

COLEOPTERA AROUND THE WORLD



Purpose of activity: To get an overview of the great variety of insects within the order Coleoptera.

Description of game: Players listen to clues about beetles and weevils, and then try to guess which one is being described. They find the picture on the map and put their token on it. When the answer is given, if they were correct, they receive a picture of that beetle to pin onto their “collection.” The clues can be adjusted to suit the knowledge level of your players. There isn’t any official “winner” of the game. This might sound lame, but it actually worked very well in my classroom. They were very enthusiastic simply about collecting and pinning the beetle pictures.

Target age group: 8 to 12

Time needed: For set up, about 15 minutes or so (just some cutting and a little pasting). For playing, the time can be very flexible. You need not use all the insects if time is short.

Materials needed:

- color copies of the pattern pages
 - scissors
 - glue stick and clear tape
 - tokens to mark player positions on map
 - long pins (such as quilting pins that have a colored ball at the top)
 - a Styrofoam or cardboard sheet onto which the insect pictures can be pinned
- NOTE: If using pins is not an option, the pictures can be tacked with glue stick onto a piece of paper.

How to set up:

- 1) Trim off the edges that are labeled TRIM.
- 2) Put the 6 map sections together to make the board. The trimmed edges will overlap onto the untrimmed edges. Use glue stick on the untrimmed edges, then put some clear tape on the seams on the back side.
- 3) Print one set of beetles for each player or pair of players that will be collecting.
- 4) Cut apart all the insect cards.
- 5) If you are using pins to “collect” the beetles, put a supply of pins on the table or in a little cup.

How to play:

The game is flexible and can be adjusted to suit your players' ability level. Some of these beetles are very well-known and others are much more obscure. You can choose the clues in any order, and might want to start with some easy ones so that everyone gets their collection started right away.

In my class, we had just studied insects for several weeks and they had a decent knowledge base to go on. However, I did find that I had to shorten some of the clues, as their patience level for listening to the whole clue was limited. They were so excited about collecting the pictures and looking at the map that they had a hard time listening. So I simply chose a few facts that I considered most important. I also sometimes gave extra hints about the location, using the directions of the compass and the names of the continents. Additionally, I went slowly and let the players talk among themselves about the clue and try to figure it out together.

You can have the players play individually or in pairs.

You don't need to assign teams, and can have everyone in the classroom playing at the same time.

You can choose to give the name of the beetle or weevil as you are giving the clue, or keep the name as part of the answer. Some will be identifiable just with the name (ladybird beetle, firefly, Japanese beetle). For the obvious ones, you could withhold the name. For more obscure beetle, the name might help (e.g. acorn beetle sitting on an acorn, bee beetle that looks like a bee, etc.)

There isn't any winner and there isn't any definite ending to the game except if you reach the last clue. In my class, we simply ran out of time and ended the game after doing only about half of the beetles. But everyone had a great time and felt good about their "collection" (which they had to turn in at the end of class so I could recycle them).

NOTE: All photographs are either public domain or randomly taken from various ".edu" sites as long they did not say "copyright" on them. Since this game is being made available free of charge, the use of these pictures should fall under "fair use." It is not the author's intent to take personal advantage of anyone's copyrighted materials, only to help educate the world about beetles.





Canada has many of the same beetles found elsewhere in the world — click beetles, ground beetles, water beetles, ladybird beetles, stag beetles, blister beetles, etc.

