But Why: A Podcast for Curious Kids

Why Do Lions Roar?

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[Jane] This is *But Why: A Podcast for Curious Kids* from Vermont Public Radio. I'm Jane Lindholm. This is a podcast driven by you, our listeners. Every two weeks we answer questions from curious kids just like you all over the world on any topic. Yeah, truly anything. But one of the things you send us a lot of questions about is the animal world.

You are really curious about all the creatures that live on this planet, and we think that's really cool. So today we're going to answer questions about six of those creatures: lions, crickets, deer, porcupines, hedgehogs, and jellyfish.

What do those animals have in common? Well, nothing that I know of. So let's just get to our first question.

[Isla] My name is Isla, and I'm four years old and I live in Regina. My question is why do lions say roar? Thank you. You can start the show.

[Olivia] My name is Olivia, and I'm from Helena, Montana and I'm five. Why do lions roar?

[Clive] Hi. My name's Clive, and I live in Phoenix, Arizona. And my question is why do lions always roar?

[Jane] For answers, we turn to Paola Bouley of Gorongosa National Park in Mozambique.

[Paola] Why do lion's roar? Lions like to live in very large wild areas that are full of forests and rivers and grasslands. But a lion's roar is very loud and powerful and can travel through the air for a long way at night. So even though different lions might be far from each other, when they all begin roaring at night, all the other lions get to know which other lions are close by. Lions are social. They live in groups. And so it's very important they communicate with each other and know where everyone else is, and that's why lions roar.

[Jane] That's such a great sound, isn't it? Thanks for your answers, Paola. In the background, as Paola was talking, you might have been able to hear some insects, and insects calling at night sparked a question from two of you.

[Annalise] Hi. My name is Annalise, and I live in Menomonee, Wisconsin and I'm six years old. And I want to know why crickets chirp.

[Jack] Hi. My name is Jack. I'm four years old and I live in Seattle. And my question is why do crickets chirp?

[Jane] We turned to Kent McFarland at the Vermont Center for Ecostudies to answer this one.

[Kent] I'm a research biologist and I like to study insects and all kinds of other flying things.

[Kent] The thing about crickets I love the most is it reminds me of summer. And it only happens at nighttime when they chirp. And a lot of people think that the chirping comes from their legs, but it actually comes from their wings. They put their wings together, and one wing has what's called the rasp. And it looks basically like a comb that you'd comb your hair with. And the other part of the wing has a scraper, and they take the one wing and scrape it across the rasp, just like you do with your finger across the comb that you comb your hair. And they do it really fast. And so it makes that chirping noise. And that's how they talk to each other. And it's mostly at nighttime when you hear them. It's mostly the males that are doing that. And they're either telling other males that, "Hey, this is my territory. You probably shouldn't come over here." Or they're searching for a female so they can start a family, and so they just chirp and chirp and chirp, advertising themselves until a female will come over. And that's pretty much why they do it. The cool thing is that some crickets, especially tree crickets, the kind you'll hear up in the canopy of trees, have been known to be used as thermometers. So you can actually tell what the temperature is outside with them, because when it's really cold out in the evening, they'll chirp much more slowly. And when it's really warm out in the evening, they chirp much more quickly. So for a certain kind of cricket called the snow cricket, which is up in the trees, up in the canopy in much of North America, you can actually get out a timer and time 13 seconds and count how many times they chirp in 13 seconds and then add 40 to it. And that is approximately the temperature outside while they are chirping. So they're built in thermometers.

[Jane] Thanks, Kent. Here's a question about another creature that spends time in fields and woods.

[Violet] Hello. My name is Violet. I'm four years old and I live in Franklin, Wisconsin. And my question is why do deer horns fall out?

[William] I'm William. I'm five years old. We live in Philadelphia, Pennsylvania. My question is why do bucks shed their antlers every year?

