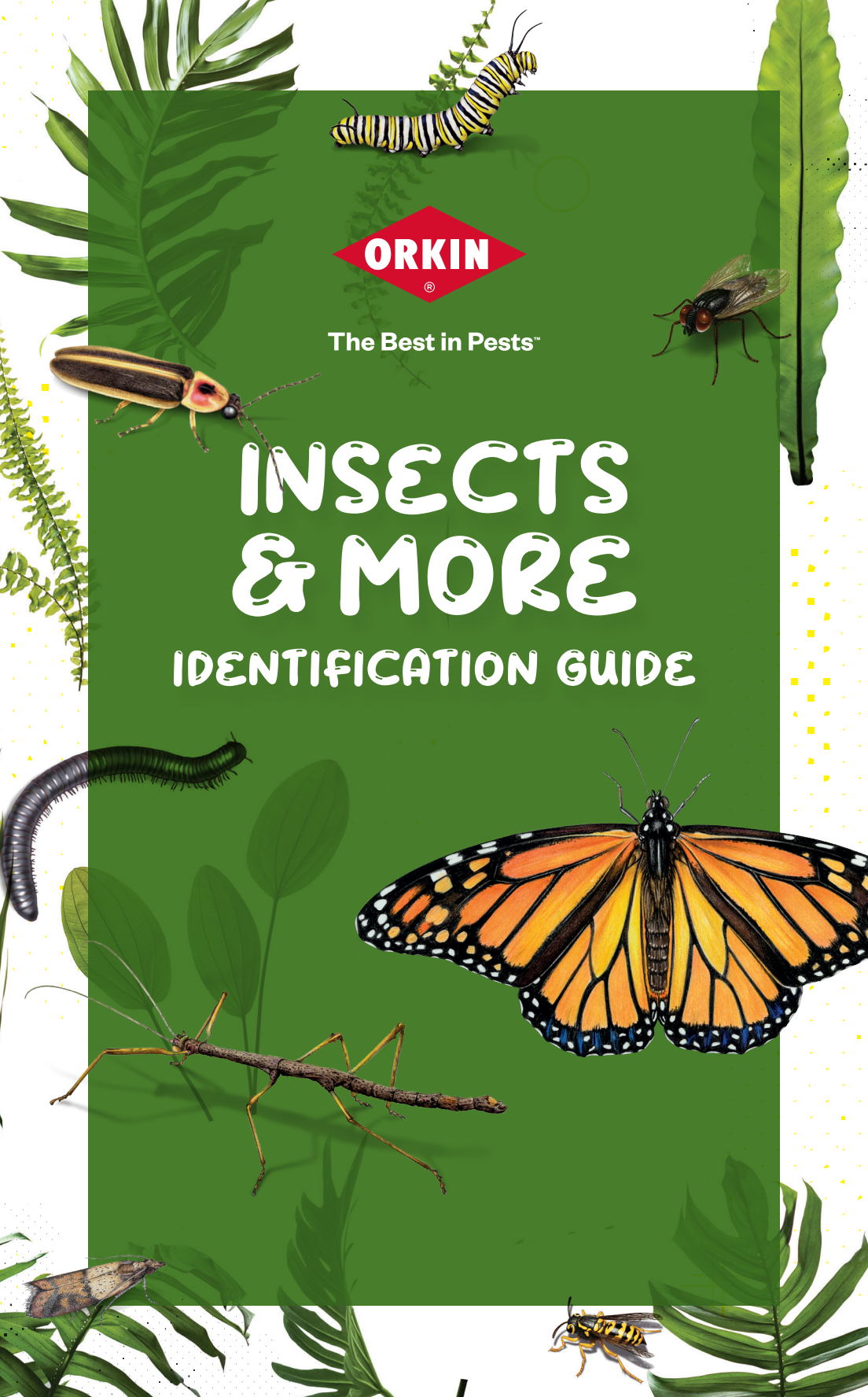


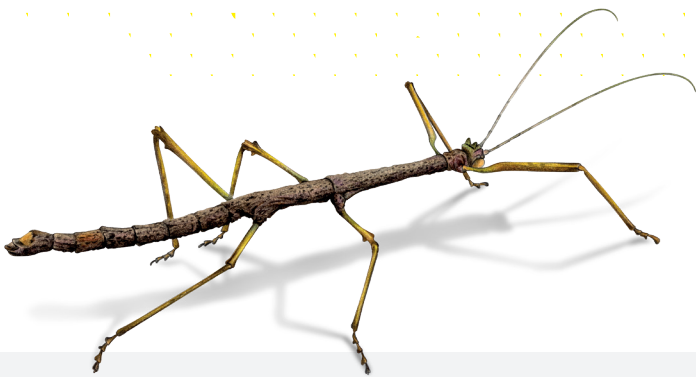


The Best in Pests™

# INSECTS & MORE

## IDENTIFICATION GUIDE







**THIS BOOK BELONGS TO:**

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**N**ature is full of fascinating feats. Some creatures can lift more than 50 times their body weight, taste with their feet or even hear with their legs. While that might sound bizarre to us, it's not unusual in the spectacular world of insects – the small but mighty millions that play a vital role on our planet. A key link in the food chain, insects feed fish, birds and other animals. They also pollinate crops, aid in decomposition, produce food like honey, materials like silk and even medicine.

Industrious insects are also contributing to the future. They're the subject of research on topics ranging from heredity to pollution in studies all over the world. Exploration of the genetics of some insects is leading to better understanding of processes that take place inside the human body.

Whether you are a beginner bug buff or an aspiring entomologist, the identification of insects and other animals can be tricky, with more than 1 million identified species in the world that come in all shapes, sizes and colors. That's why we created this handy guide filled with swarms of interesting facts about bugs (and other creatures!).

Grab your magnifying glass and browse the profiles to become a natural at identifying the natural world.



# Lady Bug



You're not dead on your luck; lady bugs only play dead when they see a predator.

**APPEARANCE:** Up to 3/8 inch long; round body; bright red or yellow, with black, red, white or yellow spots.

**HABITS:** Found in meadows, fields, gardens and forests.

**DIET:** Feed primarily on other small insects.

**REPRODUCTION:** Females may lay up to 500 eggs in clusters during a lifetime. These clusters of bright, yellow eggs are attached to foliage near food supply.



# House fly



It's a bird, it's a plane – it's a housefly?  
House flies can fly up to 5 miles per hour, beating their wings 200 times per second.



