

Illinois Department of Public Health

Prevention & Control

Occasional Invaders

Occasional invaders are insects and other arthropods that sporadically enter structures, sometimes in large numbers. If you've been invaded by pests that are not covered in our other fact sheets, chances are you'll find the information here.

By far the most common problem with occasional invaders is that they become an annoying nuisance. Some can bite, pinch, secrete foul odors, damage plants, stain indoor furnishings, and damage fabrics. Even after they are dead, the problem may continue. The bodies of dead insects can attract other pests that feed on them, and the bodies, shed skins, secretions and feces of insects can cause allergic responses and trigger asthma.

Whether they're insects, mites or arthropods, occasional invaders typically live and reproduce outdoors. They invade structures when conditions indoors are better for them than outdoor conditions. It is important to know the conditions that prompt invasions of unwanted pests. Altering environmental conditions can make structures inhospitable for pests, and is an important component of integrated pest management.

COMMON OCCASIONAL INVADERS

Listed below are some of our most common occasional invaders. Others such as ants, spiders, rats and mice are not included here, but are discussed in other Department fact sheets at: <http://www.idph.state.il.us/a-zlist.htm#pests> .

PILLBUGS and SOWBUGS (Isopoda)

Also known as isopods, woodlice and roly-polies, these creatures are not insects but crustaceans more closely related to shrimp, crabs and lobsters. Most Isopods are gray to brown in color and about one-fourth of an inch long with seven pairs of legs. **Pillbugs** can roll into a ball when disturbed.

Sowbugs have two tail-like appendages that form a tube to suck up water.

Like many occasional invaders, isopods need lots of moisture. They live in damp places – under rocks, logs, leaves and mulch where they feed mostly on rotting plant matter. Moisture-seeking pillbugs and sowbugs



Pillbug

invade structures but do no damage indoors. To prevent infestation, seal cracks in the structure's foundation, install door brushes to fill gaps beneath doors, and correct moisture problems. As much as is practical, reduce moisture and vegetation around the foundation.

MILLIPEDES (Diplopoda) and CENTIPEDES (Chilopoda)



While millipedes don't have a *thousand* legs as the name suggests, they do have two pairs of legs per body segment -- distinguishing them from centipedes which have one pair per segment. Both creatures typically have 30 or more pairs of legs, are light brown to black in color, and about an inch long.

Millipede

Most **millipedes** are cylindrical, slow-moving plant-feeding creatures that can curl up and release foul-smelling secretions when disturbed. **Centipedes** have flattened bodies and typically move faster. One species, the **house centipede** (*Scutigera coleoptrata*), is an exceptionally long-legged and fast-running predator of insects and spiders. Centipedes also possess appendages capable of injecting venom into their prey, like the fangs of spiders. While most centipedes are too small to penetrate human skin, the house centipede, as well as larger desert and tropical species (*Scolopendra* spp.), can inflict wounds similar to bee stings.

Both millipedes and centipedes live in damp places; under rocks, logs, leaves and mulch. When conditions aren't suitable in the wooded areas where they are abundant, millipedes sometimes embark on mass migrations and enter homes in large numbers. They enter in search of moisture, food and shelter, but like sowbugs and pillbugs, they often die indoors because moisture and food sources are insufficient. In contrast, the house centipede can live and reproduce in moist basements, cellars, crawlspaces and bathrooms where spider and insect prey are plentiful.



House Centipede

Exclude these multi-legged pests by inspecting and sealing foundation cracks. For centipedes, it can be beneficial to control the spiders and insects they feed on. Moisture control indoors and around the foundation is also important in controlling occasional invaders.

CLOVER MITES (Bryobia spp.)



This tiny mite sometimes enters homes and other buildings by the thousands, causing panic among residents. They do not bite or cause health-related problems, but can be a nuisance.

Clover Mite

Clover mites are smaller than a pin head. They can be red, green or brown in color and leave a red stain when smashed. The front pair of legs is much longer than the other three pairs of legs. Larval (first immature stage) mites have three pairs of legs.

Clover mites will feed on grasses, weeds, fruit trees and other plants. Newly landscaped and well-fertilized lawns are conducive to large clover mite populations, presumably due to the lack of predator species and/or an abundance of food.

