Wildlife Express

VOLUME 37 | ISSUE 2 OCTOBER 2023

Wolf Spider

Inside

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Wolf Spider

When you hear about a wolf spider, what do you think of? Many people might picture a gigantic, hairy, eight-legged monster like Aragog from the Harry Potter series. While the hairy part is right, wolf spiders are not enormous, and they certainly are not monsters. Instead, they are fascinating spiders with many interesting adaptations for survival. Let's take a closer look.

Wolf spiders are members of the spider family, *Lycosidae* (lie-COSA-day). They are named from the ancient Greek word for wolf. Like wolves, these spiders often chase their prey, but they do not live in packs. Instead, wolf spiders are solitary, living by themselves. Around 2400 species of wolf spider live all over the world. You can find them everywhere except in Antarctica. Most wolf spiders range in body size from that of a pencil eraser to about one inch long. They look larger when you add the length of their legs. The largest wolf spider lives on Deserta Grande Island in the Atlantic Ocean. Legs and all, it's a little over four inches in size!

Wolf spiders can be found living in many habitats. They eat whatever prey they can catch. Their excellent eyesight helps them catch large, ground-dwelling insects and other spiders. Unlike some spiders, wolf spiders do not make webs. They catch their dinner by stalking and chasing. While these spiders are fast, being camouflaged helps them hunt. Their bodies are brown, gray, tan, and black with stripes that help them blend in and hide. All the hairs on their legs and bodies are important vibration sensors. These hairs are so sensitive that they help the spider tell the difference between wingbeats or footfalls. This helps them identify what is heading in their direction, food or danger.

Wolf spiders have another amazing adaptation, night vision! If you look at a wolf spider's eyes, you can see how they are arranged on the spider's head. The first set of four eyes are small, all in a straight row. Above this row are two large eyes with two more behind them. These back eyes are arranged in a "V" pattern. This helps give the spiders excellent night vision. Many insects are active at night. Being able to see your food coming makes for easier hunting.

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Female wolf spiders are good mothers. After mating, the female lays several dozen eggs. She spins an egg sac using her silk and encloses her eggs inside. The egg sac is attached to the spinnerets at the end of the female's abdomen. This lets the female carry her egg sac with her wherever she goes. When the eggs hatch, the spiderlings crawl up on their mother. She carries them on her back for several days. Seeing a wolf spider with dozens of tiny spiderlings on her back is quite a sight!

Wolf spiders can live several years, especially the females. Besides eating many insect pests, wolf spiders are important food for other animals. Birds, small lizards and shrews eat wolf spiders. They are harmless to people and only bite to protect themselves. Even though wolf spiders might look big, hairy and a bit scary, now you know that they are really cool creatures.

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Bottom Photo: CC-BY Victoria Runnoe at Idaho Fish and Game

The Spider Family

Photo: CC-BY Ken Pollard at Flickr.com

Spiders are part of the largest group of animals on Earth, the arthropods. While this group includes insects, spiders are not insects. They are arachnids. This group of arthropods includes spiders, mites, ticks, scorpions and several other relatives. Over 45,000 species of spider live all over the world and more are being discovered. The only place you will not find a spider is Antarctica.

Spiders can be as tiny as the pinhead-sized Samoan moss spider. The prize for the largest spider goes to the Goliath bird eater. It is a kind of tarantula and is one foot across (including legs)! This solitary nocturnal spider lives in South America. Most North American spiders are less than one inch long, including their legs.

Spiders have two body parts, the cephalothorax and the abdomen. The cephalothorax is made up of the head and thorax of the spider. Eight legs help spiders get around. They also have two body parts called pedipalps. These are part of a spider's mouth, but they look like small legs. Pedipalps help spiders sense objects, shape webs and capture and eat their prey. In male spiders, the pedipalps are often swollen at the ends during the mating season. This makes the males look like they are wearing boxing gloves.

In spite of having eight eyes (and sometimes six), most spiders do not see very well. Instead of using sight to capture their prey, spiders rely on their ability to sense vibrations. The hairs on spider legs and bodies are very sensitive. A spider in a web can feel the slightest vibration on a strand of silk. They can even tell one kind of insect from another when it hits the web. Once the spider senses the vibrations, the action is on! The spider runs across the web to kill her prey and wrap it in silk. Spiders kill prey using venom. This venom is injected through two hollow fangs. It also contains digestive juices. These juices turn the inside of the prey into a liquid that the spider can suck out. While that might sound gross, it is a very efficient way for spiders to eat.