Why do deer horns fall out? And why do bucks shed their antlers every year? Maybe you didn't know that all species of deer grow and then shed their antlers every year. What some of you were calling horns are called antlers in deer. If you live in a place where there are deer, sometimes when you're walking deep in the woods, you might find an antler. We asked Vermont naturalist Mary Holland why deer go through all that trouble to grow antlers, only to shed them or lose them every year.

[Mary] Antlers are made of bone and are the fastest growing mammal bone. Bucks use their antlers in the fall to attract female deer or does and to fend off other males from the doe that a buck wants to mate with. You asked why bucks shed their antlers every year. Why might a buck not want to carry two antlers on its head all summer, winter, spring and fall? Antlers are heavy. They weigh between three and nine pounds. Can you imagine what it would feel like to carry almost two bags of sugar on your head all day and all night year round? It takes a lot of energy to carry that much weight. You would have to find a lot of food to eat in order to have that kind of energy. In addition, when a deer is traveling through the woods, his antlers get caught on branches. And this could make walking or running very difficult. When a buck is running from a predator, his antlers slow him down and the predator has a better chance of catching him. Because of these reasons, it makes sense for a buck to shed his antlers as soon as he no longer needs them. Because he uses his antlers only in the fall to attract a doe and to keep other bucks away from her, he has no need for antlers in the spring, summer or winter. Shortly after the fall rut or mating season is over, bucks shed their antlers, usually in December or January. There is a chemical or hormone in a buck's body called testosterone. It controls the growth and shedding of white tail deer antlers. The amount of testosterone in a buck is determined by the length of day. Bucks have low levels of testosterone during spring and summer while their antlers are growing and high levels of testosterone in the fall, just before and during the breeding season when their antlers mature. The amount of testosterone starts to decrease after the mating season has ended in December or January, signaling it's time for the antlers to fall off. From the time they're shed until April, bucks don't have to carry heavy antlers around and can bound through the woods much more easily than when they have antlers. In the early spring, you can see the antlers starting to grow. The bigger the buck and the better its diet, the bigger the antlers will get. Thank you so much for your question.

[Jane] Wow. I found that really interesting. So the chemicals in the male deer's bodies change depending on how long the days are, how much sunlight there is in a day. Bodies are so cool, and so is Mary Holland. Her book is called Naturally Curious, which is just what all of you are too. While we're talking about antlers, I want to add one other thing. The males of all

species of deer grow antlers and then, as we now know, lose them in the spring, but only in one species of deer do females grow antlers too. Do you have a guess about what kind of deer does that? Reindeer. Female reindeer often grow antlers. And while the male reindeer tend to lose theirs by about mid-December, the females don't lose their antlers until spring. So in the wild, only the female reindeer have antlers through the winter. Next, we'll learn how porcupines curl up without poking themselves with their own quills.

[Jane] This is But Why: A Podcast for Curious Kids. I'm Jane Lindholm. Today, we're answering questions you've sent about animals.

There are so many different types of animals in the world, and we get a lot of questions from you about them. So we thought we'd tackle just a few today. Here's a question from Alyssa.

[Alyssa] I'm from Wilmington, Delaware. And I am four. And my question is how can porcupines and hedgehogs stay huddled without poking their skin?

[Jane] Mary Holland helped us answer this one too.

[Mary] Because we have no hedgehogs in the United States, Alyssa, I will tell you about porcupines and how their quills work. As you may know, porcupines have three kinds of hair. They are covered with a thick coat of short fine dark hairs called underfur. Their underfur keeps them warm in winter. The second kind of hair they have is guard hairs. These hairs are up to four inches long and they're very sensitive. Porcupines don't have very good eyesight. So when they are backing down a tree or walking along the ground, their guard hairs can feel where there are branches and trees and other things that they might bump into and they tell the porcupine where to step. The third kind of hair porcupines have is quills. They are hollow, stiff and pointed, and the pointy tip is covered with tiny barbs or hooks. Their quills protect them from most predators. The longest quills are on the porcupine's rump, and the shortest quills are on its cheeks. An individual porcupine may have 30,000 or more quills. Porcupines have quills all over their body except for their belly, but they rarely poke themselves with their own quills. When they're scared or threatened, porcupines curl up in a ball and tuck their head down next to their quillless belly. None of their quills are pressed against other quills. Muscles in a porcupine's skin can raise their quills when they're frightened, and when the danger is passed, the muscles lower the quills. Porcupines usually live alone in their dens, so they don't have to worry about poking another porcupine with their quills. You may have heard that a porcupine can throw its quills, but this is not true. It can slap its tail and a few loose quills may fall out. But in order for a dog or any other animal to get a face full of porcupine quills, its face has to come in contact with the porcupine. When this happens, the porcupine can then loosen its quills

