

PIONEER EDITION

NGPIONEER.ORG

OCTOBER 2010

NATIONAL GEOGRAPHIC Explorer!



Kaboom! 10
Thirsty Planet 18

Weird and Wonderful 2



LIFE SCIENCE

Comprehension Strategy: As you read, use the writer's words to create pictures in your mind of these weird and wonderful animals.



When Weird



Is Wonderful

By Barbara Seeber

You know you're in trouble if you come face-to-face with a cassowary bird. It lives in rain forests in Papua New Guinea and Australia. It can't fly, but it runs really fast. It can't sing, but it's really loud.

Then there are its looks. See its head? It has a crest that looks like a horn. The crest is called a casque. When this big bird ducks its head, watch out! It's ready to charge.

Its head isn't a weapon, though. Its feet are! One kick can be deadly.

Unlikely Looks

These body parts and ways of acting are called **adaptations**. They help living things survive. Some help them face danger. Others help them hide or find food. Let's learn about some weird and wonderful animals.

First, check out the aye-aye. This lemur is small. You could hold it in your hand. It has round, wide eyes. Its large ears look like spoons. Its fur sticks up in tufts. It has a long finger on each front paw.

Tapping on Trees

The aye-aye lives on Madagascar. It eats grubs. Grubs are baby insects that look like worms. The aye-aye is a perfect grub hunter. First, it taps its long finger on a tree. Why? That's where the grubs live.

Clonk! Clonk! Clonk! The aye-aye hears a hollow space inside the tree trunk. It chews into the wood. Then it uses its long finger to grab the grubs. It gobbles them up.

A stare from this cassowary might stop you in your tracks!



Wired for Worms

The platypus is even odder. It has a bill like a duck. It has webbed feet like an otter and a tail like a beaver. It's one of the only mammals that lays eggs.

The platypus hunts for food in muddy water. It closes its ears, eyes, and nose. That keeps water out. So how can it find dinner?

Its nose knows. Even when it's closed, its nose senses worms in the mud. It uses its feet and tail to dive. Its bill digs up worms. Its strange body parts are perfect for finding its food!



This aye-aye uses a long finger to pull grubs from inside trees.



This duck-billed platypus dives in murky waters, hunting for food.

Big Faker

A frilled lizard has a special way to scare off predators. Birds and snakes like to eat it. How does it fight back? It doesn't! It uses tricks instead.

This big lizard stands on its back legs. It spreads out a big flap of skin around its neck. It opens its yellow mouth wide and hisses. If that doesn't work, the lizard runs away. Its legs wobble as it runs. It looks funny, but it's fast!

Finding Fish

A bird called a shoebill has a different problem. It lives in Africa. It eats a fish called a lungfish.

In the summer, lakes dry up. The lungfish burrows into the mushy mud. It can survive because it can breathe air. It's not safe from the shoebill, though. The bird's big bill is super strong. It digs in the mud. Sometimes, it almost stands on its bill! Then it grabs a squirmy fish and holds tight.

Don't bother this lizard! When it gets upset, it flares a flap of skin around its neck. It hisses, too.





A shoebill uses its big bill to find lungfish.

Stomping on Snakes

The secretary bird lives in Africa, too. It eats snakes. Sometimes the snakes are poisonous. That's a dangerous dinner! Don't worry, though. It is an expert snake hunter.

This bird has long legs. It hunts for food in tall grass. It can walk 32 kilometers (20 miles) a day. When it finds a snake, it attacks.

It spreads its wide wings. Feathers rise from the back of its head. These flapping feathers protect it from snake bites. The bird stomps on the snake. It tosses it in the air. Then the bird eats its snake snack.

A secretary bird uses its long legs to help it hunt.



Hiding Out

A leafy sea dragon is covered in flaps of green and yellow skin. It looks just like floating seaweed. It blends in. That helps it stay safe. Its looks fool predators so they leave it alone. That's great **camouflage!**

Take a closer look. Do you see its long head and wavy body? The sea dragon makes the most of its leafy looks. It sneaks up on its **prey**. Watch out, sea lice!

