

Insect armies



The jungle is alive with insects as they busily go about their daily tasks. Many live in communities that are similar to armies.

Wasp architects

Paper wasps chew up wood to make strong, light paper. They use the paper to build a cluster of cells for the queen wasp's grubs to live in. Workers collect insects and pieces of caterpillar for the grubs to eat.



Leaf-cutter ants can strip a bush of all its leaves in one night.



Tiny farmers

Leaf-cutter ants carry leaf fragments back to their underground nests. The chewed leaves make ideal compost for growing fungi – the ants' food.

Insect army ranks

Queen The only one that lays eggs. The whole insect army serves the queen.

Soldier A defender of the colony, who will fight to protect the nest from attack.

Worker A manual labourer (i.e. builder, farmer, or hunter).



Ant camp

Army ants make a camp by locking themselves together with their legs and jaws. This solid mass of live ants has their queen and her eggs at the centre. When they have stripped the local area of food, the camp moves on.

All worker leaf-cutter ants are female. A few special males and females leave the nest to make new colonies.

On the rampage

At dawn, worker army ants and some soldier guards set off to hunt, forming a long column that snakes across the forest floor. They attack and kill anything that gets in their way, even large animals.

Blood-sucking mosquitoes lurk in all areas of the jungle. Only females bite, though.

A soldier in defensive position



Army ants are the most dangerous ants in the world.

Termite builders

As builders, termites are second only to people. They use strong clay to build this amazing umbrella-shaped home. Termites rarely leave their nest as they have everything they need inside.



The variety of life

There is more variety of wildlife in the world's tropical rainforests than anywhere else on Earth.

There is so much, in fact, that scientists believe there is still a lot to find.



Rainbow birds

Birds of every colour flash among the trees. This toucan uses its fantastic beak to crack open the many forest fruits, attract toucan friends, and scare away enemies.



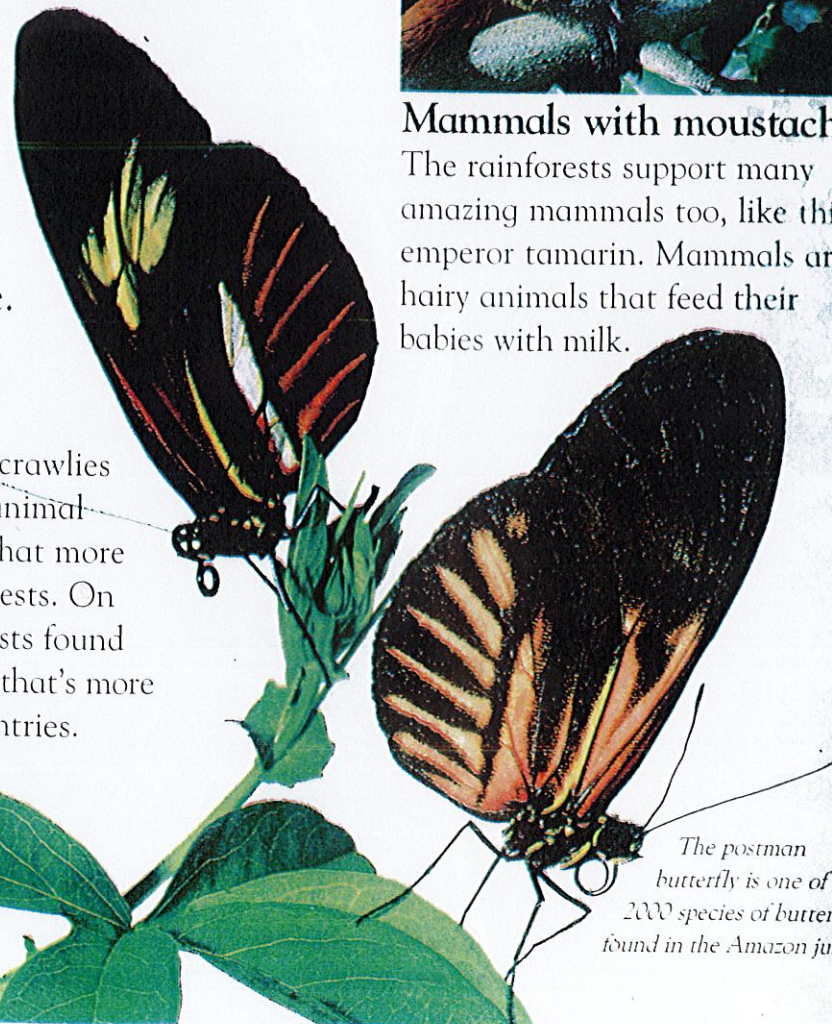
Mammals with moustaches

The rainforests support many amazing mammals too, like this emperor tamarin. Mammals are hairy animals that feed their babies with milk.