The mites are most active in cooler weather (less than 75 F). In spring, eggs are sometimes laid in cracks and crevices in foundations and around siding, window and door frames. In fall, they enter structures to lay more eggs, to molt (shed the exoskeleton), and for shelter. They spend the winter in protected spaces such as the voids in block, brick, walls and window frames, and emerge from these in late winter or early spring.

Prevent clover mites from entering by sealing cracks and gaps in foundations, walls, window and door framing. Reduce vegetation around the foundation, and limit fertilizer use. Once indoors, clover mites are best eliminated by vacuuming them, though sticky traps (insect monitors) and contact pesticides such as those containing pyrethrum or pyrethrins also can be used. Timely foundation perimeter treatments with residual pesticides can help control invasions.

SPRINGTAILS (Collembola)



Springtails

If you suddenly discover tiny, grayish-white bugs in your home that jump when approached, chances are you have springtails. Growing to little more than one-eighth of an inch long, these primitive insects can easily pass through foundation cracks and gaps. And like so many other invaders, moisture -- or the lack of it -- triggers springtail invasions.

These primitive insects can be amazingly abundant in soil and other moist substrates; tens of thousands can be present per cubic foot. Their diet includes algae, bacteria, fungi and decaying plant matter. When soil around foundations becomes saturated with water, springtails may flood through foundation cracks and into basements and crawlspaces. This may occur even in winter when melting snow floods the soil. They also can enter along pipes and drains, and in potted plants brought indoors. They can climb foundation walls and are attracted to lights.

Although springtails may enter homes in large numbers, they usually die indoors, lacking sufficient moisture, humidity and food for survival. Remove them with a vacuum cleaner. Sealing foundation cracks and gaps, correcting moisture problems, and not over-watering plants will help prevent springtail invasions.

EARWIGS (Dermaptera)



Earwig

Earwigs are brown, flat-bodied insects, up to three-fourths of an inch long. On their tail ends are pincerlike appendages used for capturing prey, for defense and mating. Earwigs can bite and pinch people who handle them, but are otherwise harmless. Their ability to bore through the ears to lay eggs inside a person's brain is a popular myth.

Earwigs are most active at night and are attracted to lights. They rest in moist cracks and crevices by day, coming out at night to feed on a wide variety of items including mold, fungi, algae, plants, insects, spiders, fruits, vegetables, meats and garbage.

Earwigs abandon drought-stricken ground to enter structures in search of moisture. To avoid invasions, reduce outdoor lighting as well as moisture and vegetation around the foundation. Foundation perimeter treatments with residual insecticides and/or baits labeled for earwig control can help reduce earwig populations.

CRICKETS (Gryllidae)



House Cricket (male above female)

The chirping cricket is music to some ears (especially those of female crickets), but annoying to others. Crickets hide in cracks and voids in the ground, around foundations, in woodpiles, under rocks and debris, becoming active at night to chirp (males only) and to feed on a variety of foods including plants, fruits and vegetables, and other crickets.

Commonly found indoors, the **house cricket** (*Acheta domesticus*) is tan in color and up to an inch long. Capable of living and reproducing indoors, house crickets are often found in

the warmest parts of the house. They will consume human and pet foods, are attracted to fermenting liquids (vinegar, beer, etc.), are common around trash dumps, and occasionally do incidental damage to fabrics. They are attracted to lights at night.



Field Cricket

Field crickets (*Gryllus* spp.) are larger than house crickets (up to 1 ¼ inches) and are black. They do not reproduce indoors and are most often encountered around foundations, in sheds, garages and gardens. They will damage garden plants, crops and fabrics.

Most house and field cricket home invasions occur in fall

when the insects' food resources dry up and temperatures drop.

Seal foundation cracks and gaps, and install door brushes to prevent crickets from entering gaps beneath doors. Other controls include reducing vegetation, leaves and mulch adjacent around the structure and, in early fall, treating foundation perimeters with residual pesticide liquids and/or cricket baits.

A different sort of cricket is the **cave or camel cricket** (*Ceuthophilus* spp.), named for inhabiting caves and cave-like places such as damp basements and crawlspaces, and for its arched, humpbacked body. Unlike house and field crickets, cave crickets are brown, wingless, and do not chirp. These large, brown crickets have long antennae and spindly legs sometimes described as spiderlike.



Cave Cricket

Sticky traps can be used inside doors, especially in garages, to monitor and trap crickets. If needed, residual pesticide liquids, dusts or baits can be applied to crawlspaces, basements and garages. Moisture control is also important.

