

SKY-HIGH POOLS

Climb up for a closer look at life
in some treetop water tanks.

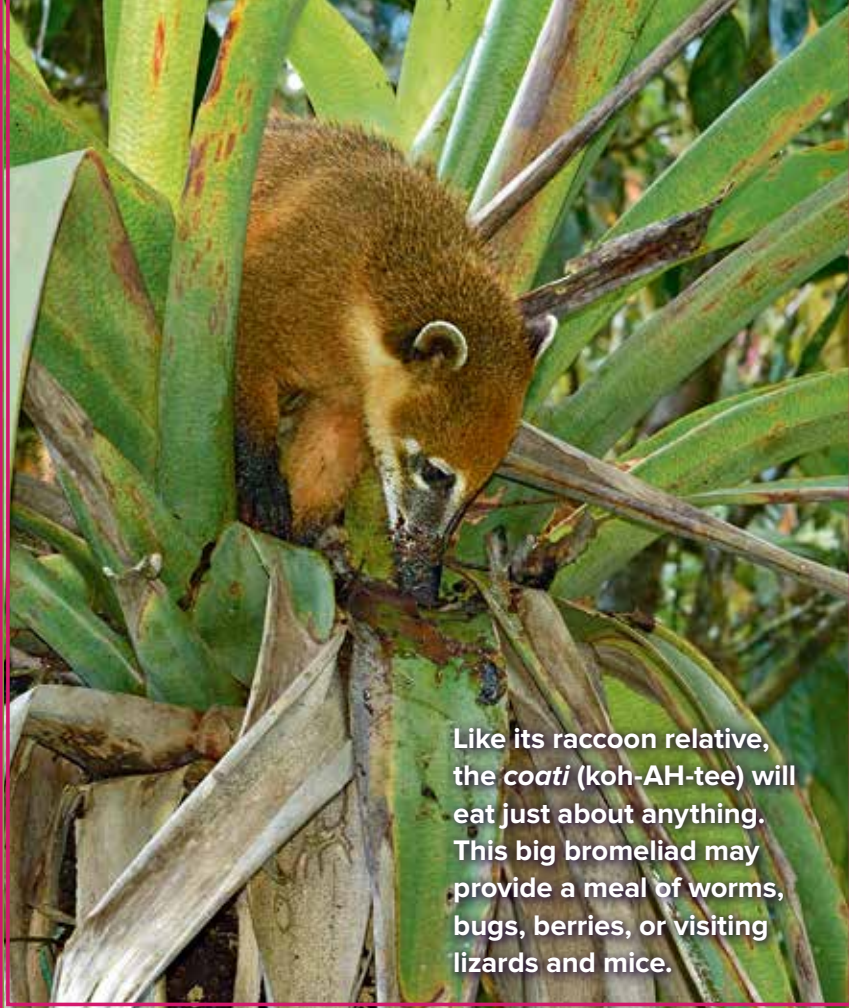
BY DEBORAH CHURCHMAN AND ELLEN LAMBETH

CHECK OUT THIS BRANCH,
high on a tree in a tropical forest. Those thick, pale-green leaves and pink flowers you see are not part of the tree. They're *bromeliads* (broh-MEE-lee-adz).

Most bromeliads are *epiphytes* (EH-puh-fites)—plants that grow on trees. The stiff, waxy leaves on this and many other bromeliads grow to form a cup in their center. The cup collects and holds rain and dew drops. That's why they're called tank bromeliads: They hold water where tree-dwelling animals can get to it. Turn the page to meet some visitors to these treetop tanks.

Here's a bromeliad you should know! Pineapples are the fruits of a bromeliad that people grow as crops.





Like its raccoon relative, the *coati* (koh-AH-tee) will eat just about anything. This big bromeliad may provide a meal of worms, bugs, berries, or visiting lizards and mice.

THE HIGH LIFE

The tropical forests in Central and South America have huge trees that grow high into the sky. Their top branches reach toward each other to

form a roof-like layer called the *canopy*. Below the canopy, the forest may be dark and dry. But sunlight brightens the canopy, and rain and clouds provide moisture. All that



This *wandering spider* isn't wandering far from its bromeliad hideout. If it's lucky, a meal such as a grasshopper might hop near.

makes tropical treetops a very lively place.

MAGICAL MINI-WORLDS

Some treetop tanks are tiny cups, while others are like big bowls. A single tank bromeliad may hold as much as two gallons of water! Leaves and other pieces of plants plop into bromeliad pools. Wind blows in dust and other forest bits.

