



June/July 2013

Xplor

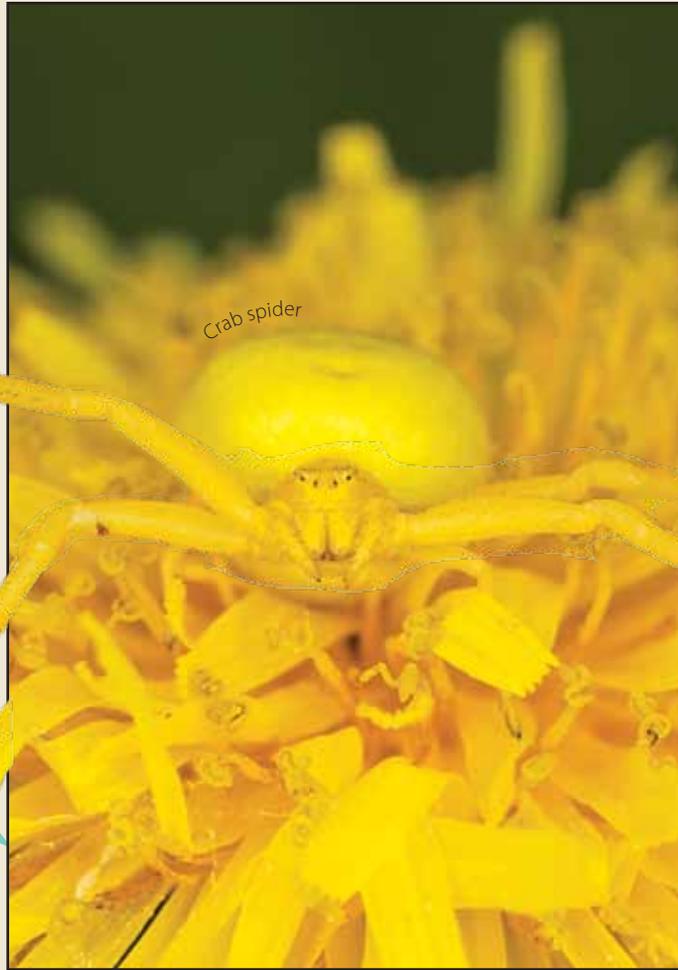
adventures in nature



**PIRATES
OF THE BIG MUDDY**

SHIVER ME TIMBERS AND
HAND OVER THE HOT DOGS!

CONTENTS



Xplor

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ON THE COVER

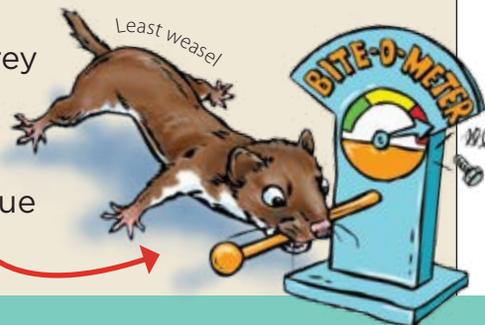


MUDDY PIRATES
by Cliff White

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These critters have an edge in the dangerous game of survival.
- 9 Pirates of the Big Muddy**
Join a gang of pirates as they explore a Missouri River sandbar.