Spiders do not have a skeleton. Instead, they have what is called an exoskeleton. It is a hard outer covering that protects the spider. Many arthropods have exoskeletons. As spiders grow, they molt their exoskeleton. How often they molt depends upon the spider's age. Young spiders molt more often. They are growing and quickly outgrow their exoskeleton. The new exoskeleton grows under the old one. When it's ready, the old exoskeleton splits and the spider wriggles out. The new exoskeleton is soft and might take a few days to become hard. During this time, the spider hides to stay safe from predators looking for a nice soft meal.

Many people think all spiders are dangerous. In fact, most spiders are harmless. In North America, only the black widow and brown recluse are dangerous to humans. Like most spiders, these two species are quite shy and don't want to be bothered. Overall, spiders are critically important in helping control insect populations. Without the help of spiders, many of our crops as well as wildlife habitat could be destroyed by too many hungry insects.

Spiders and people

For a lot of people, spiders are terrifying. With their hairy bodies, many legs and eyes, and skittering movements, they can seem odd and scary. People living in Europe during the Middle Ages would agree. At that time, many Europeans thought that spiders were used by witches to practice witchcraft. They were also thought to be symbols of evil. Some of our Halloween decoration ideas probably come from these beliefs. Many other cultures, however, had the opposite feelings about spiders. They were thought to represent wisdom, patience, fate, female power and strength, and the protection of humankind.

The ancient Greeks thought spiders were messengers of the gods. Their job was to help guide people through their lives. The Greeks and many other cultures thought that spider webs were protection or good luck. Celtic people thought spiders were sacred. Spiders were seen as important links to the spiritual world.

Many native people in North America such as the Hopi, Pueblo, Navajo and Maya see spiders as wisdom keepers. Spiders are often called Grandmother Spider. She is an important part of their creation beliefs. Grandmother Spider is thought to be the mother to all people, protecting and helping them through life. Isn't it interesting how differently or similarly people can view the same creature?

What do you think about spiders?

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Grandmother Spider Art: CC-BY Fenixcs at Flickr.com

Poisonous or Venomous?

Photo: CC-BY Jason Combe at Flickr.com

When you hear about spiders or snakes you often hear the words poisonous or venomous. Often these two words are used to mean the same thing. But are they really the same?

Both poisons and venoms are made by an animal or a plant, but they are different. A poison is a substance an animal or plant uses to protect itself. It is something that can be inhaled, eaten or absorbed through the skin. Poisons are made of small molecules that can easily move through skin or other body membranes like digestive systems or lungs. Some poisons are fast-acting while others are not.

Venom is used for hunting. It blocks the transmission of important chemical messages in the body. This causes the prey animal to die, making it easier to eat. Because venom molecules are large, venom must be injected. Venomous spiders and snakes have hollow fangs for injecting venom.

Some animals can be both poisonous and venomous. A cobra is an example. Their venom can be injected or spit. When cobra venom is spit at an animal or person, it can be absorbed, especially through the eyes. If a cobra bites an animal, the venom is injected through its fangs. The blue-ringed octopus is also poisonous and venomous. If a predator eats this octopus, its venom acts like a poison as it is absorbed by the predator's body. If the octopus bites the predator, then the venom is injected.

All spiders have venom. This is how they kill their prey so they can eat. The venom of most North American spiders is not harmful to people. Additionally, most spiders have very small fangs that cannot easily break through our skin. When a spider bite happens, it's often because someone was intentionally bothering the spider or accidently disturbed it. Like a bee sting, a spider bite might hurt for a while, but it won't cause lasting harm. The exception to this is a black widow or brown recluse bite. Even though their bites are not as dangerous as you might think, seeking medical attention is important. Fortunately, black widows are the only dangerous spider in Idaho.

Spider Silk

One of the most amazing things about spiders is their silk. All spiders spin silk. It is used for many things such as webs, draglines, egg sacs, making shelters, ballooning and even for capturing an air bubble by diving bell spiders living underwater.

Spider silk is made of protein in seven glands in the spider's abdomen. Each gland makes a different kind of silk. These each have different uses and properties, including flexibility, stickiness and strength. In fact, spider silk is stronger than steel. It is one of the strongest natural fibers. When a fly hits a spiderweb, that web absorbs a lot of force! It is a miniature version of the force the arresting wire on an aircraft carrier receives when the tailhook of a landing fighter jet grabs it to stop the jet. In addition, spider silk can stretch two to four times its length before breaking.

One of the most amazing things spiders use silk for is ballooning. Spiders use ballooning to get across large spaces. Spiderlings often use this technique. They climb up on something like a tall blade of grass where they can catch the breeze. Then, they send out a strand of silk that the breeze picks up along with the spider. Ballooning spiders have been seen more than two miles up in the sky or thousands of miles out to sea!

