by *Val Cervenka*

Beetlemania!

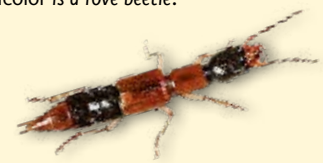
Young Naturalists

Photography by *Bill Johnson*

I'm a huge beetles fan. Oh, I love the Beatles too, but insects in the group Coleoptera *(co-lee-OP-ter-ah)* are the *real* rock stars of the animal kingdom.

The best thing about beetles is that you will always be able to discover some you have never seen before because there are so many different kinds, or *species*. Depending on where you live, you can find hundreds of species of beetles in your own back yard. Look for them on flowers, under the bark of dead trees, under stones, in ponds, or even on a dead animal. Some colorful beetles shine like brilliant jewels. Some beetles are hidden because their earthy colors blend with the ground, trees, or rocks. Start your beetle search by looking for the beetles pictured on the following pages, all found in Minnesota.

Clockwise from top left: *The bright markings of the red milkweed beetle* (Tetraopes tetrophthalmus) *warn away predators. Blister beetles like this* Epicauta pennsylvanica *secrete a chemical that causes skin blisters. Long-horned beetles, such as this* Eburia quadrigeminata, *are named for their very long antennae, which can be twice as long as the beetle's body.* Top this page: Tylonotus bimaculatus *is known as the privet borer.* Bottom: Homaeotarsus bicolor *is a rove beetle.*



Wing Covers

Coleoptera is the name that the ancient philosopher Aristotle gave to beetles. It comes from the Greek words *koleon*, meaning "sheath," and *ptera*, meaning "wings." Sheath wings are the beetle's hard wing covers, or *elytra*. The wing covers protect the delicate hind wings. When not using its hind wings to fly, the beetle folds them beneath its elytra. No other insect species has such wings with covers.

Click beetles make a clicking sound when flipping into the air to startle and scare away predators. Left: *The eyed click beetle* (Alaus oculatus) *also has large fake eyes called eyespots behind its head. The eyespots can frighten off predators that mistake the beetle for a bigger creature.* Opposite page, clockwise from top right: Psuedanostirus hieroglyphicus, *another click beetle, has marks on its wing covers that look like ancient Egyptian writing called hieroglyphics. One of Minnesota's native lady beetles is the cream-spotted lady beetle* (Calvia quatuordecimguttata). *This species can be either brown with cream-colored spots or red with black spots. Net-winged beetles like* Calopteron discrepans *have veiny wing covers, or elytra.*

Beetles Have Niches

Beetles are incredibly diverse and adaptable to their surroundings. The assorted shapes and sizes of their legs, wings, antennae, and mouthparts allow them to live almost anywhere on Earth. They can be found in small spaces called *niches* within all kinds of habitats. Oceans and polar regions are just about the only places beetles have not turned up.

With their chewing mouthparts, beetles can eat all kinds of things. Many eat plants, pollen, and fruit. Some beetles are predators of other insects. Others browse on fungi and lichens. Some beetles prefer animal remains and dung or are parasites that live on other insects.

Size also contributes to the success of these amazing creatures. Small critters need less space, so they can find more niches in the habitat. The tiniest feather-winged beetles are less than $\frac{1}{16}$ of an inch long. They turn up in forest floor litter, under bark, and in dung and compost. They feed on fungus spores and mold. In South America the giant long-horned beetle can grow to more than 6 inches in length. In Minnesota the large tile-horned prionus, which eats the roots of oak and other hardwood trees, can be larger than 2 inches.

Top left: *The grape pelidnota* (Pelidnota punctata) *is a common scarab beetle*. Bottom left: *The sumac flea beetle* (Blepharida rhois) *has broad hind legs built for jumping*. Right: *The* Polydrusus impressifrons *weevil has light-reflecting scales that shimmer.*







Super Populations

The world has more small plants and animals than big ones. And small ones come in more varieties. About 5,400 species of mammals and approximately 10,000 bird species live around the world. There are so many species of insects that scientists have not been able to find and name all of them. Scientists estimate between 1 million and 80 million insect species live on Earth. About 40 percent (400,000 to 32 million) of those are beetle species. Obviously, insects—and particularly the beetles—rule!

Top left: Macrosiagon limbatum *has comb-like antennae, which help this beetle find food.* Top right: *The hollyhock weevil* (Apion longirostre) *is a straight-snouted weevil. It has chewing mouthparts at the tip of its long snout.* Middle, left to right: *Known as pinchingbugs, male stag beetles like this* Lucanus capreolus *have large jaws. The six-spotted tiger beetle* (Cicindela sexguttata) *is common in Minnesota. Long-horned beetles such as this privet borer* (Tylonotus bimaculatus) *help recycle dead and dying wood.* Bottom left: *Almost every acorn contains a weevil in the genus* Curculio. Bottom right: Megacyllene robiniae, *a longhorn beetle, is known as the locust borer.*

Teachers resources:

Teachers guide:
www.mndnr.gov/young_naturalists
More on beetles and other insects:
www.bugguide.net