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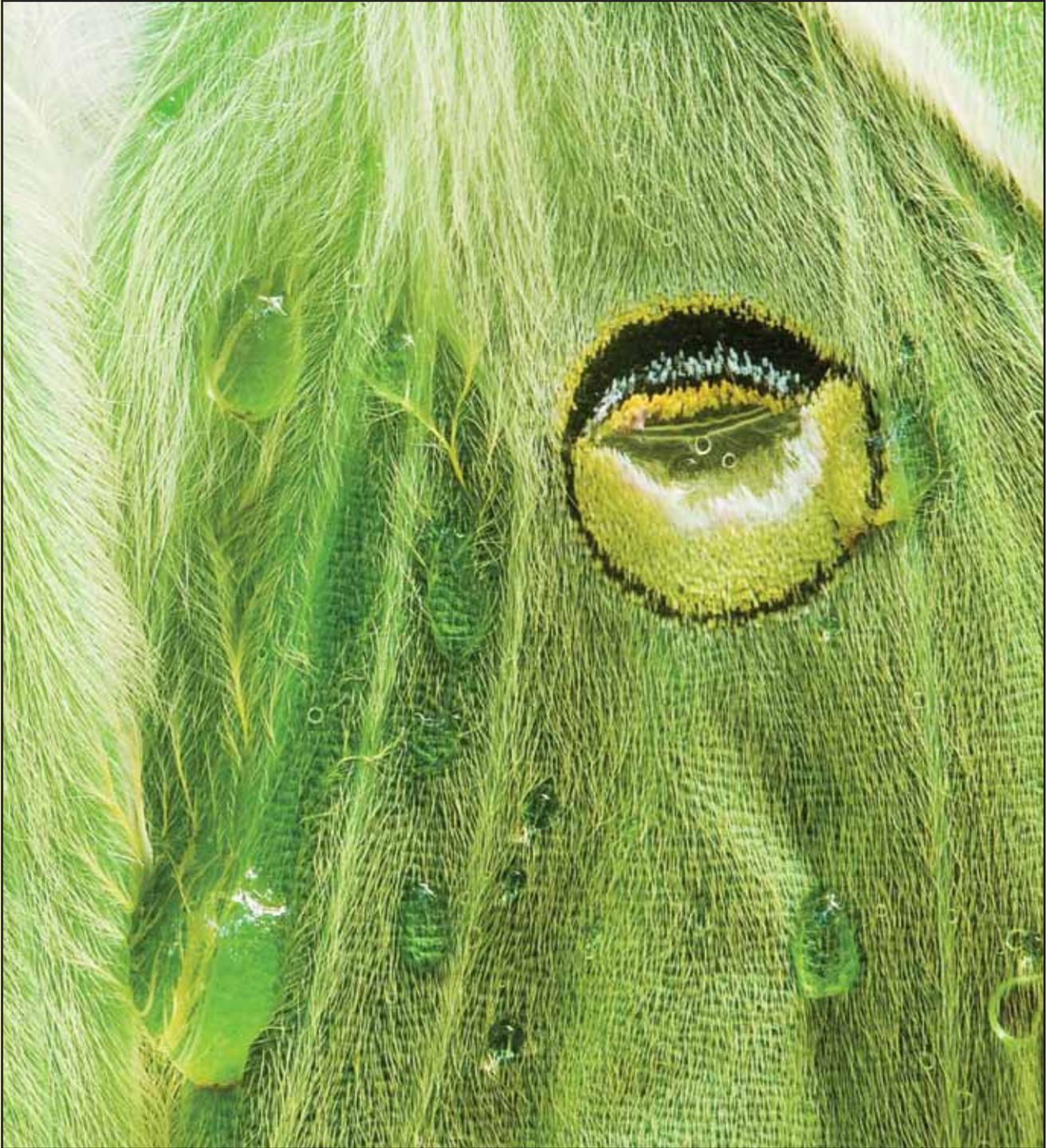


ON THE WEB

Visit xplormo.org for cool videos, sounds, photos, fun facts, and more!

WHAT IS IT?

DON'T KNOW?
Jump to Page 17 to find out.



- ❶ I come out at midnight.
- ❷ I spray “perfume” by moonlight.

- ❸ I have eyes that lack sight.
- ❹ My mouth doesn’t work right.

YOUTH discover

Common carp, Joseph Tomelleri



PAINT with BERRIES

If you find more berries than you can eat — we should all be so lucky — turn some of them into paint. Put half a cup of berries into a bowl and use a fork to smooch them into mush. Stir in ¼ cup of water and pour the mixture through a sieve to strain out seeds. Blackberries make dark purple paint, raspberries make red, and mulberries make pinkish-purple. The paint works best on watercolor paper, but it will stain nearly anything, so be careful!

Blackberries

MAKE DOUGH BAIT

There's tons of fun in the sun for you to discover in June and July. Here are a few ideas to get you started.

Fish turn finicky when the weather gets steamy. Coax carp and catfish to bite with this homemade bait. Cut the crusts off two slices of bread. Spread peanut butter on each slice. Add just enough water to make the bread slightly soggy then squish it up with your hands. To really drive fish into a feeding frenzy, mix in something stinky, such as garlic powder, cinnamon, or bacon grease. Roll the dough into marble-sized balls, pinch a ball onto a treble hook, cast the hook into a pond, and get ready for a fight.

