

# Ladies and Gentlemen, The Beetles!

Here's why you should love them, yeah, yeah, yeah.

Story and Photography By Douglas A. Spilker, Ph.D.

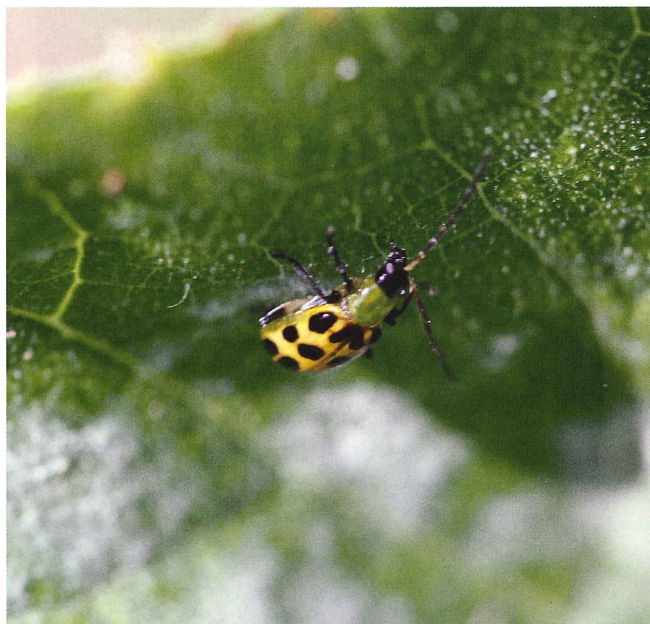
Surprisingly, many people have affection for beetles, applying their name to similarly looking cars and as monikers for rock bands. Beetles are likely beloved because they can be either good or evil. While some beetles devour ornamental plants, crops, and property, others are beneficial, eating plant pests, decomposing organic matter, and helping with pollination.

Coleoptera (beetles and weevils) is the largest order in the class Insecta, representing about 40 percent of known insects. As adults, most beetles have a hard shell (exoskeleton) that covers large, membranous hind wings. At rest, the wing covers meet along the middle of the back, forming a straight line. During flight, the beetles' wing covers are held out to the sides of the body, resulting in a slow awkward flight pattern.

Most beetles undergo a four-stage life cycle – egg, larva, pupa, and adult. Both the adult beetles and their larvae have chewing mouthparts, capable of causing great damage to garden and ornamental plants.

## THE GOOD

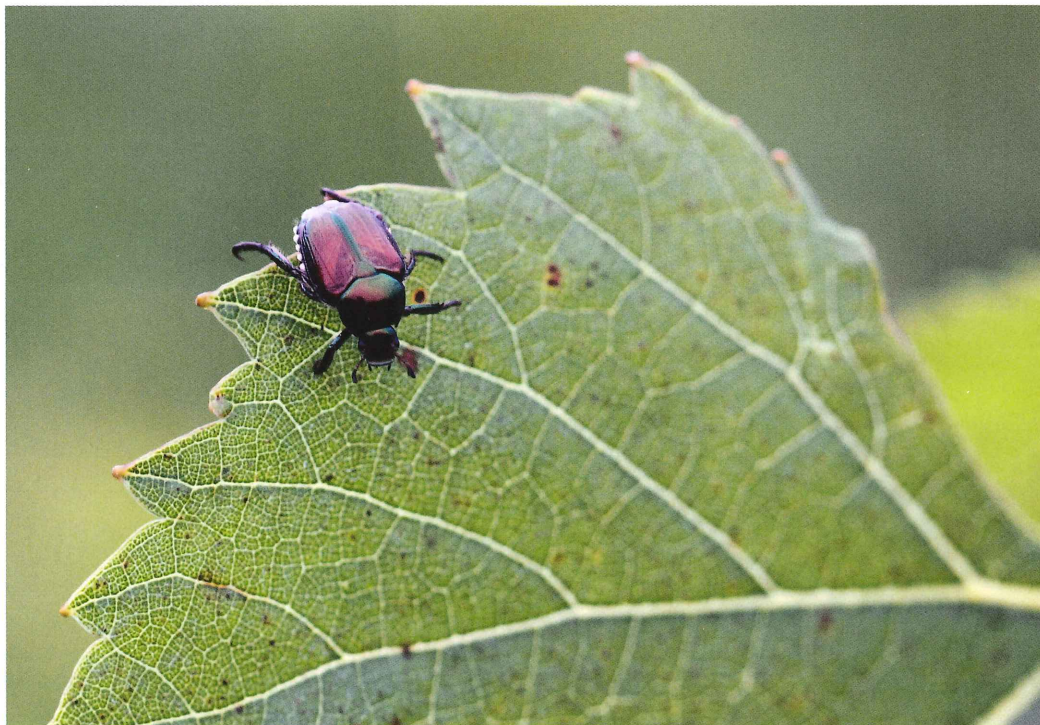
Beetles can be beneficial, usually by controlling pest populations. The larvae and adults of lady beetles feed on aphids, mites, whitefly, and mealybugs. Their larvae look like tiny, colorful alligators. Learn to recognize them, as to not mistake them for pests. Nocturnal ground beetles are common predators of many soil-dwelling insects, attacking eggs, caterpillars, and wireworms. Although fireflies are more interested in showing off their “glow” than feeding, their larvae are predators, feasting on other soil-borne insects and slugs.