**APPEARANCE:** About 1/4 inch long; light gray with four vertical stripes on thorax (chest); large reddish compound eyes.

**HABITS:** May migrate up to 20 miles, but most stay within two miles of birthplace.

**DIET:** Wide variety of food, including human food, animal food, carcasses and garbage.

**REPRODUCTION:** Eggs are laid one at a time in clusters of 75 to 150; eggs hatch in 10 to 24 hours; females may lay more than 500 eggs in a lifetime; entire life cycle is less than seven days.





# Pyralis Firefly



Females do not fly and tend to stick closer to ground vegetation. You glow girl.

**APPEARANCE:** 1/2 inch long; blackish-brown with dull edges on sides and down the middle; the top of the head is rosy pink with dull yellow edges and a black spot in the center.

**HABITS:** Nocturnal; live in moist places under debris, bark or decaying matter on the ground; on summer nights, blink their yellow lights to attract mates.

**DIET:** Adults usually feed on smaller fireflies or nothing at all; larvae feed on insect larvae, slugs and snails.

**REPRODUCTION:** Eggs are left on damp soil; larvae overwinter, then pupate in moist soil.



# Honey Bee



Table for 80,000? Members of honey bee hives mix food with saliva to form chemical bonds to make honey.

**APPEARANCE:** Up to 5/8 inch long; reddish-brown and black with paler, orange-yellow rings on abdomen; two pairs of wings.

**HABITS:** Very social; live in hollow trees and in hives kept by beekeepers; pollinate crops and produce honey.

**DIET:** Drink nectar and eat pollen; larvae eat honey and royal jelly.

**REPRODUCTION:** Queens lay eggs in intervals, producing colonies of 60,000 to 80,000 members; life span is usually two to three years for the queen; male bees (also known as drones) die after mating.



# Wasp



All stings considered, wasps are very protective pests. Unlike bees, wasps can sting predators multiple times.

**APPEARANCE:** 1/2 to 3/4 inch long; variety of shapes and colors; can be distinguished from bees by their smooth, rather than hairy, bodies.