Search for CHANTERELLES

Fungus-finding fun doesn't end when morels vanish in May. Summer offers plenty of fungi to forage for — if you're willing to sweat a bit. Chanterelle (*shan-tur-ell*) mushrooms are easy to identify and yummy to eat. Look for the yellow, trumpet-shaped 'shrooms in oak-hickory forests throughout Missouri. Few mushrooms look like chanterelles, but you should always have an adult double-check your fungi before you feast. For ID tips and recipes, visit mdc.mo.gov/node/4121.



Chanterelles

Don't miss the chance to Discover Nature at

Get soaked searching for mollusks at **MUSSEL MANIA**. Cape Girardeau Conservation Nature Center; Ages 8 and older July 24, 3–8 p.m.; Registration begins July 2 at 573-290-5218.



Learn about blinky-bottomed beetles at **FIREFLY FEST**. Springfield Conservation Nature Center; Ages 7–12 June 27, 8–9:15 p.m. Register at 417-888-4237.



Bag some bushy tails at a **YOUTH SQUIRREL HUNT**. Columbia; Ages 10–15 June 14 and 15 To register, email brian.flowers@mdc.mo.gov.



Mussels from top to bottom: plain pocketbook, Wabash pigtoe, Bleufer

Gray squirrel



ADOPT A STREAM



Streams are nature's blood vessels, and about 110,000 miles of water-filled arteries flow through Missouri. Like human arteries, streams can get plugged up by trash, dirt, and unwanted critters. You can help. Join a Stream Team to keep thriving streams clean and nurse sick ones back to health. Plus, nothing beats splashing in a stream when the sun starts to sizzle. To sign up, flow over to mostreamteam.org.

TAKE A HIKE



Hey you, take a hike! No, really. June 1 is National Trails Day, and thousands of kids and adults will celebrate America's tangle of trails by taking a walk in the woods. Missouri recently was named "Best Trails State," and for good reason. Nearly 700 miles of trails zigzag through conservation areas, including 40 miles of the beautiful and rugged Ozark Trail. To find a trail near you, stroll over to mdc.mo.gov/node/3392.

EXPLORE a SHORE

Summer's a great time to explore a shore, whether it's a pond, stream, or marsh. To get a close-up look at the creatures that live there, duct tape a large kitchen sieve to the end of a broomstick. (Ask your parents before you swipe a sieve!) Swish the sieve through the water — especially around plants and algae — and see what gets trapped in the strainer. Bring a magnifying lens for a better look at itty-bitty creepy-crawlies.



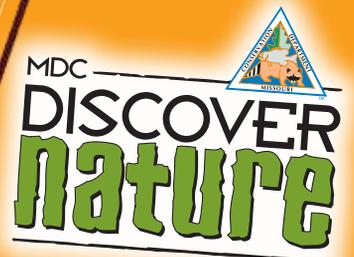
these fun events.

Capture mini lobsters at **FAMILY CRAYFISH CATCHIN'!** Burr Oak Woods Conservation Nature Center, Blue Springs; June 29 10–11:30 a.m. Register at 816-228-3766.



Northern crayfish

Cast a line during **FREE FISHING DAYS.** Statewide June 8 and 9, 2013. For more info, visit mdc.mo.gov/node/3675.



Looking for more ways to have fun outside? Find out about Discover Nature programs in your area at xplormo.org/node/2616.

PREDATOR

VS

PREY

The struggle to survive isn't always a fair fight. Here's what separates nature's winners from its losers.

Illustration by David Besenger

Eastern garter snake

Jumbo Jaws

Special jaw bones allow a snake to stretch its mouth around prey that's much larger than the snake's head. If you had this ability, you could swallow watermelons whole.

Backward Biter

A garter snake's teeth point backwards. Once the snake bites down, the only direction prey can move is toward the snake's tummy.

More Than a Mouthful

When threatened, toads gulp air to swell up like warty balloons. This makes toads too fat for some predators to swallow.

Poisonous Sweat

Toads don't cause warts, but their skin oozes poison. A mouthful of toad toxin can make a predator's heart flutter and, in extreme cases, quit beating altogether.

Whiz Bomb

Predators get a nasty surprise when they catch a toad: The toad pees on them. This tinkle attack makes many animals seek a less disgusting dinner.

American toad

AND THE WINNER IS...

Garter snakes are immune to toad toxin, and they can open their toad-holes wide enough to swallow even fat amphibians. If the garter grabs hold, the toad won't be happy. In fact, it may never be happy again.

You can recycle newspapers, turn kitchen scraps into garden fertilizer, and raise a never-ending supply of fishing bait. All you need are worms and a place to keep them.