Safe Sunbathing

A waxy monkey tree frog has special skin, too. Most frogs need cool, wet places. Too much sun dries out their skin. This frog likes to snooze in the bright sun. How can it do that?

It oozes a waxy goo from its skin. The frog spreads the wax all over its body. It looks like it's putting on sunscreen. The wax traps water in and on the frog. The frog stays cool and moist, even in the hot sun.



This leafy sea dragon hides from predators. It blends in with the seaweed around it.

Cloaked in Mystery

The vampire squid may have the weirdest adaptation of all. It lives deep in the ocean. It's barely bigger than your hand.

Loose skin connects its eight arms. Spines line each arm. The spines are soft, though they look scary. When it's threatened, the vampire squid curls its arms around its body. This puts the spines on the outside. Now it looks like a spiny ball. It doesn't look good to eat. Predators stay away. Wouldn't you?

Adaptations can be weird and wonderful. They help animals survive.

WORDWISE

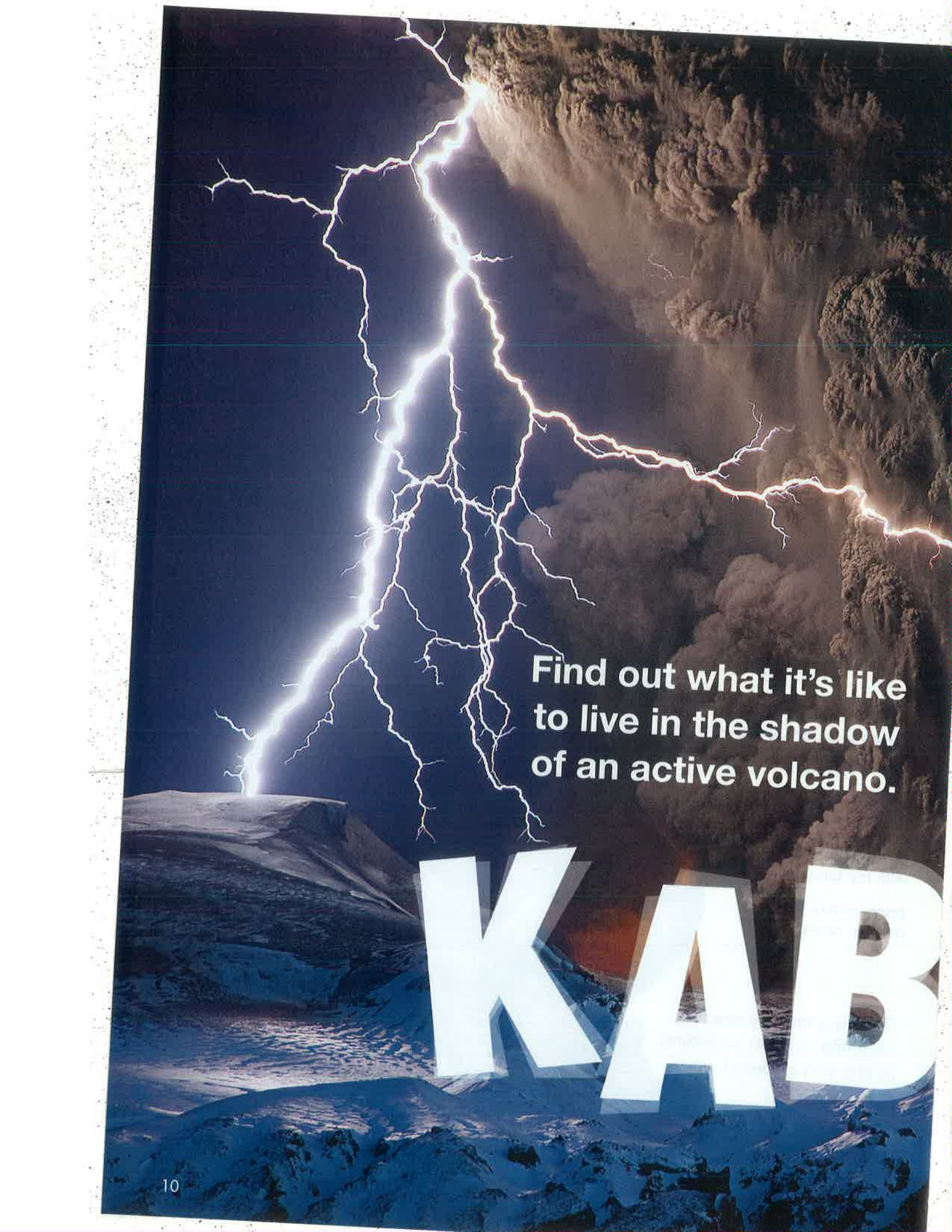
adaptation: behavior or body part that helps an animal survive