TRIM

TRIM





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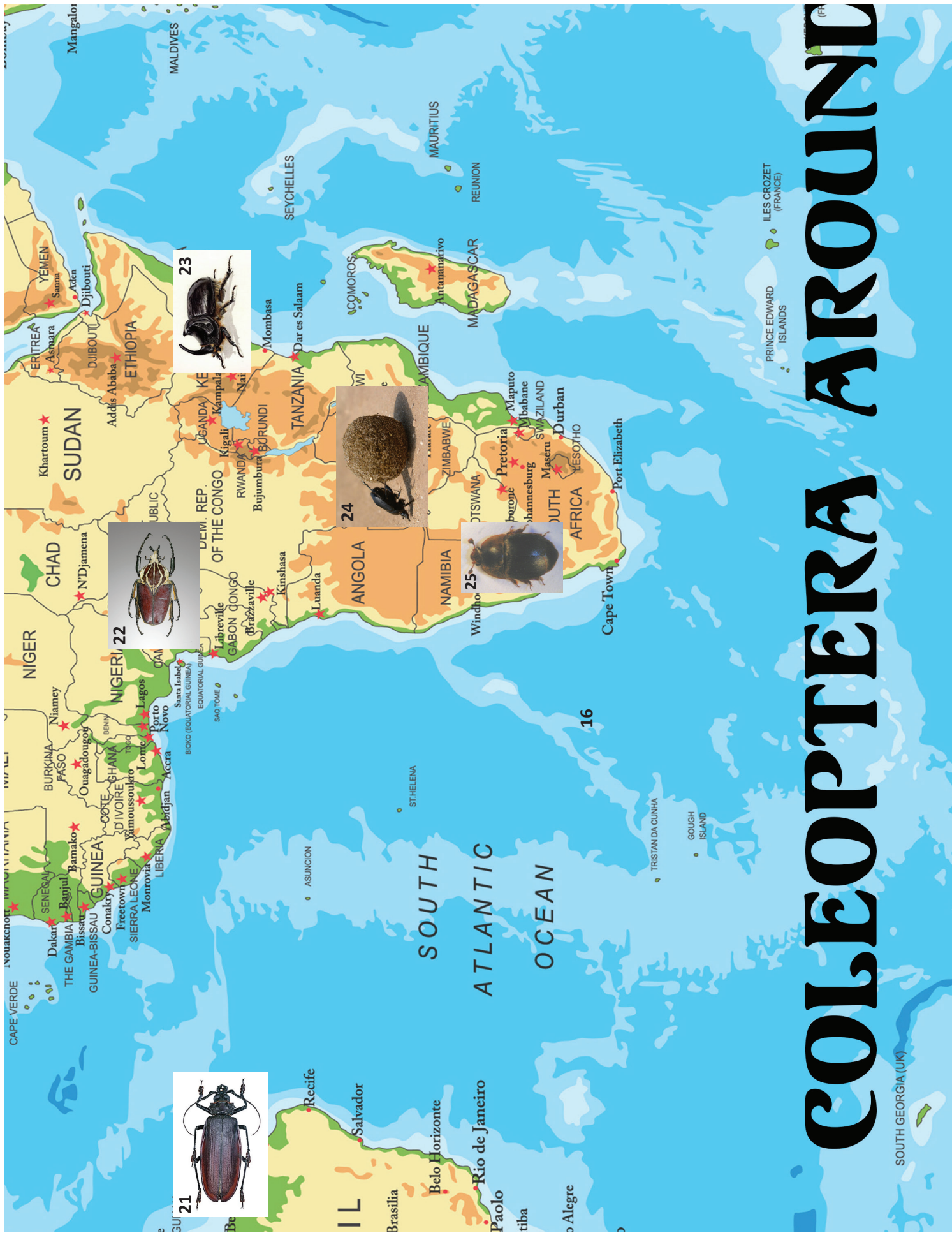
16



15

Russia and China have many of the same beetles found in other parts of the world such as click beetles, ground beetles, leaf eating beetles, water beetles, stag beetles, longhorn beetles, ladybird beetles, etc.