BOXELDER BUG (*Boisea trivittata*, also known as *Leptocoris trivittatus*)

Adult boxelder bugs are about one-half of an inch long, oval in shape, black in color with red-orange markings including three stripes behind the head. Nymphs (young) have red-orange bodies with black wing pads, and are often found with the adults. Boxelder bugs are found on trees, rocks, woodpiles and structures in autumn when the bugs aggregate before seeking shelter for the winter. Large numbers can be

seen taking sun on warm, exterior walls, and/or trying to enter structures beneath siding, around window frames, vents any other crack or gap in the structure. Bugs that get inside will spend the winter in wall voids, window frames, attics, basements and other protected spots. And while they may look menacing, boxelder bugs rarely bite. However, their feces can stain fabrics, walls and carpets, and smashed bugs emit a foul odor.

Long, warm autumns and mild winters give rise to large populations of boxelder bugs in spring. Warmed by the structure's heat, the bugs emerge sluggishly on warm days in late winter or early spring to seek their favorite food, juices from leaves, twigs and seeds of seed-bearing boxelder trees.



Boxelder Bugs (adults and nymphs)

While boxelder bugs sometimes feed on the seed pods and fruits of other types of plants and trees including other maples, occurrences of large numbers of the bugs are usually associated with boxelder trees. Eggs are laid on the bark and branches, beginning another generation. Cutting down boxelder trees may or may not prevent home infestations, as there may be others in the neighborhood.

When boxelder bugs congregate around structures in fall, they should be dispersed because the bugs release chemical scents that attract more boxelder bugs to the site. A water hose or pump

sprayer will work for this purpose, applying water, insecticidal soap, or pesticide. Sealing cracks and gaps in a structure's foundation and exterior walls can help keep the bugs out.



Elm Leaf Beetle

ELM LEAF BEETLE (*Pyrrhalta luteola*)

Larvae (immature, caterpillar-like stage) of the elm leaf beetle are one-half of an inch long and yellowish with a black stripe and spots. The adults are one-fourth of an inch long, oval-shaped, yellowish-green beetles. They have black stripes on their backs; one down the center and one along the outer edge of each wing cover.

Through the winter these stripes become indistinct when the beetles darken and the greenish color fades to black.

Like the boxelder bug, the life of an elm leaf beetle revolves around a tree. After feeding on elm leaves, the larvae move under the bark or to the base of the trees to pupate and transform into adult beetles.

While the larvae consume and “skeletonize” elm leaves, adults chew irregular holes in the leaves, and the combination can weaken trees. The beetles are also a nuisance when they invade homes, seeking shelter as temperatures drop in fall. Sealing cracks and gaps in the exterior of structures helps prevent entry. Timely insecticide application to foliage, bark and the base of elm trees can help reduce elm leaf beetle numbers.

GROUND BEETLES (Carabidae)

Structures with bright lights visible from outside at night are likely to attract six-legged visitors, and larger structures, such as commercial buildings that are often well-lit at night, are particularly susceptible to invasion by ground beetles. There are many species, but the ground beetles most commonly attracted in large numbers are dull to shiny black, about one-half of an inch long, and somewhat flat in shape.



Ground Beetle

These beetles are strong fliers that enter structures through open doors, windows and vents, gaps beneath doors and similar openings. By day they are found dead of exhaustion or resting among the surrounding ground cover, mulch, rock and debris, or in soil and pavement cracks. Foundation perimeter treatments with liquid residual pesticides can therefore be an effective control. But the best method is to reduce night lighting by shading or switching off lights visible from outdoors.

Larger ground beetles can bite, pinching the skin. Some release foul-smelling defensive secretions, and some species, known as bombardier beetles (*Brachinus* and others), release irritating chemicals that explode with a popping noise.

LADY BEETLES (Coccinellidae)

The group of insects known as lady beetles, ladybird beetles and ladybugs, includes several species that arrive at our homes in the fall, often in large numbers, intent on spending the winter with us.

There are several home-invading species; round or oval-shaped beetles, about one-fourth of an inch long, yellow to red in color with black spots. One native species that often enters homes is the **spotted**

lady beetle (*Coleomegilla fuscilabris*). It

is an oval, pinkish-red beetle, usually with 10 black spots. The **convergent lady beetle** (*Hippodamia convergens*) is commonly sold as a biological control agent for release in gardens, though often ineffective due to its habit of migrating from the release site. Adults are up to one-fourth of an inch long, yellow to orange in color with up to 13 black spots, and white lines that converge behind the head.