camouflage: blending in with the surroundings

prey: animal eaten by another animal

This waxy monkey tree frog sits in the sun after protecting its skin with a special wax.





**Find out what it's like
to live in the shadow
of an active volcano.**

KAB



Comprehension Strategy: As you read, think about what you know about natural disasters and how people can prepare for them.

BOOM!

by Michael E. Ruane

In Iceland, Hanna Lara Andrews and her family slept. All was peaceful. Suddenly, the phone rang. “Get out!” a voice yelled.

It was 2 a.m. A nearby **volcano** had just erupted. Hanna had no time to be scared. She gathered her family and ran to the car.

Active Earth

Local people call the volcano “Eyja.” Hanna’s family has lived near it for a long time. It had never caused trouble for them before.

Now it spewed fire. **Lava** oozed. Ash flew into the sky. It came from deep within Earth. What caused it? It helps to know more about Earth.

First, Earth has three layers. They are the **crust**, the **mantle**, and the **core**. The crust covers Earth. It is broken into large pieces called plates.

Deep Heat

The mantle lies under the crust. This layer is really hot. It melts some rock. This **magma** flows like molasses. The core is in the center of Earth.

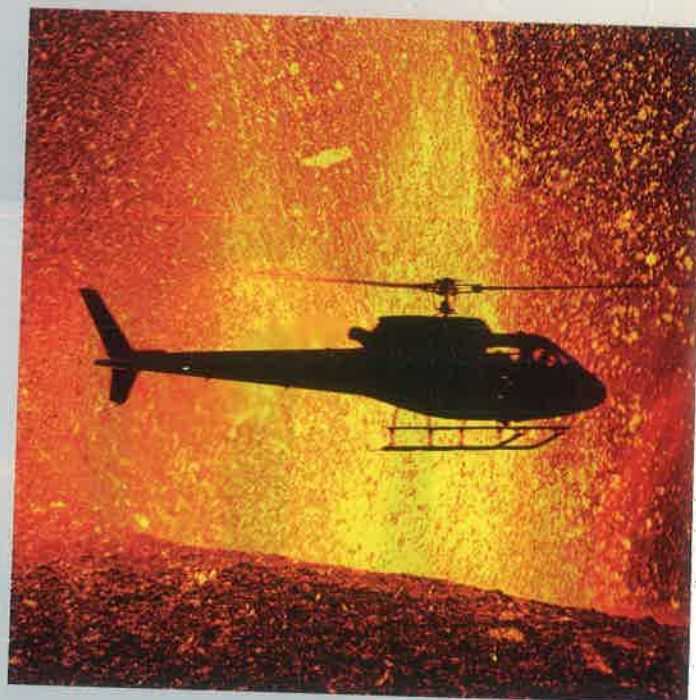
The plates float on magma. They move slowly all the time. Plates can bump, scrape, or spread apart. Under Iceland, they move apart.

Volcanoes can rise between two plates. They look like mountains. They’re really openings to the mantle.

Lava and Floods

Pressure inside Earth makes magma rise up into a channel. When it flows onto the crust, it’s called lava. Lava is so hot, it can burn everything in its path.

Hanna didn’t worry about the lava, though. She feared floods. Why? A glacier, or thick sheet of ice, covered Eyja. The lava melted the ice, turning it into a raging river. Hanna worried a flood could wash away her farm.