**HABITS:** Exhibit predatory and scavenging behavior; some species are solitary, while others live in colonies with thousands of other wasps.

**DIET:** Primarily protein, including spiders, soft-bodied insects and small animals.

**REPRODUCTION:** Social wasps begin a nest with one queen laying all eggs for the colony; if a queen dies, a worker can take over egg-laying functions until the colony produces a new queen.



# Mosquito



Although the females love blood, humans are not their first choice. They usually prefer blood from horses, cattle and birds.



**APPEARANCE:** 1/8 to 1/4 inch long; brown to dark brown with light stripe down center; wings have dark brown scales.

**HABITS:** Often found near shallow, temporary pools of water; larvae live in quiet bodies of water, ranging from fluid-filled leaves to stagnant ponds and lakes.

**DIET:** Males drink plant juices; females feed on the blood of mammals, including humans.

**REPRODUCTION:** Eggs are dropped in temporary pools of water; larvae feed, pupate and emerge over two-week period.

# Violet-Tailed Dragonfly



Now streaming: dragonflies often fly tied together over streams and ponds.

**APPEARANCE:** About 1¼ inches long; males have violet abdomen and black head and thorax; females are dark brown to black; clear wings.

**HABITS:** Found along slow streams, shallow weedy lakes or coves of large rivers; rest on grasses and plant stems.

**DIET:** Feed on small, soft-bodied insects.

**REPRODUCTION:** Females lay eggs in or near water, often on plants. Some species go under the water to lay eggs on different surfaces; when eggs are deposited, males lift females from water.



# Termite



Termites are the ultimate recyclers, converting dead wood to humus (the organic layer of the soil).



**APPEARANCE:** Four "castes" of a termite colony, including 1) **Worker:** approximately 1/4 inch long, light colored, wingless; 2) **Soldier:** elongated head with large mouths; 3) **Supplementary reproductives:** light-colored and wingless or with very short, non-functional wings; 4) **Primary reproductives:** darker than other termites and winged; caste most often seen by homeowners.

**HABITS:** Live in colonies underground; able to reach food above ground level by building mud tubes.

**DIET:** Feed on wood and other cellulose material.

**REPRODUCTION:** Growth from egg to adult depends on individual species; one queen per colony, who can lay tens of thousands of eggs in her lifetime; most eggs are laid by supplementary reproductives in an established colony.



# American Cockroach



American cockroaches are one of the few species that bite. So, make sure these roaches bite the dust before biting you.



**APPEARANCE:** About 1½ inches long (the largest of the common cockroach species); reddish-brown wings with light markings on thorax.

**HABITS:** Very aggressive; prefer warm, damp areas; more likely to be seen in daytime and outdoors than other species; fly more readily than other species.

**DIET:** Scavengers that feed on a variety of foods; prefer decaying, organic matter.

**REPRODUCTION:** Females need to mate only once to produce an egg case; each egg case contains an average of 13 eggs; nymphs molt 13 times over 600 days before reaching maturity.



# German Cockroach



Talk about a family reunion: one female German cockroach can produce more than 300,000 cockroaches in a single year.

**APPEARANCE:** Up to 1½ inches long; dark brown.

**HABITS:** Prefer outdoors; populations are relatively immobile compared to other cockroach species.

**DIET:** Scavengers that normally feed on plant material but can feed on a variety of foods.

**REPRODUCTION:** Females reach maturity in approximately 320 days and produce an average of seven egg capsules; egg capsules hatch in 24 to 70 days; each contains an average of 20 eggs; adults can live up to 200 days.



# Carpenter Ant



Southeast Asian carpenter ants can cause their own bodies to rupture – then spray their predators with the resulting toxic substance. Not pleas-ant.

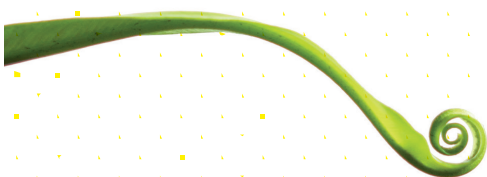


**APPEARANCE:** 1/4 to 3/8 inches long (among the largest of ants); black coloring is most common, but some have reddish or yellowish coloration.

**HABITS:** Normally nest in dead or water-damaged portions of standing trees, stumps or logs, or burrow under fallen logs or stones; may move into buildings in search of food; foraging ants will travel up to 100 yards from their nest to look for food.

