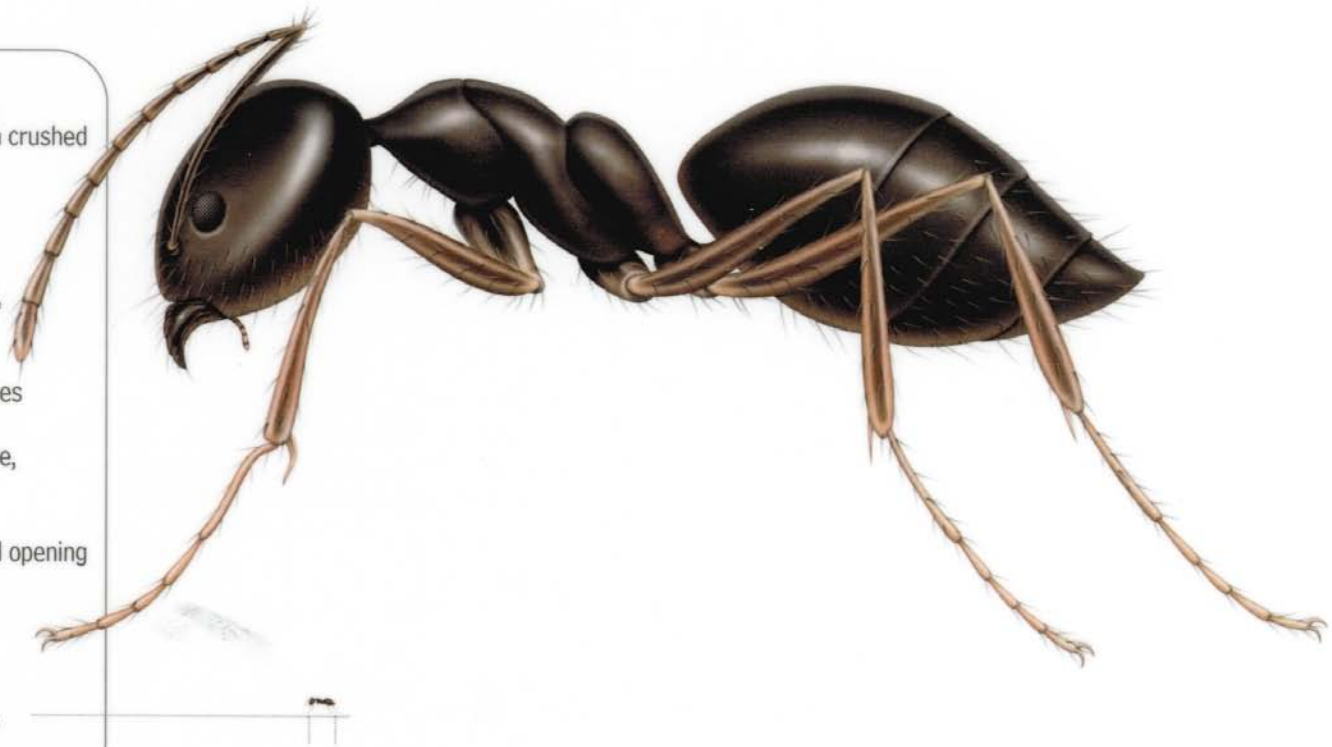
Pavement Ant

- Light brown to black with paler legs and antennae
- Two node segments
- Uneven thorax has pair of small spines on upper back
- 12-segmented antennae, 3-segmented club
- Head and thorax grooved or sculpted with characteristic parallel lines on workers and swarmers (visible with hand lens)
- Stinger present, but rarely used
- Monomorphic workers, 1/8 in (3.5 mm) long



Odorous House Ant

- Workers emit a rotten, coconut-like odor when crushed
- Uniform brown to black color
- One flat node segment, hidden by abdomen
- Uneven thorax; no spines
- 12-segmented antennae, no club
- Gaster has slit-like anal opening with no circle of hair
- No stinger
- Monomorphic workers, 1/8 in (3.5 mm) long



Effective Ant Control

- **Identify species**
 - **Follow trails to find nests if possible**
 - **Determine if nesting inside or foraging from outside**
 - **Non-repellent treatment**
 - **Outside perimeter and inside crack & crevice**
 - **Baits**
 - **Repellents**
 - **Sanitation**
 - **Seal cracks and crevices**
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Comparison of Swarmers