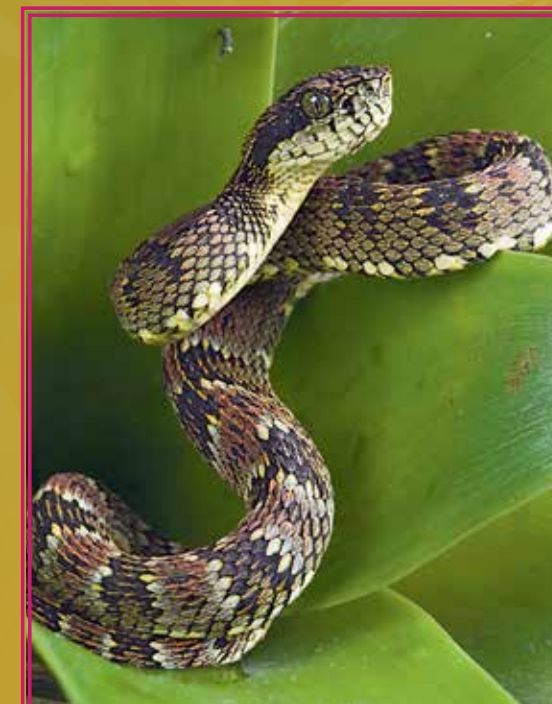
A colony of ants has made its nest in the thick base of the bromeliad **below**. Here, you can see some of the adults and young.



Uh-oh, is that hungry crab **above** looking for some tasty tadpoles? The *poison frog* parent seems to be warning, "Stay in your own pool!" Meanwhile, the *marsupial frog* at **right** releases babies from her back into a bromeliad pool.

And some animals use the pools as toilets. As all this stuff slowly rots, it turns into a kind of soupy soil. Tiny hairs on the leaves soak up minerals from this rich "soup," and that helps the plants grow.

These high-rise tanks also make good homes for insects and other tiny creatures. And bigger animals come to eat the little ones. As many as 500 different animal species use these pools. In fact, there may be more species of living things in a single bromeliad pool than in an area of the same size anywhere else in the world.



A bromeliad makes a cozy spot for the *pit viper* at **left** to curl up and relax. Its wait may be rewarded by a bird, lizard, or some other yummy meal passing by.

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LIFE GOES ON

As you can see, bromeliads make great wildlife hangouts. Some animals stop by to drink, eat, hide, rest, bathe, or cool off. Others may spend their whole lives there.

A bromeliad even makes a perfect nursery. A mosquito, for example, may lay her eggs in a bromeliad pool. When the larvae hatch, they munch on mini-meals already in there. And some larvae become meals for other animals.



This cutaway view shows an orange nectar bat sticking its long tongue in a bromeliad flower to lap up its nectar.

A violet-crowned woodnymph zips over to these bright bromeliad flowers in search of sweet nectar.



Certain kinds of frogs lay their eggs in treetop pools. Others lay their eggs down below. Then, depending on the species, the mom or dad frogs piggyback their just-hatched tadpoles up to a pool. Some frogs even raise their young in pouches on their backs. When the time is right, little froglets pop out and into a treetop pool.

When bromeliads sprout flowers, hummingbirds come to sip their nectar by day, while bats do the same at night. As these birds and bats feed, they collect pollen on their feathers or fur. Then the pollen brushes off on other flowers, helping the bromeliads make fruit and seeds. It's the perfect way to make sure there will always be plenty of treetop tanks for all!

TREETOP EXPLORER

MEET NALINI NADKARNI. She began climbing the trees in her Maryland backyard as a kid. And she's been climbing into tropical forest canopies as a scientist her whole adult life. Nalini studies everything she sees in these treetops, but her main interest is bromeliads and other epiphytes. How does she get up in a tree that's more than 100 feet high (higher than a 10-story building)? It all starts with a slingshot.

That's what she uses to shoot a fishing line with a weight on the end over a

sturdy high-up branch. Next, she uses the fishing line to pull a rope over the branch. Then she climbs the rope, using special clamps and a harness to sit in. She remembers the first time she tried this. "From my perch at the top of the tree, I could see for miles. I began to yell with excitement!"

Now, Nalini works most of the year teaching college science. She also works with communities to bring science to other people. She even made a "TreeTop Barbie" doll to help get young girls ex-



To explore the treetops, first you have to get there! Here, Nalini inches her way up by rope.

cited about science study and exploration. Every summer, her family travels to Central America, where Nalini can continue to climb and learn—and yell with excitement from the treetops. 🌿



Nalini hoisted this platform into the treetop and secured it. Now she can use it as a base while exploring from branch to branch.