**DIET:** Feed on a variety of both plant and animal food; prefer sweets and meats; also feed on other insects.

**REPRODUCTION:** Queens lay 15 to 20 eggs the first year of mating and up to 30 eggs the second year; eggs complete their life cycle in about 60 days.



# Fire Ant



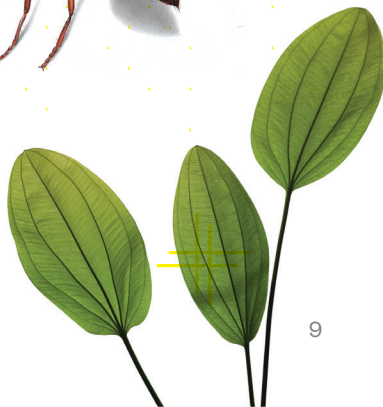
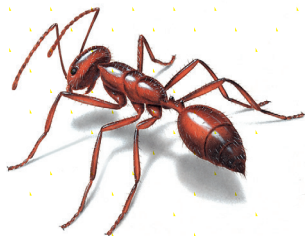
Lose the floaties: fire ants can band together to create a living raft in overly wet conditions.

**APPEARANCE:** About 1/4 inch long; reddish in color.

**HABITS:** Nest in mounds approximately one to two feet in diameter and about 1½ feet high; large colonies can have up to 250,000 workers; very active and aggressive; will sting any intruding animal repeatedly.

**DIET:** Omnivorous; known to eat meats and greasy, sweet materials.

**REPRODUCTION:** Eggs complete their life cycles in about 30 days; workers live up to 180 days; queens live two to six years.





# Flour Beetle



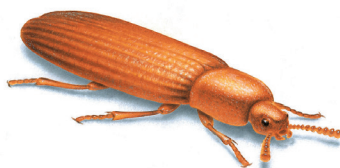
Flour beetles release a foul odor and taste when found in flour – an ingredient you don't want in your homemade chocolate cookies.

**APPEARANCE:** Flattened, oblong and reddish-brown; about 1/7 inch long; larvae are 1/4 inch long and are white to yellow.

**HABITS:** Nest in grain products; small size enables them to work themselves into many sealed containers.

**DIET:** Feed on a variety of foods but most commonly flour and cereal products.

**REPRODUCTION:** Females lay an average of 300 to 400 eggs; life cycle usually takes about seven weeks but may last up to three months.



# Carpet Beetle



Ahchoo! Carpet beetles have hair tufts that can be irritating if breathed into the nose or lungs.



**APPEARANCE:** Small, rounded, gray to blackish, with a varied pattern of whitish and orange scales on the back; shape resembles the lady bug; about 1/5 inch long.

**HABITS:** Adults often inhabit flowerbeds; can enter the home when cut flowers are brought in.

**DIET:** Inside feed on keratin-based foods; eat a variety of dead animal materials, fur, hides, feathers, silks and woolen items.

**REPRODUCTION:** Females lay 30 to 100 eggs, which hatch in 10 to 18 days; larval stage lasts 60-325 days; on average, adults live between 20 to 60 days but can live up to 200 days.



# Caterpillar



Caterpillars have just one job – to eat. Some consume more than 27,000 times their body weight. That's one heck of an eating contest.

**APPEARANCE:** Up to 2 ¾ inches long; come in a wide variety of colors.

**HABITS:** Found primarily in meadows, roadsides and sandy areas where milkweeds grow.

**DIET:** Feed on leaves and flower buds; some caterpillars feed on seeds and nuts.

**REPRODUCTION:** Caterpillars are the babies of moths and butterflies, so they don't reproduce. However, after they mature into their winged adult forms, they're free to mate and lay eggs that hatch into more caterpillars.