➤ Lady beetles are one of the good “guys,” effectively feeding on plant pests like aphids and mealy bugs.

➤ The spotted cucumber beetle not only feeds on leaves and blossoms of cucumbers, but spreads bacterial wilt.

▼ Japanese beetle adults are metallic green and have voracious appetites.



## The Emerald Ash Borer

The emerald ash borer is an exotic, metallic-green beetle first discovered in southeastern Michigan in 2002. Since then it has spread to at least 29 states, and as far west as Colorado. The troubling aspect of this pest is that it can attack healthy ash trees, not just ones stressed and vulnerable. Since appearing in North America, emerald ash borer has killed hundreds of millions of ash trees. Although the adult beetles feed on foliage, it is the flattened larvae that do the serious damage by tunneling throughout the inner bark and disrupting the tree's ability to transport water and nutrients. Consult USDA-APHIS ([aphis.usda.gov/aphis/home](http://aphis.usda.gov/aphis/home)), [emeraldashborer.info](http://emeraldashborer.info), and your state's websites for more information.

### THE BAD

Most of the damage done by beetles is to plant foliage, but some beetles are doubly damaging by spreading plant diseases. Whether they are spotted or striped, cucumber beetles are the most significant pests of cucurbit or vine crops (cucumber, squash, melons, and pumpkins). The adults can cause crop losses by directly feeding on foliage, flowers, and fruit, but more detrimental is the spread of the bacterial wilt pathogen they spread as they feed. Protect young plants by using floating row covers until runners develop. Preventive insecticide applications may be necessary if there has been a history of bacterial wilt in the garden.

One of the smallest, yet very damaging, vegetable pests is the flea beetle. This tiny black beetle chews numerous small holes in leaves of eggplant, potatoes, tomatoes, and sweet corn. Flea beetles are so named because of their jumping ability. On small plants, this "shothole" damage can result in plant death.

The bean leaf beetle ranges in color from yellow to red. Adults drop from foliage when disturbed. Not only do they feed on the foliage and pods of beans and peas, but may attack stems of young plants at the ground level. Heavy feeding on larger plants causes a lace-like appearance to the leaves, resulting in a poor harvest.

Most leaf beetles spend the winter as adults in debris and weeds left in the garden or nearby. Thorough fall garden cleanup and crop rotation may prevent overwintering beetles from emerging near a vulnerable crop. Fall tillage may also