COLEOPTERA AROUND

TRIM



THE WORLD



1) Acorn weevil



2) Calligrapha beetle



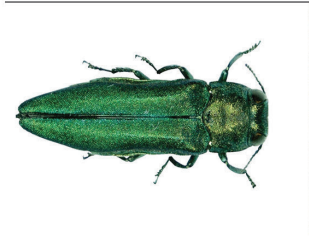
3) Colorado potato beetle



4) Blister beetle



30) Golden spider beetle



5) Emerald ash borer



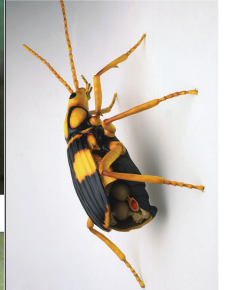
6) Soldier beetle



7) Firefly



8) Boll weevil



29) Bombardier beetle



9) Bee beetle



10) Ladybird beetle



11) Stag beetle



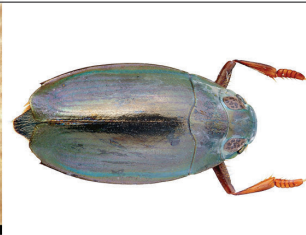
12) Great diving beetle



13) Dead-nettle leaf beetle



14) Pine bark beetle



15) Whirligig beetle



16) Darkling beetle



17) Japanese beetle



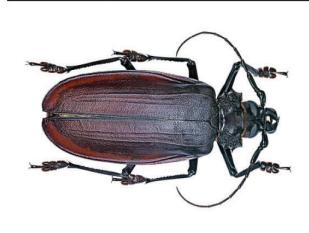
18) Red & black dung beetle



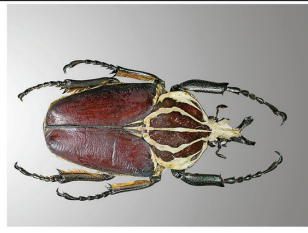
19) Longhorn beetle



20) Ground beetle



21) Titan beetle



22) Goliath beetle



23) Rhinceros beetle



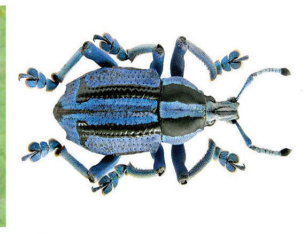
24) Dung beetle



25) Hive beetle



26) Spotted tortoise beetle



27) Blue weevil of New Guinea



28) Carpet beetle

Make 1 copy of this page for each player (or pair of players if you are having them pair up).

1) Acorn weevil

Weevils are also members of Coleoptera. They can be recognized by their very long snout. This particular weevil loves acorns. The female weevil will lay eggs in a young acorn, then the larvae will live in the acorn all summer, eating the nut inside. When the acorn falls to the ground in the autumn, the weevil larva chews its way out and then hides in the soil all winter. In the spring it comes out as an adult weevil. These weevils will live anywhere oak trees are found, even in fairly northern climates.

2) Calligrapha beetle (also called Rorschach beetle, after the Rorschach blot test that used to be given by psychologists)

This beetle gets its name from the squiggly lines on its back which look like ink lines. It is in the leaf eating group of beetles and loves to munch on big trees in public parks, such as elm, oak, basswood and dogwood. Fortunately, the beetle is attracted to sick or damaged trees, so it is actually helping to recycle trees that will die soon. If the tree is disturbed, the beetles will drop to the ground and hide, then crawl back up the tree when they think it is safe again.

3) Colorado potato beetle

This beetle is native to the eastern states of the U.S. When pioneers began to plant potatoes they soon found that these beetles stopped eating whatever they ate in the wild and began feeding on potato plants. The population of these beetles grew quickly and they started spreading east. In the late 1800s they were accidentally transported to Britain in a shipment of potatoes. Britain worked very hard all through the 1900s to get rid of them.

4) Blister beetle

These beetles are found all over the world, in many different colors. It is thought that the bright colors might help warn possible predators that these beetles contain a toxic substance. Not all of these beetles are brightly colored, however, and some are mostly black. The species of this beetle that lives in the western states of the US are particularly toxic to horses. Unfortunately, the beetles like to eat the plants that horses eat, so it is very possible for a horse to eat some beetles hiding in the hay. Just a few beetles can make a horse very sick. Ranchers must always be on the lookout for these beetles in their fields.

5) Emerald ash borer

This beetle lays eggs in the bark of ash trees. The larvae live under the bark and eat the wood for one to two years, carving out long thin tunnels. Originally from Asia, these beetles have recently invaded North America and are progressively killing all the ash trees in several states. (Hint about color of Emerald City can be given.)