How To

HERE'S WHAT YOU NEED

- > **10- to 20-gallon plastic tub with a lid** (Make sure the tub is a solid color, not clear.)
- > **Drill with a 1/4-inch drill bit**
- > **Newspaper**
- > **Two handfuls of sandy soil**
- > **One pound of red wiggler worms** (Search for *Eisenia foetida*

online — that's the scientific name for red wigglers. Don't use worms from your backyard. They won't survive in your worm hotel.)

- > **Kitchen scraps such as vegetables, fruit, pasta, egg shells, and coffee grounds** (Avoid meat and dairy. They will make your worm hotel stink.)

Build a Worm Hotel

HERE'S WHAT YOU DO



- 1 Have an adult drill holes 2 inches apart in the sides of the top half of the tub. This lets in air for your worms. Drill a few holes in the bottom of the tub for drainage.
- 2 Tear newspapers into 2-inch-wide strips. Soak the strips in water, wring them out so they're damp, not wet, and fluff them up. Fill the tub three-quarters full with strips.
- 3 Sprinkle soil over the strips. Worms don't have teeth, so they eat grit to grind their food.
- 4 Scatter worms over the strips.
- 5 Wait a couple days for your worms to settle into their hotel. Chop a cup of kitchen scraps into pieces

and scatter the scraps throughout the tub. Cover the scraps with newspaper strips and put the lid on the tub.

- 6 When the worms eat all the scraps, add more. If the bedding gets dry, spray water on it.

In a couple months you'll notice extra worms in your hotel. Use a few for fishing or give some to friends to start new worm hotels. You'll also see lots of black "soil" in the tub. Gardeners call these castings. You might call it worm poop. Whatever its name, it's great for your garden. To separate worms from their homemade fertilizer, place the tub in the sun for 20 minutes. The heat and light will force worms deep into the tub so you can scoop out the top few inches of poop, uh, fertilizer.

HIDING

IN PLAIN SIGHT

by Matt Seek

Nature is full of disappearing acts. Many animals have skin, scales, feathers, or fur with colors and patterns that blend in with their surroundings. Other animals are shaped like leaves, sticks, and even bird droppings. A few animals change color to match whatever background they happen to be on at the time. The ability to blend in is called camouflage, and it gives animals an edge in the dangerous game of survival. Many camouflaged critters live in Missouri. See if you can spot them hiding in these pictures.

CRAB SPIDER

Next time you sniff a flower, a sneaky hunter may be hiding right under your nose. Crab spiders don't weave webs to catch prey. Instead, they wait patiently on flowers, relying on camouflage to stay hidden. When a bee buzzes in, the spider pounces.



TULIP-TREE BEAUTY

Moths lead a tough life. At night, they dodge bats. During the day, they dodge birds. The tulip-tree beauty has evolved one beauty of a solution to solve the problem of being eaten. When it flutters onto a tree trunk, it becomes nearly invisible.

KATYDID

Katydid are often heard but rarely seen. That's because the leaf-loving insects are master mimics. Not only are most katydids shaped and colored like leaves, but many also have veins on their wings that look nearly identical to the veins on a leaf.



EASTERN SCREECH-OWL

After a hard night of hunting, all a screech-owl wants to do is catch some shut-eye. But hawks would love a screechy snack, and blue jays swoop and squawk to drive screech-owls away. What's a sleepy bird to do? Close its big yellow eyes and pretend to be a branch.





EASTERN RED BAT

Not all bats sleep in caves. Red bats hang out in trees — literally. After a night of bug busting, a sleepy bat finds a branch and dangles upside down, doing its best to look like a leaf. Most bats go a step further, hanging by just one foot so they twist and flutter like foliage.



AMERICAN BITTERN

Pay no attention to me, I'm just a clump of cattails. When predators come prowling, bitterns don't flinch a feather. Instead, the brown-streaked birds freeze and point their beaks skyward. Sometimes they rock back and forth, hoping to look like reeds swaying in the breeze.

A close-up photograph of a gray treefrog clinging to the rough, textured bark of a tree trunk. The frog's skin is a mottled gray color with dark spots, blending perfectly with the surrounding bark. The frog is positioned vertically, facing upwards, with its front legs tucked up towards its chest and its back legs extended downwards. The bark is deeply furrowed and has a natural, weathered appearance with some small green moss or lichen spots scattered across it.