Each species of spider has different silk glands. None of them have all seven glands. The ones they have depend upon how they use their silk. For example, wolf spiders use silk for different things than a web-building spider like an orb weaver. Some spiders can spin silk that has low ultra-violet reflection so insects cannot see it. Silk can be smelly to attract mates. It can be sticky or not sticky. Even male and female spiders use different silk.

Silk is spun by one to four pairs of spinnerets at the end of the abdomen. The spider uses her legs and pedipalps to work with the silk. It begins as a liquid in the silk gland and hardens into strands as soon as it leaves the spinnerets. It is an amazing process to watch a spider build a web.

Photo: CC-BY Mark Busy With Bats at Flickr.com

Spider Webs

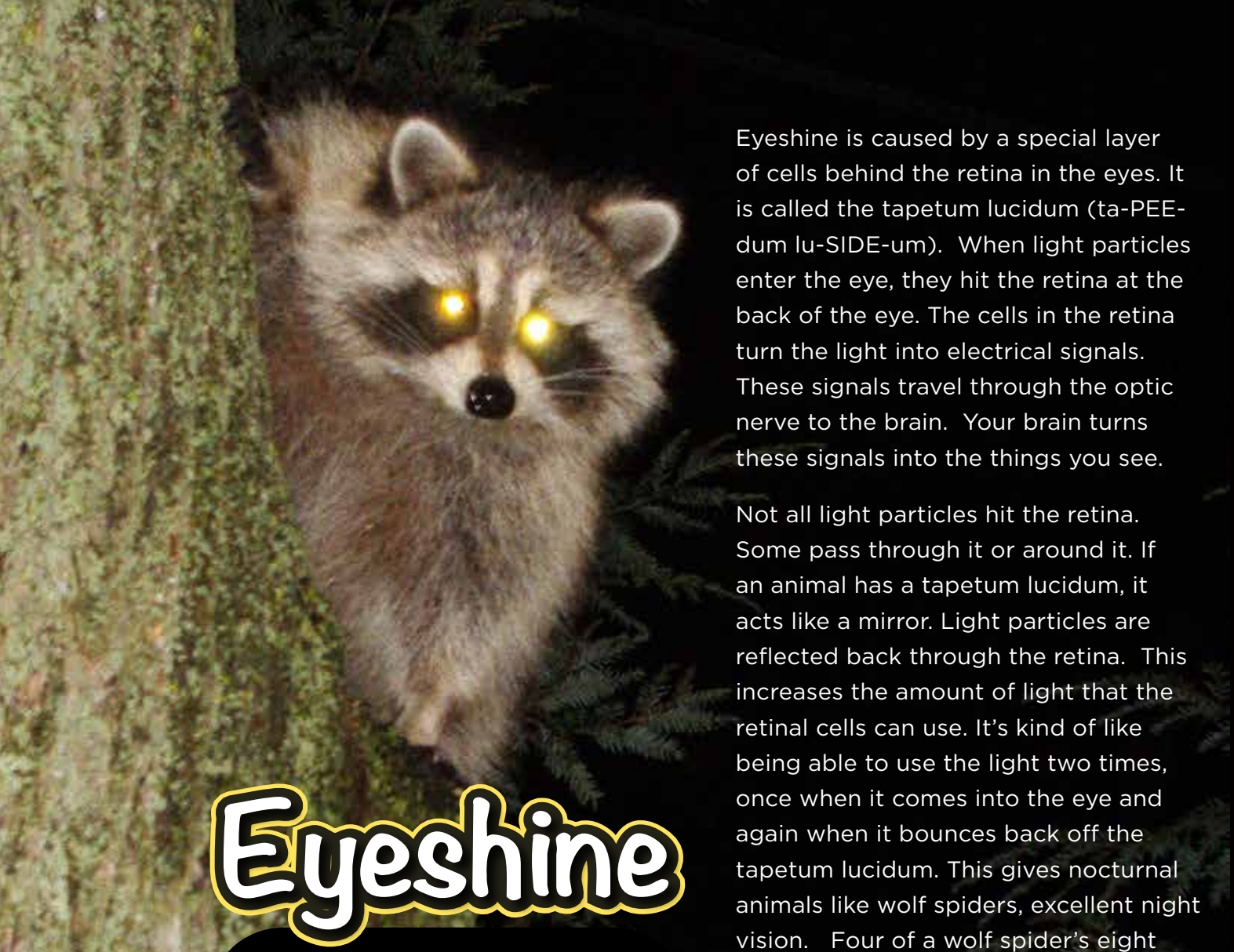
If you ever look closely at spider webs, you will notice that they have different shapes and structures. Spiders spin seven different kinds of webs. These include orbs, sheets, tangles, funnels, lace, radial and purse webs. The kind of web the spider makes depends on the species of spider. Many web-building spiders can be identified by the shape of their web. For example, what we think of as the classic spiderweb shape is an orb web. These are named for the orb weaver spiders that make them. Can you think of a famous orb weaver spider? If you guessed Charlotte, you are right! She was an orb weaver spider.