6) Soldier beetle

As adults, these beetles like to sit on bright-colored flowers such as marigolds and zinnias. Their name comes from one species that resembles the uniforms of British soldiers of the 1700s. These beetles can be predators and eat caterpillars and insect larvae, but they will also feed on the nectar and pollen of flowers. Their larvae also are predators but like to feed on insects that eat people's gardens, so these beetles are usually welcomed by gardeners.

7) Fireflies

Surprisingly, not all members of this beetle family produce light. Those that do make light have a special organ in their abdomen that uses oxygen to begin a chemical reaction. Various species of these beetles are found in eastern North America and in Europe and Asia. Usually the adults do not live for more than a few months. The eggs survive the winter by being buried in the soil.

8) Boll weevil (or cotton boll weevil)

Like all weevils, this species has a long snout. Unlike other weevils, this particular species feeds almost exclusively on cotton plants. It is thought to be native to South America and came up into the U.S. in the 1800s as farmers began growing cotton. During the 1920s the weevil infestation was so intense that the cotton industry was greatly damaged. Insecticide chemicals were used at first, but as the weevils became resistant, other methods were tried such as bringing in a certain species of fungus and a parasitic wasp that lays its eggs on weevil larvae.

9) Bee beetle

This beetle is a member of the scarab family but does not look anything like other members of the family such as the dung beetles. It is a "mimic", and looks like another insect that visits flowers. Since this beetle loves to sip nectar and eat pollen, the mimicry works out well. In the process of getting nectar and pollen, the beetle helps to pollinate the flowers. This beetle is found in North America and Europe.

10) Ladybird beetle

This beetle is found mainly in Europe and North America. It is welcomed by gardeners because its larvae like to eat aphid insects that are harmful to plants. The adult form of this beetle eats other insects but will also nibble on plants and pollen now and then. This beetle is famous for its round shape and its spots.

11) Stag beetle

This beetle has very large mandibles- so large that they resemble the antlers of a deer. The male beetles use these mandible is much the same way that male deers use antlers-- to fight over territory and females. Various species of this beetle occur all over the world, but the first written descriptions we have of them are from the Roman writer Pliny the Elder about 2,000 years ago.

12) Great diving beetle

These large beetles are native to Europe and northern Asia. At over 3 centimeters in length, these predators are able to eat a large range of small animals including tadpoles and small fish. The larvae are also predators, swimming about like little dragons in the water. When these beetles dive, they take an air bubble down with them so they can breathe under water. At night these beetles often leave the water, using their wings to fly around so they can look for new sources of water. They know they have found water if they can see the reflection of the moon. Sometimes this gets them into trouble, though, as they will see the moon's reflection on wet road surfaces!

13) Dead-nettle leaf beetle

This species is one of the most beautiful beetles in the world. It is small, less than a centimeter long, but easy to see because of its brilliant iridescent colors that flash in the sun. It eats only the leaves of one particular plant, the dead-nettle. (It is called the dead-nettle because unlike other nettle plants, this one does not sting.) You can find these beetles all over Europe and into western Asia—wherever dead-nettles grow.

14) Pine bark beetle

This beetle eats pine trees in the northern forests of North American and Asia. It eats the wood right under the bark, which is the living part of a tree. It is considered a pest because a large infestation of these beetles can kill many trees and severely damage an entire forest. The trees try to fight back and in some cases can produce a chemical substance that weakens or kills the beetle's eggs and larvae.

15) Whirligig beetle

These beetles live all over the world, but always in fresh water. You can easily spot them as they whirl around in circles on the surface of the water. They have four eyes instead of two. There is a upper set of eyes for seeing above the water and a lower set that stays under the water. These beetles live together in large group. They are predators, eating things that land of the surface of the water. They have very long front legs adapted for grabbing prey. If you pick them, watch out-- they will pinch you!

16) Darkling beetle

Various species of this beetle are found all over the world. The larval stage is often called a mealworm and is a popular food for pets such as lizards. In some countries, mealworm are eaten by humans as a source of protein. In 2015 a researcher discovered that mealworms can survive on nothing but styrofoam!