further so that they become stuck in the animal with those little barbs at the tip that has come in contact with them. One might think it would hurt a mother porcupine to give birth to a baby porcupine because of the sharp hard quills. But when a baby porcupine is born, its quills are very soft and bendable so as not to injure the mother. The quills harden within several days of the birth. Thank you so much for your question, Alyssa.

There are no hedgehogs, at least not wild hedgehogs, in North, Central or South America. But some of you in Europe, Asia, Africa and New Zealand are lucky enough to live in places where there are hedgehogs. Like porcupines, hedgehogs don't have quills on their belly, and when they're relaxed, their quills go down just like porcupines. They kind of lie flat, so they're less likely to be poky. But, unlike porcupines, hedgehog quills aren't barbed. They don't have a hook on the end. So while you could get poked by a hedgehog that's in a defensive position with their quills standing up, I mean, probably because you reached your hand out to touch it, those quills won't get stuck in your skin and pull out of the hedgehog like a porcupine's might. Now from land to sea. Three questions about fish.

[Giovanni] Hi. My name's Giovanni, and I live in Denver, Colorado, and I'm nine years old. My question is do fish pee?

[Jo] Hi, my name is Jo Blasi, and I'm the Manager of Visitor Education at the New England Aquarium. Fish do pee. They have kidneys like you and I do to help get rid of waste in their body. But even though it might seem kind of gross, fish pee is actually really nutritious for lots of other animals in the ocean. Things like coral reefs rely on fish pee a lot of times to get the nutrients they need to grow nice and healthy in the ocean.

[Chloe] Hello, my name is Chloe. I am five years old. I live in Georgia, Vermont. My question is what is the fastest fish that can swim?

[Jo] That's a great question. Most scientists think that the fastest fish in the ocean is something called a sailfish. It looks a little bit like a swordfish. Sailfish have been known to swim about 68 miles per hour, which is how fast you might go in your car on the highway.

[Rory] My name is Rory. I'm four years old, and I live in Canada in Chilliwack. My question is what do jellyfish eat?

[Jo] Jellyfish eat lots of different things that they find floating through the water. That could be little bits of plankton, fish eggs, fish larvae, small crustaceans or even small fish. They even will eat other jellyfish sometimes.

[Jane] Thanks to Jo Blasi at the New England Aquarium in Boston for answering questions for us again. And that's all for this episode, but not for your questions. We know you are thinking up new questions for yourselves, your friends and your siblings and the adults in your lives all the time. And we want to hear them. You send us lots of questions about animals and the natural world. And Melody and I always love talking about those things with you. But we want to remind you that we're also happy to tackle questions on whatever you want us to talk about.

So that could mean questions about history or maybe questions about why people do the things they do and behave the way they do. Why society and culture is set up the way it is, or even maybe something you've been hearing about in the news that you don't feel like you totally understand and you have questions and want to know more about it.

So if you have a question for *But Why*, have an adult record it and send the file to questions@butwhykids.org

It's easy to do on a smartphone using a free voice recording app. *But Why* is produced by Melody Bodette and me, Jane Lindholm, at Vermont Public Radio.

Our theme music is by Luke Reynolds. We'll be back in two weeks with an all new episode. Until then, stay curious.