Flying Ant



Termite Swarmer



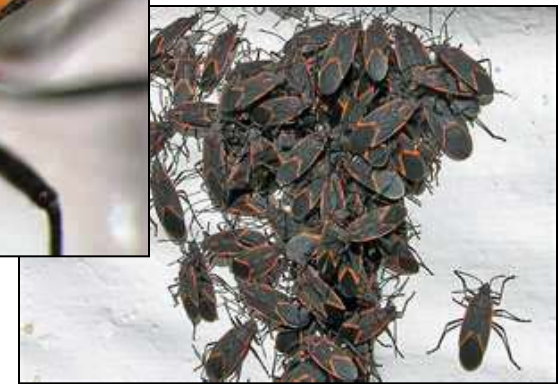
Seasonal Pests

Boxelder Bug



Biology and Behavior

- Nest in Boxelder tree
- Piercing – sucking mouthparts used to draw nutrients from variety of herbs and woody plants
- Swarm in large numbers from wintering sites



Brown Marmorated Stink Bug

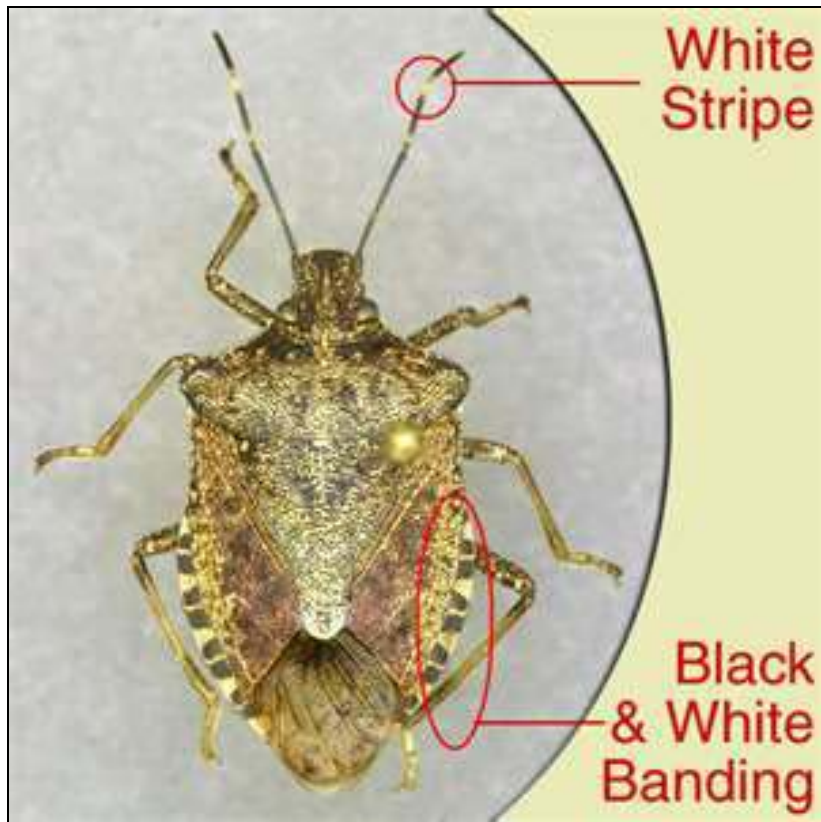


History

- Thought to have arrived in the US in 1998, in eastern Penn.
- Originates from Asia
- Is a serious agricultural pest; attacking fruit and vegetables



Description



- About 1 inch long
- Typically a “shield shape”
- Lighter bands on the antennae distinguishes them from other stink bugs
- Get their name from glands located on the dorsal of the abdomen
- Eyes are a deep red color

Clovermites



Clover Mite Description



- **Tiny, smaller than head of pin**
- **Reddish brown color**
- **Lives in grasses, weeds, and shrubs**
- **Invades buildings in large numbers from November to May or June**

Earwigs



Earwig Facts

- Folklore that earwigs crawl into ears of sleeping persons
- Pronounced cerci (pinchers) on abdomen
- Like moist dark conditions



Cockroaches

German Cockroach



German Cockroach Description

- **About 5/8 in in length**
- **Brown with two longitudinal streaks on pronotum**
- **Very prolific**
- **Carries egg cases until ready to hatch**
- **Can grow from egg to adult in 36 days**



Oriental Cockroach



Description



- **Adult about 1 in in length**
- **Dark reddish brown in color**
- **Egg capsule may contain 16 eggs**
- **Not as prolific as German roach**

Brown Banded Cockroach

- **Similar in appearance to German cockroach except lacks two dark stripes on prothorax**
- **Wings twice banded with brownish-yellow stripes**
- **Egg capsule smaller than German cockroach**
- **Often called furniture roach-prefers high warm areas**