# Monarch Butterfly



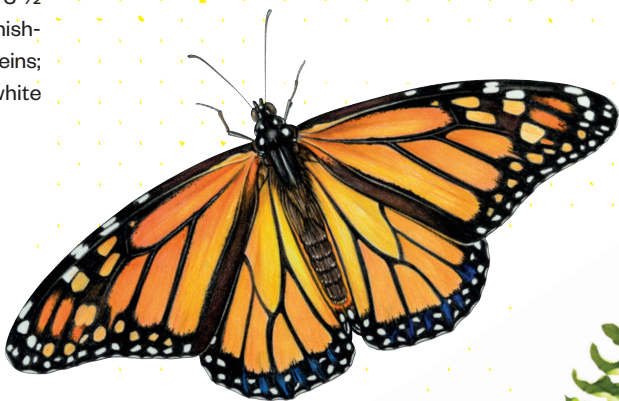
Make way for the king and queen! Monarch butterflies migrate up to 2,000 miles each autumn, often stopping in the same rest spots each year.

**APPEARANCE:** Wingspan 3 ½ to 4 inches long; wings brownish-orange; black to dark brown veins; two rows of orange and/or white spots.

**HABITS:** Found primarily in meadows, roadsides and sandy areas where milkweeds grow.

**DIET:** Feed on flowers.

**REPRODUCTION:** Females lay eggs along migration northward; fully grown caterpillars change to barrel-shaped, leaf-green pupa with gold dots; process from egg to butterfly takes about four weeks.



# Cricket



Don't let their sweet chirping fool you; crickets can bite when threatened.

**APPEARANCE:** 3/4 to 1 inch long, light yellowish-brown, with three darker brown bands on the head.

**HABITS:** Nocturnal; live outdoors, but may be found indoors in warm areas, particularly the kitchen, basement, fireplace or in cracks; make a distinctive chirping sound.

**DIET:** Eat or drink almost anything available, especially crumbs and food scraps.

**REPRODUCTION:** Eggs deposited singly in crevices and behind baseboards; 40 to 170 eggs laid at one stage; egg stage lasts eight to 12 weeks.



# Grasshopper



Need more protein in your diet? Grasshoppers are a delicacy in many countries and are an excellent source of protein.



**APPEARANCE:** 3/8 to 1 inch long; greenish-yellow to dark greenish-brown with yellow midline stripe; forewings blackish-yellow.

**HABITS:** Found primarily in tall grass and open sandy woods.

**DIET:** Various species of plants.

**REPRODUCTION:** Females thrust a mass of about 25 eggs one inch or more into the soil; nymphs emerge in about a week, and they hatch when it rains.



# Booklice



Booklice aren't limited to books. They also enjoy the occasional plant-based snack, like cereals and grains.

**APPEARANCE:** 1/25 to 1/12 inch long; colorless to gray or light brown.

**HABITS:** Prefer to live in damp, warm areas; can be found outdoors in grass or leaves and in areas where mold grows.

**DIET:** Microscopic mold and starchy materials such as paste and glues of book bindings and wallpaper.

**REPRODUCTION:** Females produce between 120 to 456 offspring; adults live between 24 to 110 days.



# Indian Meal Moth



Talk about living life to the fullest: Indian meal moths live only one or two weeks.



**APPEARANCE:** Larvae are 1/2 inch long with dirty white color; adults have wingspread of 5/8 inch; wings are pale gray with outer portion of forewing reddish-brown.

**HABITS:** Adults fly mainly at night.

**DIET:** Larvae feed on all kinds of grains, flours and dried fruit.

**REPRODUCTION:** Females lay between 200 to 400 eggs in spring; complete life cycle ranges from four to six weeks.

# Centipede



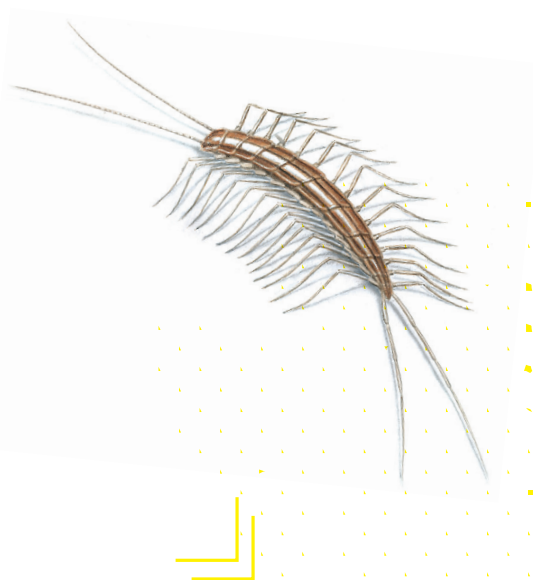
Centipedes' large teeth can bite humans. Their venomous bite is seldom worse than a bee sting.