GRAY TREEFROG

Gray treefrogs live aloft, using their sticky toes to climb high into trees. The snack-sized amphibians have a handy trick to hide from hungry hunters. As they climb, their skin changes color, turning gravel-gray, bark-brown, or leafy-green to match whatever the frog is crawling on.

Pirates



The Sandbar - Here Be

Missou



Not all treasure lies buried in the sand. Maggie captures a monarch butterfly that touches down on the sandbar. After a close inspection of the monarch's jewel-like wings, she lets the butterfly flutter away unharmed.



of the Big Muddy

Fun!

by Matt Seek
photos by Brett Dufur and Cliff White

A hoy, me hearties! Unfurl the main sail and cast off those lines. We're set to weigh anchor with a crew of young pirates as they search for adventure and booty — that's pirate talk for treasure — on a sandy island in the middle of the Big Muddy. *Arrrr!*

ri
River



The Missouri River, nicknamed the “Big Muddy,” prompted writer Mark Twain to say, “The water is too thick to drink and too thin to plow.” Although he might be right, few pirates can resist the river’s cool, wet mud squishing between their toes.

If you anger the captain, you pay the price — especially if the captain’s your sister. Gabe discovers that below its sun-scorched surface, sand feels wet, cool, and refreshing. Maybe being buried isn’t so bad.



The river washes ashore all sorts of things for pirates to pluck from the sand: petrified wood, nuggets of milky white quartz, Indian arrowheads, even bones from woolly mammoths and other creatures long since gone.



Mermaids they're not. Maggie mans a magnifying glass to contemplate her catch. About 60 kinds of fish live in the stretch of Big Muddy flowing through Missouri, including thumb-sized minnows and trashcan-sized catfish.

The river holds many treasures — if you know how to find them. Mack and Maggie use a net to seine tiny, silverly fish from the muddy, brown water.



Only scallawags — that's pirate talk for bad people — leave litter behind. Maya and Quincy scour the beach for bottles and other trash. When they're done, the only thing left on the island is footprints.



A day spent plundering makes the crew hungry. Roasting hot dogs over a driftwood fire cures growling stomachs and grumpy pirates.



Loaded with loot, the pirates sail off. Nora Grace relaxes on the voyage home, tired but happy from a fun day of treasure hunting.



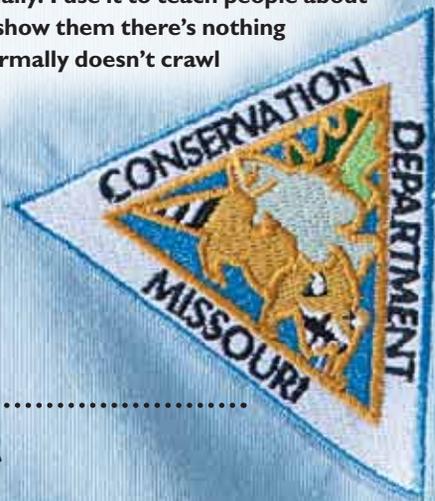
Missouri tarantula

WILD JOBS

NATURALIST **TRANÁ MADSEN** WRANGLES SPIDERS, SNAKES, AND SALAMANDERS TO CONNECT PEOPLE WITH NATURE.

Q: DID YOU KNOW THERE'S A LARGE, HAIRY SPIDER ON YOUR FACE?

A: Yes, actually. I use it to teach people about spiders and show them there's nothing to fear. It normally doesn't crawl on my face.



Q: ARE ALL THE NATURE CENTER ANIMALS THIS WELL-BEHAVED?

A: No. A bullsnake once slithered around my waist and into my belt loops. It didn't want to come out. Someone had to help me pull the snake through — just like a belt!

Q: HAVE YOU EVER BEEN BITTEN BY A SNAKE?

A: When I worked at a preschool, parents never asked if I'd been bitten by their child, yet it happened often. I've been a naturalist eight years and give 150 programs each year. Never once has a snake bitten me, but people ask about it all the time.

Q: WHAT'S THE BEST PART OF YOUR JOB?

A: Helping people connect with nature. I once helped a teacher who was afraid of snakes find the courage to touch one. Her whole class cheered.

Q: WHAT ELSE DO YOU DO BESIDES NATURE PROGRAMS?

A: I play detective a lot. People come to me with questions, and I try to answer them. One gentleman brought in bones and wanted to know what they were. I finally figured out they were throat teeth from a fish called a carp.

Q: WHY DID YOU BECOME A NATURALIST?