Some spider webs contain sticky strands of silk. These are made in one of the spider's silk glands. But not every web-building spider uses sticky silk. Some spiders use sticky and non-sticky strands. They know which strands are which. Having non-sticky strands allows the spider to both build a web and avoid being caught in their own web. When a spider web traps an insect, the spider can quickly run across her web on the non-sticky strands to catch her prey.

With all the spider webs we see, it seems like all spiders must spin webs. In fact, most spiders do not. Spiders like wolf spiders and jumping spiders chase their prey instead of catching it in a web. These spiders use silk for things like making a shelter or for a dragline when moving from one place to another.

Orb weaver spiders usually eat their webs when they start breaking apart. While that might sound odd, eating the web recycles the protein used to make it. This saves the spider the energy it would need to make new silk. Instead, the protein goes right from the spider's digestive system to its silk glands where it becomes new silk.

Top Photo: CC-BY Fatkayu at Flickr.com Bottom Photo: CC-BY edgar frias carrasco at Flickr.com



Eyeshine

Have you ever seen the glowing eyes of an animal at night?

This happens when a light shines toward an animal's eyes and is reflected back, making the glow we see. This is called eyeshine. Not all animals have eyeshine, including humans. The red we sometimes see in photos of people is not eyeshine. Strong light illuminates the blood vessels at the back of our eyes, giving the red-eye we see in a photo.

Eyeshine is caused by a special layer of cells behind the retina in the eyes. It is called the tapetum lucidum (ta-PEE-dum lu-SIDE-um). When light particles enter the eye, they hit the retina at the back of the eye. The cells in the retina turn the light into electrical signals. These signals travel through the optic nerve to the brain. Your brain turns these signals into the things you see.

Not all light particles hit the retina. Some pass through it or around it. If an animal has a tapetum lucidum, it acts like a mirror. Light particles are reflected back through the retina. This increases the amount of light that the retinal cells can use. It's kind of like being able to use the light two times, once when it comes into the eye and again when it bounces back off the tapetum lucidum. This gives nocturnal animals like wolf spiders, excellent night vision. Four of a wolf spider's eight eyes have a tapetum lucidum.

Animals that have a tapetum lucidum include deer, dogs, cats, cows, horses, sheep, owls, bears, some fishes, weasels, frogs and some spiders. Animals can sometimes be identified by the color of their eyeshine. Bobcats and raccoons have yellowish eyeshine while members of the dog family have white eyeshine. Owl eyeshine is red and bears and skunks have amber eyeshine. Wolf spiders have green eyeshine. You can see a lot of tiny spots of green eyeshine if you shine a flashlight over a grassy area at night!

Photo: CC-BY Mark Orfila at Flickr.com

Autumn
is a great time to be outside

BE OUTSIDE
IDAHO CHILDREN IN NATURE

Photo: CC-BY Karly B at Flickr.com

All the colorful leaves make a wonderful backdrop for a walk outdoors. How many colors can you find? What kinds of trees turn what colors? Bring some paper and crayons or colored pencils outside with you to make leaf rubbings. Draw a picture of the most colorful tree you find.

After the leaves fall off the trees, take a walk and look for bird nests that were hidden by the leaves. If you find a nest within easy reach, take a closer look. What is it made of? Is it tightly woven or kind of messy? How big is it and what kind of bird do you think used it? Make a map of where you find nests. Check on them through the fall and winter to see if they last until spring.

Squirrels also make nests that you can look for in the trees. Squirrel nests are called dreys. They look like a messy bunch of leaves and sticks stuck high up in a tree. The presence of dried leaves tells you that the nest belongs to a squirrel, not a bird. Squirrels often have several dreys in their territory.