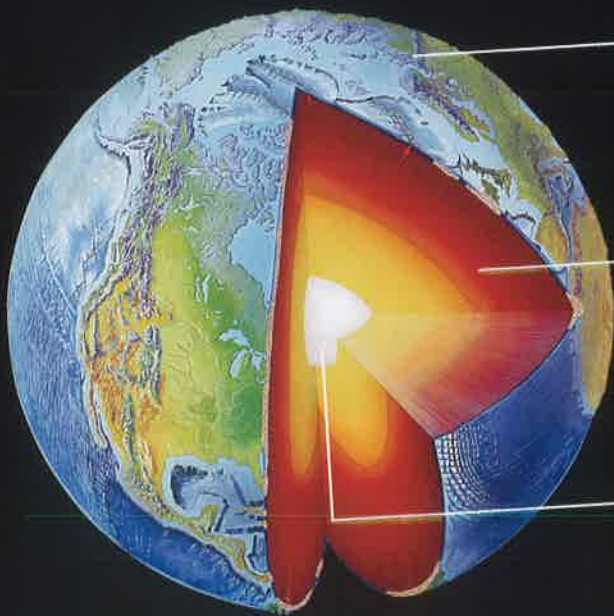


A helicopter flies near the erupting volcano in Iceland.

Fiery lava spurts from Eyja.

Thin-skinned

If Earth were the size of an apple, the crust would only be about as thick as the apple's skin.



Crust

At its deepest, the crust is only 70 kilometers (43 miles) deep.

Mantle

Magma comes from the mantle. It is 2,900 kilometers (1,800 miles) deep.

Core

The inner core of Earth is solid metal.

Lightning sparks in the ash
as it rises from Eyja.





Horses are herded to safety away from the volcanic ash.

A Sleeping Giant Wakes

All of this happened quickly. Eyja was quiet. Then it changed. It blasted out steam, lava, and ash. It became active.

Some volcanoes don't change. They are extinct and don't erupt any more. Others are dormant, or sleeping. Eyja slept for almost 200 years. Then, *Kaboom!* It erupted.

With little warning, Hanna and her family left everything behind. She worried about her 60 dairy cows. Who would milk them? Last time Eyja awoke in 1821, it erupted for 14 months. The cows couldn't wait that long. What was she going to do?

In the Thick of It

Hanna stayed in a safe spot. She could hear deep rumbles from the volcano. She saw lightning flash over the volcano. It lit up the ash cloud!

Something smelled bad, too. Was it rotten eggs or slimy seaweed? No. It was foul-smelling gas coming from deep inside the volcano.

Eyja's ash cloud rose 11 kilometers (seven miles) into the sky. It looked like smoke. It wasn't. Ash is made of tiny bits of rock, glass, and sand. This gritty stuff is bad to breathe. A lot of ash fell to the ground. It covered everything.



Sheep take shelter from the ash cloud. Ash coats their fur.

Homeward Bound

The next morning, Hanna saw melted ice flow down the volcano. The floods had started! They washed out roads. They flooded homes.

It was risky. Yet some of Hanna's family headed home. Ash turned day into night. It was hard to see. At last, they arrived. The farm wasn't flooded. The animals were okay.

They went right to work. They wore masks so they didn't breathe in the ash. They put the animals in the barn to keep them safe from ash, too.

After milking the cows, they had a new problem. With roads closed, they couldn't deliver the milk. Meanwhile, the ash cloud blew toward Europe.

A woman watches the eruption from a safe distance.





Volcanic ash settles on cars and roads in Iceland.

Life Interrupted

Airlines in Europe stopped flying. Ash could damage jet engines. People took trains, boats, or cars, instead. Some simply waited for the ash to go away.

Fruits and vegetables couldn't get to markets. Airmail couldn't cross the ocean. People canceled trips. Planes stayed on the ground for days. Eyja caused problems all over the planet!

Looking Ahead

Now, months have passed. Eyja seems to be sleeping again. Hanna's life has returned to normal. Roads and homes are being repaired.

Still, many people worry. There's a bigger volcano nearby. Its name is Katla. Sometimes, Katla erupts after Eyja does. People are watching these volcanoes. They wait and wonder. What will happen next?

WORDWISE

core: center of Earth

crust: outer layer of Earth

lava: melted rock from a volcano

magma: melted rock inside a volcano

mantle: layer of Earth under the crust

volcano: hole in the ground where lava erupts