A: Taking care of nature runs in my family. My dad, a wildlife biologist, encouraged and inspired my love of the outdoors. He said, "You would be great as a naturalist."

STRANGE, but TRUE!

YOUR GUIDE TO ALL THE
UNUSUAL, UNIQUE,
AND **UNBELIEVABLE**
STUFF THAT GOES ON IN NATURE



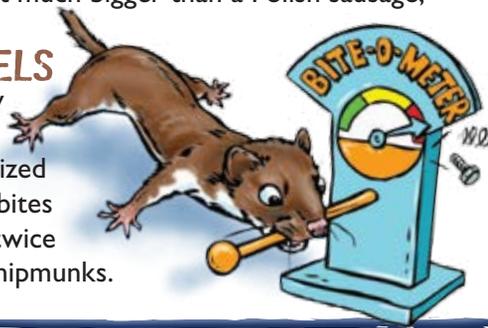
EASTERN KINGBIRDS

rule. To protect their nests, the robin-sized birds dive-bomb squirrels, hawks, and people. They've even been known to knock blue jays out of trees.

Although they're not much bigger than a Polish sausage, pound for pound,

LEAST WEASELS

bite harder than any North American mammal. The pint-sized predators need big bites to take down prey twice their size, such as chipmunks.



KATYDIDS

have ears on their legs, just below their knees. The insects, which are related to grasshoppers and crickets, pinpoint sounds by raising one leg and then the other.



The **SPIDERS** living in a patch of woods the size of a football field eat more than 80 pounds of insects a year. That many bugs would weigh as much as 320 quarter-pound hamburger patties.

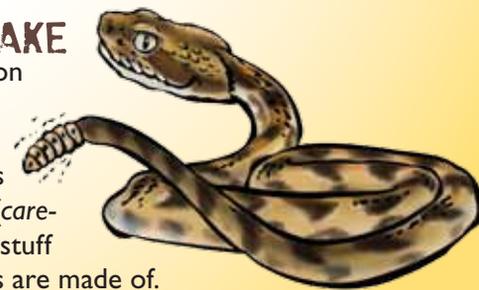
NIANGUA DARTERS

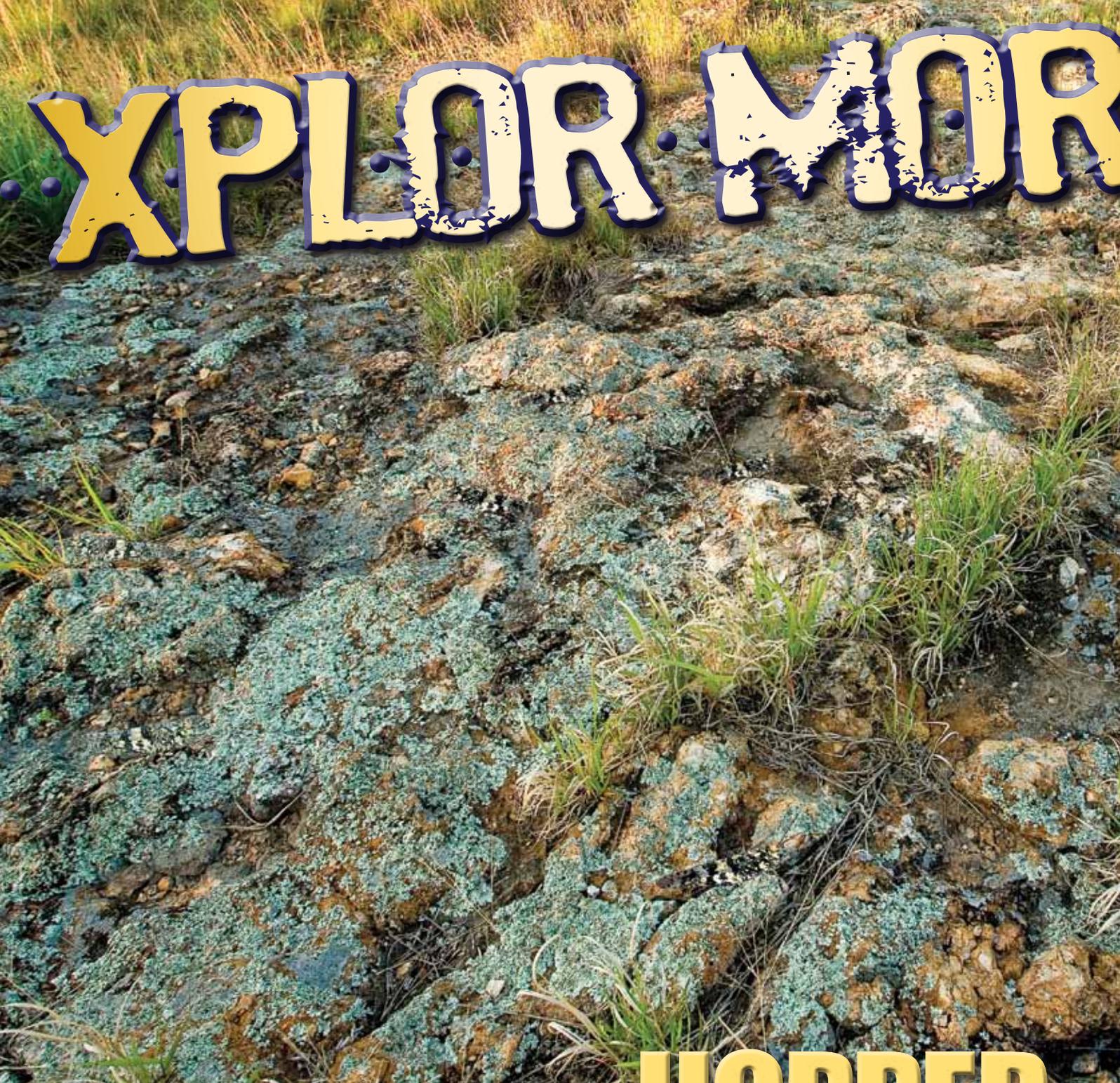
are homebodies. The only place on the planet you'll find these colorful, minnow-sized fish is in a handful of streams in south-central Missouri.