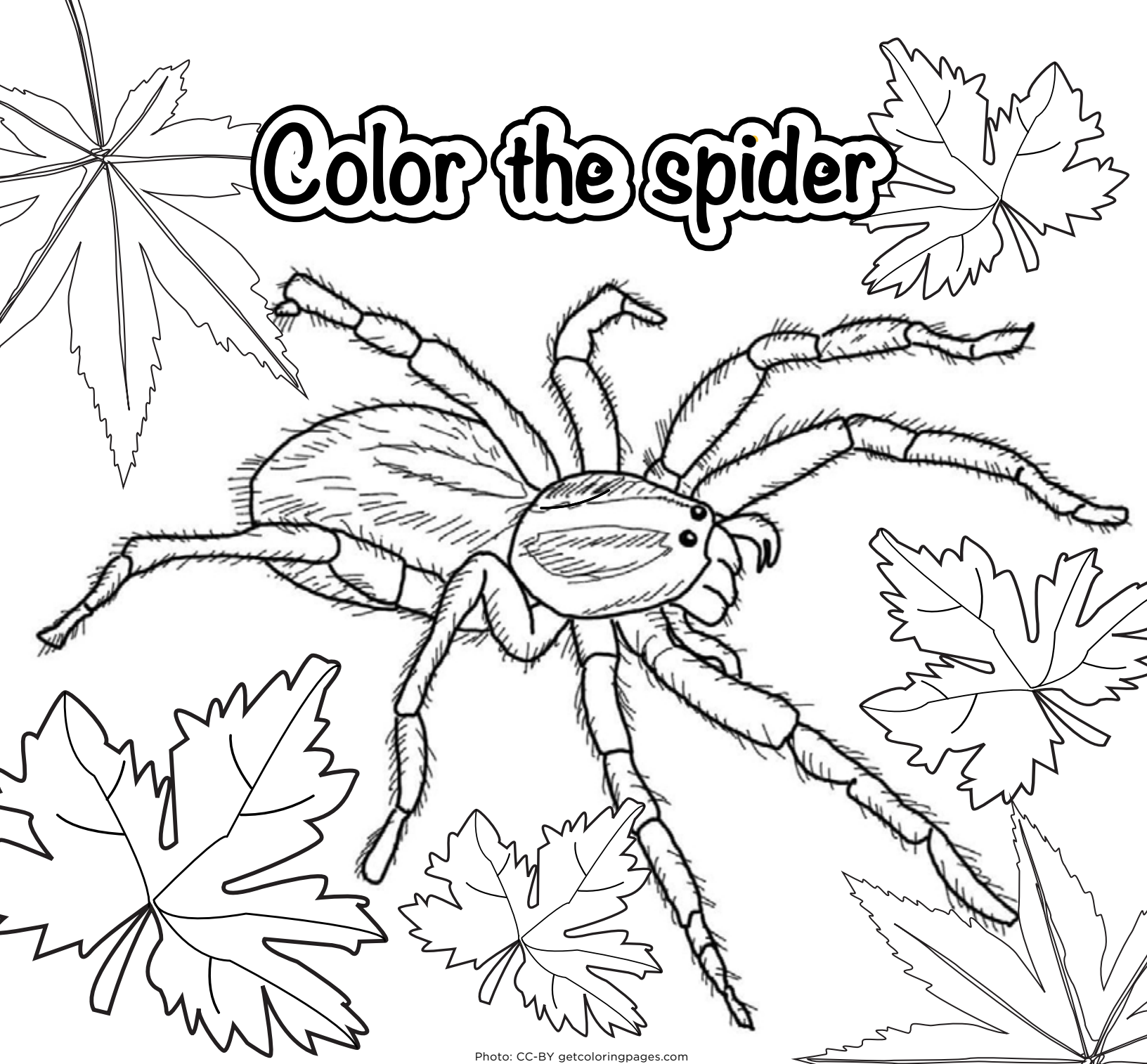
If you live in a higher elevation area, look for the middens of red squirrels. These are large piles of conifer cone scales and nut shells. Red squirrels cache (cash) their food, often in underground burrows. When it comes time for a snack, the red squirrel brings food from its cache and eats it, usually in the same place every day. The result of all this daily eating and dropping of leftovers is a midden. If you find one, you know red squirrels are living nearby.

Autumn is also a good time to look for "buck rubs." In early fall, buck deer scrape the velvet off their antlers by rubbing them along small trees. This scraping and rubbing can take the bark right off young trees. The tree's trunk will have long stripes where the bark is gone. You can often find these rubs in stands of small trees. The rubs are also a way for bucks to leave their scent. Hunters know that buck rubs are a good sign of deer activity in an area.

Autumn is a time of crisp temperatures, bright colors and a lot of wildlife activity. Get outside and see what you can observe before winter's snow blankets the land.

Photo: CC-BY Tim Jasinski at Flickr.com

Color the spider



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Wildlife Express

Volume 37 • Issue 2
Wolf Spider
October 2023

Wildlife Express is published by the Idaho Department of Fish and Game

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WE WOULD LIKE TO HEAR FROM YOU!

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