American Cockroach




- **Largest house infesting roach at 1.5 in long**
- **Reddish brown in color**
- **Commonly found in sewers and basements**
- **Glues egg capsule to surfaces with up to 16 eggs in case**

Pennsylvania Wood Roach

- Male roach can fly, but female does not
- Approx. $\frac{3}{4}$ " to 1" in length
- Female and male differ so much once considered different species.
- Nest under tree bark, but can be accidentally brought in on firewood.
- Can be an issue in spring and early summer



Cockroach Control

- **Determine species**
 - **Inspection**
 - **Sanitation**
 - **Crack and crevice treatment with appropriate insecticides**
 - **Baits (fipronil)**
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Pantry & Kitchen Pest

Indian Meal Moth



- Most active at dusk
- Female moth deposits 100 to 400 eggs in 1 – 18 day period
- Upon hatching, larvae establishes itself in crevice of food material
- Feeds inside case made of frass and silk for 13 to 288 days, depending on temperature and food

Control of Indian Meal Moths

- Inspect chocolates, dried pet food, dried fruits, bird seed, dried flowers, nuts, seeds, powdered milk, graham crackers, wheat flour, and cornmeal.
- Inspect light fixtures which can attract adults
- Discard infested material
- Crack and crevice insecticide application



Drain Fly or Moth Fly

- Maggots often breed in sewage and drain lines
- Host for myriad of different bacteria and diseases
- Control best achieved with good sanitation and clean free flowing drainage



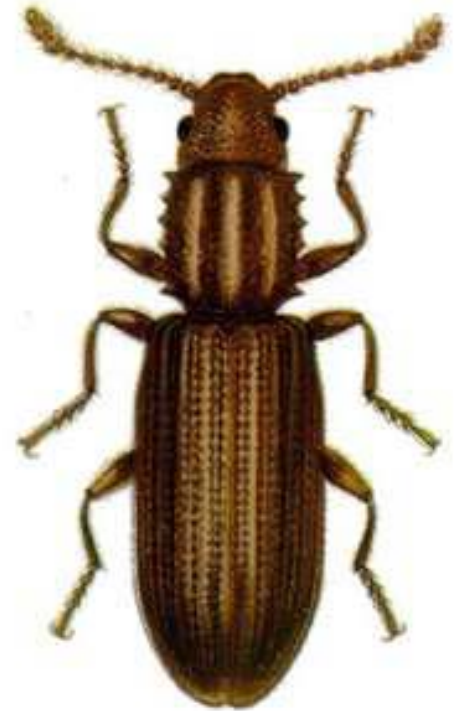
Fruit Fly



- **Adult 1/8 in long**
- **Red eyes, tan body**
- **Breed in decaying organic material**
- **Control by finding and removing breeding site**

Saw-tooth Grain Beetle

- Only 1/10" in length
- Gets it's name from the saw tooth margins on the thorax
- This scavenger beetle thrives in almost all varieties of food and breeds rapidly in warm conditions
- Control through discarding infest product. Crack and crevice application of pesticide in storage areas once emptied.



Biting and Stinging Pests

Bald Faced Hornets

- Around 700 workers when nest mature
- Feed on variety insects, including flies
- Aggressive, will chase if disturbed
- If nest is out of reach and poses little threat, we would recommend leaving it alone.



Yellow Jack Wasp

- Typically ground nesting in this area
- These wasps prey on other insects and will scavenge for human food.
- Nest sizes are smaller than aerial nesting; about 200-350 in size.
- Homeowners “find” these nests usually when cutting the grass. The vibration excites the wasps to defend the nest.



Mosquito



- 2700 different species
- Complete life cycle takes about 1 month
- Lays eggs in standing water
- Eggs hatch into larvae within a week
- Larvae breathe through tubes which poke above surface
- Adults live a few weeks

Worldwide Killer




- Carrier of diseases, such as malaria, yellow fever, dengue fever, dog heartworm, West Nile Virus, and many others
- Straw-like proboscis and can only eat liquids
- Eliminate breeding sites by removing standing water

Black Widow Spider




Black Widow Spider

- Adult female is usually jet-black above with two reddish triangular markings forming an “hourglass” on underside of abdomen
 - Mature female about $\frac{1}{2}$ inch in length
 - Males about $\frac{1}{4}$ inch in length
 - Present in every state of U.S.
 - Frequently found in boxcars, ship holds, and trucks
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Brown Recluse Spider



Brown Recluse Facts

- Recluse spiders have 6 eyes arranged in pairs
 - Yellowish to light tan to dark brown with violin shaped marking on carapace
 - Outside, lives piles of debris, utility boxes, wood piles, vehicles, and under stones
 - Found inside in closets, attics, crawlspaces, basements, and cracks and crevices
 - Nasty bite with ulcerous wound
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Brown Recluse Bite Symptoms



- Rarely any pain when bitten.
- Bite site becomes reddened.
- Painful ulceration develops.
- Skin and muscle tissue dies, leaving a deep, infected wound that enlarges, fails to heal or heals quite slowly.