Spotted Lady Beetle

Besides being colorful and considered cute, lady beetles are beneficial because they consume large numbers of injurious plant pests including aphids, mealybugs and scale insects. The **Asian lady beetle** (*Harmonia axyridis*) was thought to be of such value as a predator that it was collected in Asia and introduced across the United States over many years to control pests in orchards and other crops. While it has done its share to save valuable crops, it also invades structures each fall in greater numbers than those of native lady beetles.

The Asian lady beetle is also known as the multicolored Asian lady beetle because its color varies from pale yellow to red-orange.

Most specimens have 19 black spots, but some have none. Another identifying character is the black M-shaped marking (think "M" for multicolored) outlined in white on its back just behind the head. The young are typical alligator-shaped lady beetle larvae, red, orange and black in color, with Y-shaped spines covering their bodies.



Convergent Lady Beetle

When disturbed or crushed, the beetles secrete a foul-smelling orange-colored fluid from joints in their legs. This can stain fabrics, carpeting, wallpaper and other household items. In addition, the adult beetles will feed on fruit, especially grapes, but also apples, peaches and berries. They prefer to lap up the juices of damaged fruit, but will bite into and feed on undamaged fruit as well. Similarly, the beetles will bite humans, though the bites are no more serious than pin pricks.



Asian Lady Beetle (Larva)

As the Asian lady beetle is a tree-dwelling species that naturally spends the winter in the cracks and crevices of cliffs, multi-story homes and homes on hills near wooded areas are likely to be invaded in the fall. Lady beetles will often settle down for the winter beneath siding and shingles, in attics, soffits, porches, garages, wall voids, window and door frames. Owners of homes at risk should seal these harborages when practical. Properly timed, preventive

treatment of exterior walls and surfaces with liquid residual pesticides may be of value, and is best done by pest management professionals. Once the beetles appear indoors, collect them using a vacuum cleaner.



Multicolored Asian Lady Beetles (Note Variation in Color and Markings)



Strawberry Root Weevil

moisture and shelter.

Strawberry root weevils (*O. ovatus* and *O. rugosotriatus*) are dark brown to black with reddish-brown legs and antennae. Adults are about one-fourth of an inch long. They feed on evergreens, fruit trees, strawberry, rhododendron, rose and other plants.

The **black vine weevil** (*O. sulcatus*) is larger (up to one-half of an inch). It feeds on yew, juniper, arborvitae, grape, strawberry, rhododendron, azalea, rose, spirea and others.



Black Vine Weevil

Infestations of root weevils are usually acquired from nursery stock, which should be inspected for their presence before planting. The weevils can be excluded by sealing cracks and gaps in structures. The removal of vegetation within a few feet of

a structure can reduce the likelihood of invading root weevils, but may not always be desirable or practical. Foliage of infested plants can be treated with residual pesticides to kill the adult beetles, or with systemic pesticides to kill both adults and larvae. And as they overwinter in the soil beneath plants, systemic as well as soil-applied granular insecticides can provide control in spring.

CLUSTER FLIES (*Pollenia* spp.) and
FACE FLIES (*Musca autumnalis*)

Cluster flies resemble house flies but hold their wings parallel to the body, not in a triangular configuration as house flies do. They are covered with fine golden hairs and have no stripes on the thorax.

Cluster flies are unusual in being parasites of earthworms, but are harmless to humans. Females lay eggs in soil near earthworms and, after hatching, the larvae (maggots) search for and consume the worms.



Cluster Fly

In the fall, adult cluster flies are frequent home invaders, looking to spend the winter in attics or other sheltered spaces. In late winter or early spring, they are often noticed sluggishly flying about after emerging from these spots.

Exclusion is again the best means of prevention; sealing the cracks and gaps through which these occasional invaders enter. Indoors, cluster flies can be removed using a vacuum cleaner, traps, or the old-fashioned fly swatter.

Like cluster flies, **face flies** resemble house flies and invade homes for shelter as winter approaches. Males have dull orange abdomens with black center stripes. Females are nearly identical to house flies, but darker with a silver stripe around their eyes. Face fly maggots develop on fresh cow dung, and adult females pester cattle and horses by lapping up moisture at their eyes, nostrils, mouths and wounds.