**APPEARANCE:** 1 to 1 ½ inches long; various colors; flattened, with one pair of legs on most of their body segments.

**HABITS:** Usually live outdoors beneath damp accumulations of leaves, stones and boards; occasionally find their way into homes, where they hide in moist basements, damp closets and bathrooms.

**DIET:** Soft-bodied insects, spiders, worms and other arthropods.

**REPRODUCTION:** Some species live as long as five to six years.



# Millipede



What's in a name? Millipedes don't actually have 1,000 legs. They come in just under with 750.



**APPEARANCE:** 1 to 1 ½ inches long; brownish; segmented with one pair of legs per body segment.

**HABITS:** Nocturnal; normally live outdoors under objects located on damp soil.

**DIET:** Damp and decaying wood and plant matter.

**REPRODUCTION:** Eggs are deposited in the soil; most species reach maturity in the second year and live several years after that.



# Brown Recluse Spider



Who you calling four-eyes? While most spiders have eight eyes, brown recluses have six.



**APPEARANCE:** 1/2 to 5/8 inch long; yellowish to brown, with a dark brown violin-shaped dorsal marking.

**HABITS:** Can be found outside under rocks, leaves, debris, bark, woodpiles and utility boxes; found inside in storage areas such as closets, attics and bedrooms.

**DIET:** Cockroaches, crickets and other soft-bodied insects.

**REPRODUCTION:** Mating occurs from February to October; 40 to 50 eggs are deposited in off-white, round silken cases; lifetime averages from one to two years.



# Daddy Longlegs



Break a leg! Daddy longlegs cannot regrow lost limbs, but they are capable of full mobility with just six or seven original limbs.

**APPEARANCE:** 1/8 to 1/2 inch long; yellowish to greenish-brown or reddish-brown; four pairs of long, thin legs.

**HABITS:** Found on foliage and tree trunks or on shady walls outside of buildings.

**DIET:** Small insects and decaying organic matter; plant juices.

**REPRODUCTION:** Females deposit eggs into soil individually; eggs overwinter and hatch in the spring; females produce one generation a year.



# Black Widow Spider



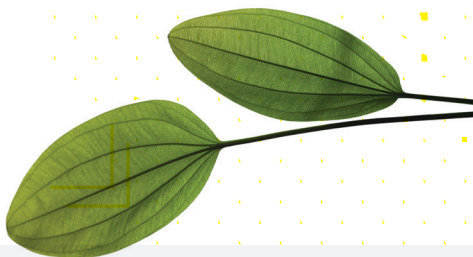
Chew on this: black widows are not aggressive and will not bite unless provoked.

**APPEARANCE:** 1/2 inch long; shiny black with hourglass-shaped red mark on underside of abdomen.

**HABITS:** Can be found almost anywhere, indoors or out; prefer to build their nests close to the ground.

**DIET:** Trapped insects in the female's web.

**REPRODUCTION:** Contrary to popular belief, females are usually unsuccessful in any attempt to eat males after mating; 300 to 400 eggs are laid in silken cocoon and hatch in about 10 days.



# Pillbug/ Sowbug



Pillbugs are actually crustaceans, and they are more closely related to crayfish than insects. Think of them as pillfish.



**APPEARANCE:** 3/4 inch long; thorax composed of seven hard overlapping plates with seven pairs of legs; only pillbugs are able to roll up into a ball.

**HABITS:** Prefer moist locations; found under objects on damp ground; mostly nocturnal; sometimes found in basements and ground levels of structures.

**DIET:** Decaying vegetable matter.

**REPRODUCTION:** Females give birth to between 24 and 28 young; usually one to three generations a year; may live as long as two years.

# Earwig



Don't wig them out; many species secrete a foul-smelling, yellowish-brown liquid when threatened.



**APPEARANCE:** 5/8 inch long, dark reddish-brown, with yellow-brown legs; large forceps (cerci) on the end of the abdomen, which pose no threat to humans.