Tick

- Before feeding 1/8 to 3/16 in. long
- Increases in size to about 1/2 in. in length while feeding
- Spread rocky mountain spotted fever
- Egg- larvae- pupae – adult in 4 months to more than year




Fleas



- About 1/6 in. in length
- Laterally flattened
- Usually carried into home by pets
- Once inside, populations build up quickly
- Complete metamorphosis

Flea Control

- Eggs laid on host soon dislodge and fall off
 - Egg – larvae – pupae – adult
 - Larvae molt into pre-adult pupae stage and can remain in that stage for up to 5 months
 - When signaled, pupae emerge as adults
 - Vacuum thoroughly, treat pets, treat inside, treat outside
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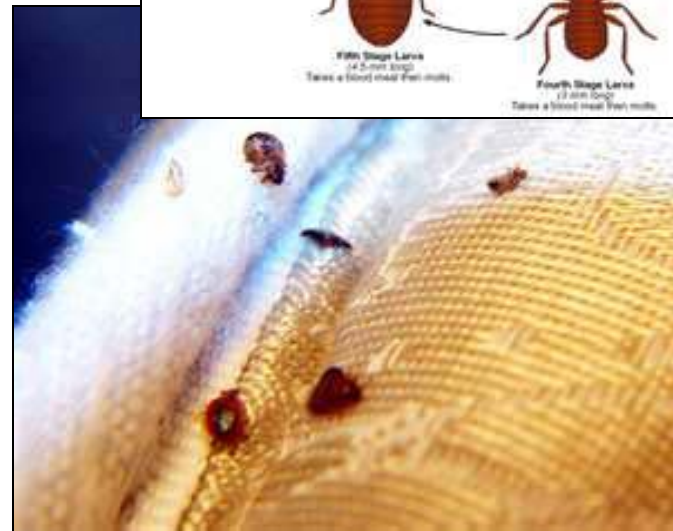
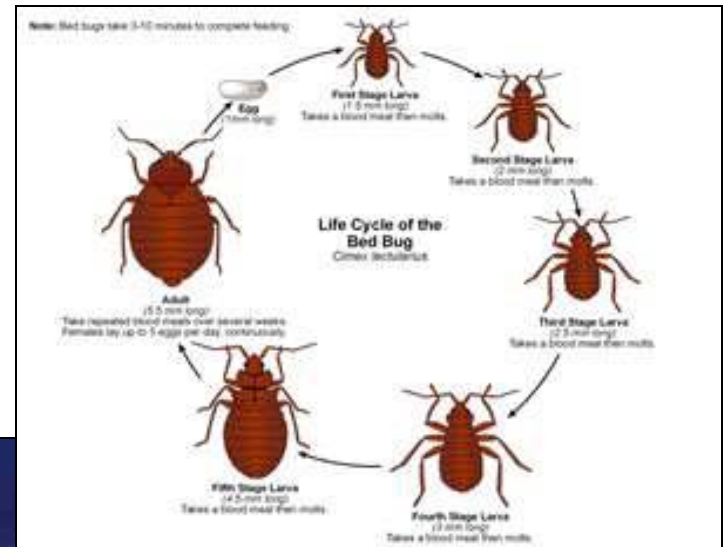
Bed Bugs

- Family Cimicidae
- *Cimex lectularius* also bite bats, birds, and rodents
- Oval, wingless about 1/5 in. long
- Rusty red or mahogany




Bed Bugs

- Life cycle requires 5 weeks to 4 months, depending on temperature
- Nymphs and adults feed at night and hide in crevices during day
- Hide in seams in mattresses and box springs, bed frames, under loose wallpaper, behind picture frames, and inside furniture



Bed Bug Control

- Sanitation: Eliminate bats and birds, clean furnishings, launder bedding
 - Chemical control includes use of residual insecticide in cracks and crevices.
 - Very thorough inspection and treatment usually required by a professional
 - Non chemical control should not be overlooked either. Cryonite, steam, heat, and even vacuuming.
 - Mattress encasements are a must.
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THANK YOU VERY MUCH!