A RATTLESNAKE

adds a new section to its rattle each time it sheds its skin. The rattle is made of keratin (*care-uh-tin*), the same stuff human fingernails are made of.





XPLOR MOR

HOPPER HIDE-AND-SEEK



Lichen grasshoppers are masters of camouflage.
How many hoppers can you find hiding in the glade pictured above?

CAMO CRITTERS

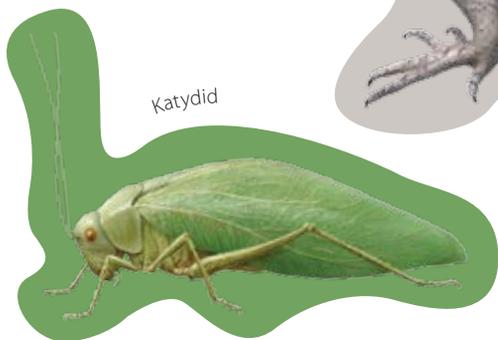
These animals have something in common: They're great at hiding. To see for yourself, cut them out and have a friend take them outside to hide them. Ask your friend to hide them in plain sight — it wouldn't be fair to put them under a rock or bury them in the soil. Once they're hidden, go outside and see how many you can find.



House wren



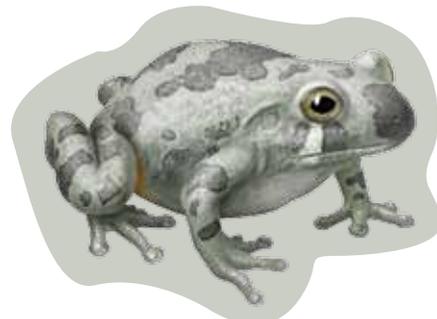
Prairie lizard



Katydid



Spring peeper



Gray treefrog

WHAT IS IT?

— FROM PAGE 1 —

To scare predators, lunas have wing spots that look like large, glaring eyes. Adult lunas lack mouths and can't eat. The only thing fueling their flight is fat put on when they were caterpillars. When the fat runs out, they die.

Luna moths flutter April through August, but many folks never see them because lunas come out about midnight. Female lunas attract males with pheromones, which are like perfumes.



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FREE TO MISSOURI HOUSEHOLDS

CRITTER CORNER

Yellow-Crowned Night-Heron



Is that a crayfish stuck in your craw? In coastal areas, yellow-crowned night-herons focus their feeding on crabs. Here in Missouri, they target crayfish. Yellow crowns have shorter and thicker beaks than most herons. Although they swallow small prey whole, their burly beaks come in handy to pluck off pincers and crush shells of larger, crankier crustaceans.