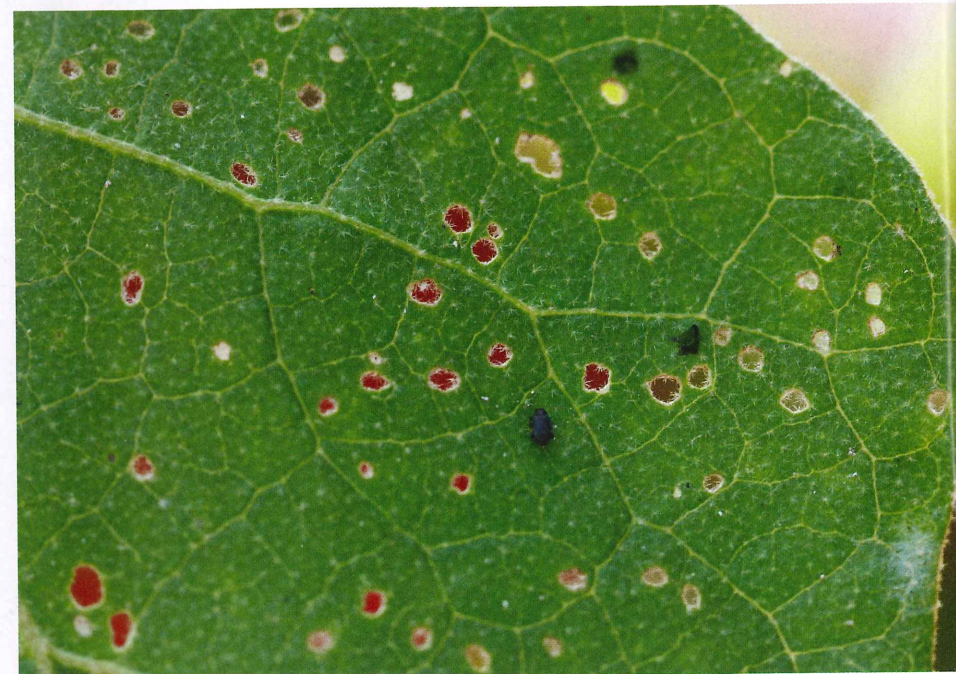


▲ As Pennsylvania leatherwing beetles wander flowers looking for aphids, they double as effective pollinators.

◀ The distinctively striped Colorado potato beetle is a common pest of potatoes, tomatoes, eggplant, and peppers.

◀◀ Masked chafer beetles are attracted to lights after their emergence in June and July.

➤ Tiny flea beetles chew small holes in leaves, giving them a "shothole" appearance. Here they appear on eggplant.



## Yeah, yeah, yeah!

Musical groups have always had a fondness for using insects in their names, like Adam and the Ants, the Bee Gees, Iron Butterfly, and the Katydids. However, the most well-known band was the Beatles. Folklore has it that the Beatles came up with their name because they were big fans of Buddy Holly and the Crickets and wanted a similar name. The "a" was added to suggest a musical "beat."

reduce their spring populations. Floating row covers can be effective when seedlings are still small. In-season insecticide treatments may be necessary to protect older plants from extensive damage.

### THE BIG

The large May and June beetles are common throughout the Midwest. As their name implies, the adults emerge from the soil in May and June and are strongly attracted to lights at night.

These hard-shelled, light brown to almost black beetles commonly feed after dark on the foliage of trees and hide in the grass, laying eggs during the day. The eggs hatch into white C-shaped grubs with brown heads. High populations of these grubs, as well as those of the smaller masked chafers, will feed heavily on turf-grass roots, causing turf to wilt and die.

Although quite colorful, Japanese beetles have insatiable appetites for foliage and flowers of roses, fruits, and deciduous trees. Remove them by hand if numbers are low, and neem has shown to be a low-impact treatment. Think twice before us-

ing traps, since they may draw in beetles from outside your property.

### AND THE BORING

There are many beetles that bore into trees, including bark beetles, flatheaded borers and longhorned beetles. The adults lay eggs on the bark, with the emerging larvae tunneling throughout the inner bark. Most borers can only attack trees stressed by disease, lack of proper care, or injury. Once the tree is infested, treatment options are limited, and it is best to manage them by improving tree vigor, pruning out infested branches, or removing the tree. Insecticides are occasionally used to prevent infestations of bark beetles on high-value trees.

Beetles come in a vast array of colors and sizes. It's no wonder that we find beetles fascinating, even if many are evil. However, some can be beneficial to our gardens, like the lady beetle – so "Let it be!"

Douglas A. Spilker, Ph.D., is a consulting ornamental plant pathologist and entomologist, garden writer, and lecturer.

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