**HABITS:** Found all over homes, particularly in cracks and crevices near or on the ground; active primarily at night.

**DIET:** Scavengers; will eat just about anything.

**REPRODUCTION:** Up to 60 eggs are laid in burrows in the ground and guarded by females; eggs hatch in the spring.



# Silverfish



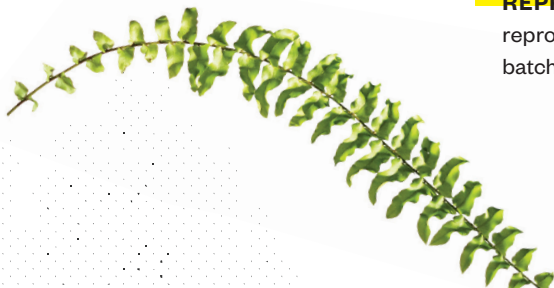
Silverfish may be one of the most primitive insects, crawling around for more than 400 million years (that pre-dates dinosaurs by more than 100 million years!).

**APPEARANCE:** 1/4 to 1/2 inch long; gray or silver-colored; three filaments extend from rear; somewhat "carrot-shaped" from an above view.

**HABITS:** Nocturnal; move swiftly and can jump; found where there is excessive humidity; attracted to books, wallpaper and other paper products that have a high starch content.

**DIET:** Prefer starch, paste, glue; paper products of all kinds; starched textiles.

**REPRODUCTION:** Two to three month reproductive cycle; lay about 50 eggs per batch; live 2 to 2½ years.



# Tick



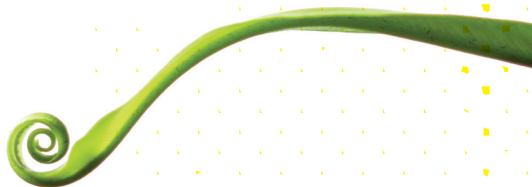
Adult ticks can live over 500 days without a meal – a diet we don't recommend.

**APPEARANCE:** 1/8 to 1/2 inch long; grayish-white, brown, black, reddish-brown or yellowish; appearance differs by species, but all adults are very small, roundish, with eight legs (larvae or seed ticks have six legs).

**HABITS:** Live on the bodies of mammals, birds and reptiles.

**DIET:** Blood; all species can swell to a considerable size after feeding.

**REPRODUCTION:** Mating usually occurs while adult ticks are on the host animal; female hard ticks feed only once and lay one large batch of up to 10,000 eggs.



# Flea



Got ups? Fleas can jump 7 inches vertically, making it the second-highest hopper (relative to body size) of all animals.

**APPEARANCE:** 1/12 to 1/16 inch long; black to brownish-black; six legs, with many bristles on body and legs; flattened body.

**HABITS:** Found on cats and dogs year-round but most common during warm and humid weather; readily attack and feed on humans; can jump as much as 7/8 inch vertically and 14 to 16 inches horizontally.

**DIET:** Blood.

**REPRODUCTION:** Females can lay about 25 eggs a day and up to 800 eggs during her lifetime; complete metamorphosis in 14 to 90 days.



# Bed Bug



Bed bugs have wings, but they can't fly.

**APPEARANCE:** Flat, reddish-brown, oval insects about 3/16 inch long or the size of an apple seed. Swollen and reddish after a blood meal.

**HABITS:** Cracks and crevices including mattress seams, sheets and furniture; behind baseboards, electrical outlet plates and picture frames. Often found in hotels, where they can travel from room to room and in visitors' luggage.

**DIET:** Blood.

**REPRODUCTION:** Females can deposit one to five eggs a day and may lay 200 to 500 eggs in a lifetime.



# Scorpion



Being nocturnal, scorpions have bad eyesight. They navigate using their pincers as feelers.

**APPEARANCE:** 1 to 1 ½ inches long; eight legs, a pair of large pincers and a pair of small pincers near the mouth; tail possesses a stinger.

**HABITS:** Most active at night; during the day, they hide under bark, logs or stones; in houses, they hide in closets, shoes and folded clothes.