HOW TO STOP OCCASIONAL INVADERS

Exclusion is the first step to prevent all occasional invaders. Exclude them by using caulk, concrete, screen or hardware cloth (less than one-eighth of an inch mesh) to seal cracks and gaps in a structure's exterior. Entry points are often present in foundation walls, under siding, around windows and doors, vents, soffits, and where utility lines enter.

Habitat modification is another important control method. A plant-free band of rock, gravel or other inorganic material extending 2 feet to 4 feet out from the foundation essentially puts a barrier between occasional invaders and the structure. Organic material, such as soil, leaves, mulch, bark, grass and ground covers, retain moisture which attracts pests and also provides food and shelter for them. Leaky

pipes, faucets, misdirected downspouts and faulty grades can also provide moisture that attracts not just occasional invaders but many other pests including termites. The environment around a structure also can be manipulated by reducing outdoor lighting. Mercury vapor lights can be replaced with sodium vapor lights which are less attractive to insects. Low-wattage, yellow "bug light" bulbs can be used and shielded to reduce pest attraction. Indoors, windows and doors should be shaded so little or no light is visible from outside.

Various **mechanical controls** also can be employed. When pests enter in significant numbers, it is best to remove them with a vacuum cleaner. After vacuuming, seal them in bags and dispose of them promptly. Pests that cluster outdoors can sometimes be deterred, or at least discouraged, by spraying them with a water hose.

Traps are another useful mechanical control. Insect monitors, or sticky traps, can be purchased at local hardware stores, home and garden centers, from some pest control suppliers, or through the Internet. Sticky traps are simply cardboard with an adhesive that pests stick to when walking across them. When positioned indoors at likely entry points, on either side of doors, for instance, they can help monitor for pest intrusions. When numerous pests are caught on sticky traps in the garage, it may be time to apply additional methods before things get worse.

For pests attracted to lights, commercial light traps can be used, or makeshift light traps can be assembled for rooms where invaders congregate. At night, place a light source such as an unshaded lamp or drop light in the middle of the room. Surround the light with sticky traps. If sticky traps aren't available, try using trays of water to which a little dishwashing detergent is added. Turn the light on and turn off all other lights in the room. Pests, like lady beetles, will fly toward the light and become trapped.

Chemical control with pesticides also can be integrated into pest management plans, but consider using pesticides only after other methods fail. Baits, dusts and granular formulations, can be used in some situations (see discussions above). Total-release aerosols (known as "bombs" or "foggers") are generally of little use in combating occasional invaders. These products may not penetrate deeply enough into cracks and voids to contact the pests hiding there. Pesticide application directly into nooks and crannies that harbor pests such as boxelder bugs and lady beetles is also often recommended, but treatment of wall and window frame voids, above false ceilings, etc., can be counterproductive. First, pests killed in these spots are often difficult to remove and are attractive to pests that feed on dead insects. Also, when exposed to accumulations of insects, some people develop allergic reactions to the insect fragments, shed skins and feces. As an alternative to the direct treatment of voids, pests can be allowed to overwinter in them and emerge when temperatures warm up, at which time they can be killed and collected.

In most cases, the most effective and least hazardous pesticide applications for control of occasional invaders are *outdoor* applications. These involve residual pesticides applied in a band to the ground immediately around the foundation, the foundation wall, and sometimes around other potential points of entry including door and window frames, around vents, and where utility lines enter.

Microencapsulate, wettable powder, and suspended concentrate products work well for perimeter treatment because they don't soak in to porous surfaces as much as other formulations and adhere more easily to pests. But the timing of perimeter treatments is critical to success. Applications at times when pests are not likely to enter the structure, after pests have already entered, or with ineffective products, can needlessly expose people, pets and other non-target organisms to pesticides while providing little or no control. The use of pesticides may be best left up to pest management professionals.

NOTE: When pesticides are used, it is the applicator's legal responsibility to read and follow directions on the product label. Not following label directions, even if they conflict with information provided herein, is a violation of federal law.

This document is available on the Illinois Department of Public Health Web site at: <http://www.idph.state.il.us>. For more information, contact the Illinois Department of Public Health, Division of Environmental Health, 525 W. Jefferson St., Springfield, IL 62761, 217-782-5830, TTY (hearing impaired use only) 800-547-0466.

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