17) Japanese beetle

This beetle is native to Japan. It came to the North America in 1916 in a shipment of iris bulbs. Since then, it has spread to many US states and to Canada as well. It is considered to be a garden pest because it eats just about every type of fruit and vegetable. It likes to nibble the tissue between the veins of leaf, leaving it looking like a skeleton. In Japan these beetles are not nearly as much of a problem because there are natural predators that eat the beetles.

18) Red and black dung beetle of South America

These dung beetles have brilliant red colors and look like they are ready to go to a colorful party or festival, so their scientific name ends in "festivum." As with all dung beetles, their life cycle depend on animal dung, but these beetles will also eats fruits and dead insects or animals.

19) Longhorn beetles

This beetle family is a very large one, with species all over the world having many different shapes and colors. The name comes from the fact that their antennae are often longer than their body. Beetles of this family found in Papua New Guinea are often iridescent green or blue, and because of their beauty are highly prized by beetle collectors.

20) Ground beetle

These beetles live all over the world. Their claim to fame is being very tiny yet very fierce. Because they are so small and can move extremely quickly they are very hard to catch. Some of them have shiny metallic colors and look like they are made of gold or silver.

21) Titan beetle

These South American beetles are some of the largest in the world. Strangely enough, no one has ever found any larvae from this type of beetle. Best guess is that they live inside trees. Although adult Titan beetles have mandibles sharp enough to snap a pencil in half, they do not eat at all. The adults just live long enough to find a mate, lay eggs, then die. When trapped, they make a hissing noise, much like hissing roaches do.

22) Goliath beetles

This beetle lives in Africa and is the largest beetle species in the world. Male beetles can be as big as a human hand. The larvae of this beetle need to eat foods that are very high in protein, but the adults prefer to eat sugary tree sap and fruit. In captivity these beetles can live for about a year.

23) Rhinoceros beetle

This type of beetle is found all over the world, including Africa. It is one of the largest beetles and its name comes from the large horn that grows on the head of the male. The males use these horns for fighting. It is a nocturnal beetle, coming out at night to eat fruit and plant sap. It belongs in the scarab family, the group that the dung beetles belong to.

24) Dung beetle

These beetles are members of the scarab family. There are thousands of different species that live all over the world. What they all have in common is that they use animal dung as part of their life cycle. Some roll it into balls, while others just use it "as is." All of them lay their eggs in the dung so their larvae will have something to eat when they hatch.

25) Hive beetle

This beetle is native to southern Africa but has recently spread to North America, Australia and the Philippines. The adult beetles not only look like bees, but they live in bee hives. They lay their eggs in the honey combs and the larvae feed on honey. These beetles are considered to be pests, as they can cause great damage to a hive.

26) Spotted tortoise beetle

This beetle gets its name from its resemblance to a colorful turtle shell. It lives all over southeast Asia and eastern Africa. It likes to eat leaves, especially sweet potatoes, but usually the damage is very minimal and farmers can just ignore them. The female glue her eggs to the leaf then covers them with a layer of what looks like paper.

27) Blue weevil of Papua New Guinea

This weevil is highly sought after by collectors because of its attractive body shape and spectacular blue and green colors. The bright colors might help to warn possible predators that it contains toxic chemicals. It lives on an island where it eats yam leaves.

28) Carpet beetle

This beetle is not native to Australia but lives there now. It loves to eat carpets, furniture and clothing, so it is a pest that people try to get rid of. The larvae do even more damage than the adults. Moth balls can be used in closets and drawers to keep them out.

29) Bombardier beetle

This beetle is famous for its ability to produce a boiling hot explosion out its rear end. It mixes two chemicals together, as a firefly does, but instead of light, this beetle makes a boiling hot liquid that can burn its enemies. It can produce as many as 20 explosions per minute. The beetle lives along riverbanks and feeds on other insects.

30) Golden spider beetle

This Australian beetle has golden hair and a round abdomen that resembles the shape of a spider's abdomen. It is considered to be a pest because it will get into many types of storage bins and nibble on grains, fruits, meats, cotton, wool, silk, feathers and paper.