**DIET:** Small spiders and soft-bodied insects; will eat other scorpions.

**REPRODUCTION:** Females produce an average of 32 babies; young reach maturity in three to four years.

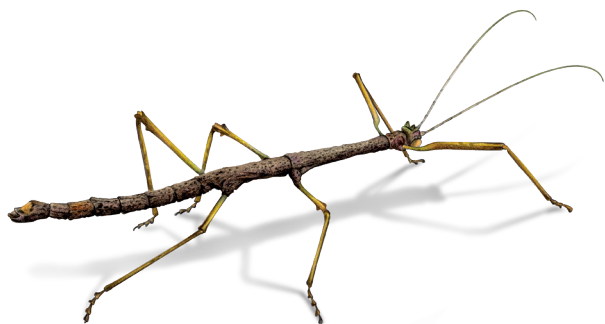




# Walking Stick



Stick it to the man: walking sticks have the ability to regenerate lost legs after a predator grabs hold.



**APPEARANCE:** 7/8 to 5 inches long; almost cylindrical body; nymphs are green, becoming a twig-like brown at maturity.

**HABITS:** Grasslands, woods, forests.

**DIET:** Feed on the foliage of grasses and woody plants, especially grapevines, hazelnuts and oaks.

**REPRODUCTION:** Females lay eggs individually; eggs overwinter and hatch in the spring.



# Weevil



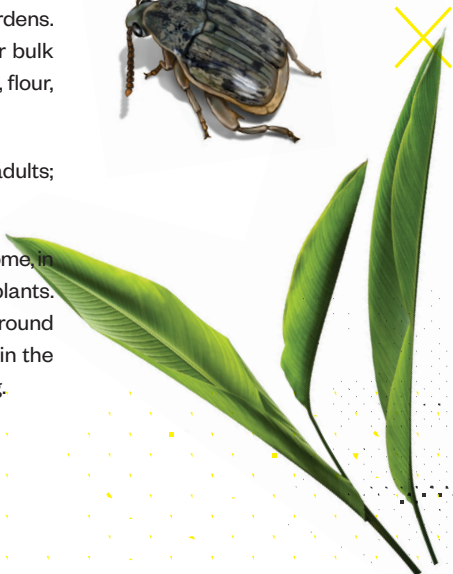
There are more than 60,000 species of weevils in the world.

**APPEARANCE:** Dark-colored (brownish to black) with slender or oval-shaped bodies; 1/4 inch long.

**HABITS:** Found outside in fields, orchards or gardens. Can be found indoors inside packaged foods or bulk products; can infest grains and starches like rice, flour, pasta and cereals.

**DIET:** Feed on plants in the larval stage and as adults; very destructive to crops.

**REPRODUCTION:** Depends on the species. For some, in spring, females lay eggs on the ground near host plants. When the eggs hatch, the larvae burrow into the ground and feed on the roots. Larvae spend the winter in the ground and emerge as adults the following spring.



# Norway Rat



These expert swimmers can hold their breath underwater for up to three minutes. Challenge accepted, Michael Phelps.



**APPEARANCE:** Approximately 15 inches long; shaggy, grayish brown hair; tails are shorter than their bodies, making them distinguishable from roof rats.

**HABITS:** Live in family units, which are comprised of a dominant male, a breeding female and up to 12 juveniles.

**DIET:** These omnivores feed on virtually any food they can scavenge.

**REPRODUCTION:** Live only one year as an adult. Females can have three to 12 litters per year with as many as 12 pups per litter.



# House Mouse



Mice may scurry – especially if they're in a hurry. House mice can run more than eight miles per hour.

**APPEARANCE:** 5 to 8 inches long; light brown or gray to black short hair; moderately large ears and tails the length of their bodies and heads combined.

**HABITS:** Forage for food and nest supplies within a 10- to 30-foot radius of their nests.

**DIET:** They eat everything they can get their hands on but tend to favor foods that provide a nutritional diet.

**REPRODUCTION:** Breed all year long; females can produce 40 to 60 offspring in a single year.





Notes:

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**O**ur planet depends on the vast diversity of these hissing, flying, crawling, jumping and buzzing creatures we sometimes call “bugs.” From ladybugs and grasshoppers to silverfish and earwigs, each contributes to the ecosystem in their own way. These tiny titans thrive in habitats all over the world – including in your backyard.

Now you know more about nature’s biggest population and have some buzzworthy facts about the roles insects play on the planet.

We still have a lot to learn about the creatures we know exist and the ones yet to be found, and Orkin’s entomological experts are always expanding their knowledge of a bug’s-eye-view. We hope this guide has opened your eyes to the miniature world that has a massive impact!

**For more information on insects and more, visit  
[orkin.com](https://www.orkin.com)**



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