Forest layers are one of the reasons there is so much variety – life is piled on top of life.

Teeming with bugs

There are far more creepy crawlies than anything else in the animal kingdom, and nowhere is that more obvious than in the rainforests. On just one jungle tree, scientists found 200 different types of ant – that's more than in many countries.



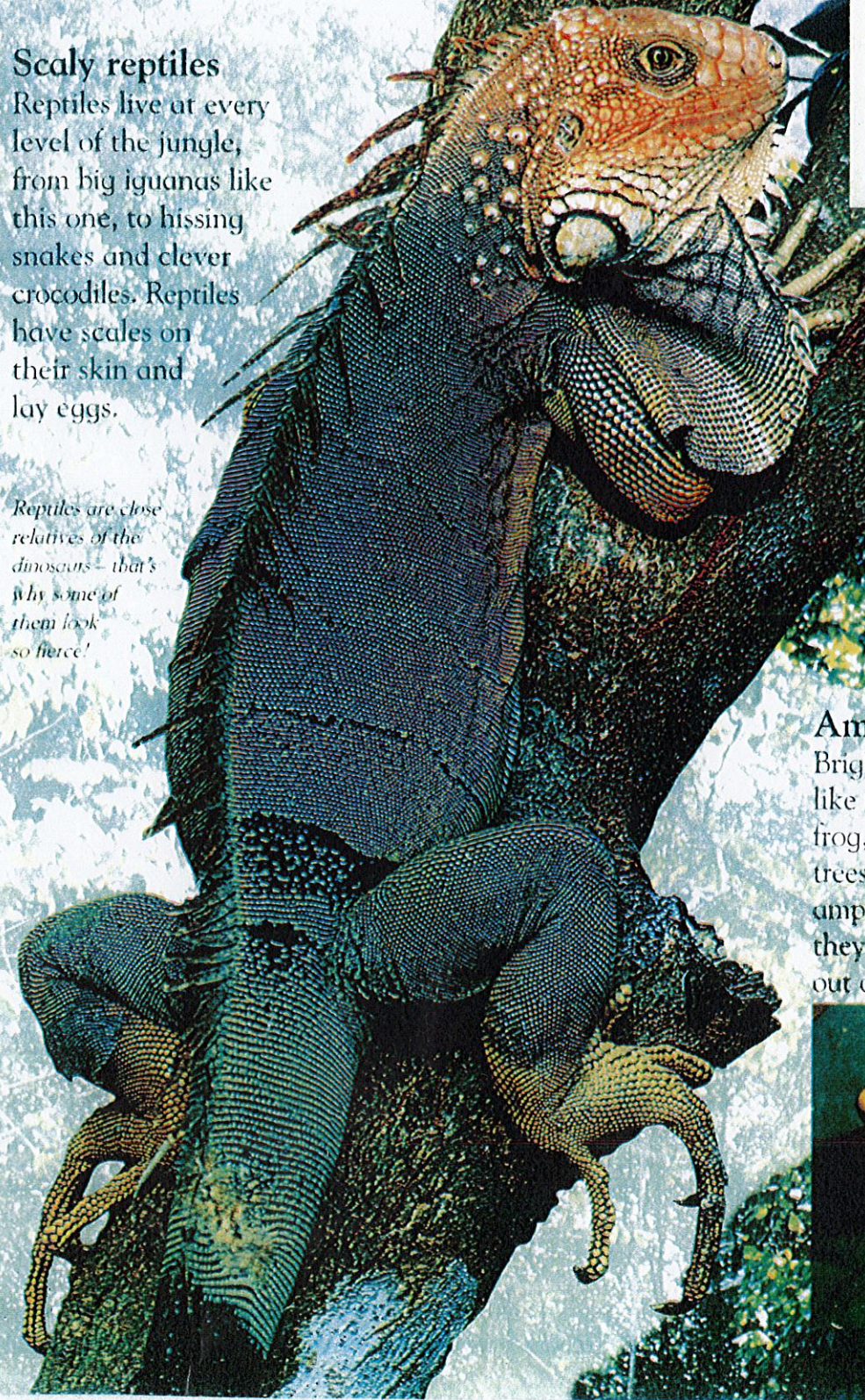
The postman butterfly is one of 200 species of butterfly found in the Amazon jungle.

New types of insect are found every day in tropical rainforests.

Scaly reptiles

Reptiles live at every level of the jungle, from big iguanas like this one, to hissing snakes and clever crocodiles. Reptiles have scales on their skin and lay eggs.

Reptiles are close relatives of the dinosaurs – that's why some of them look so fierce!



Woody words

Carnivore A meat eater. Poison arrow frogs eat insects so they are carnivores.

Herbivore A plant eater. Leaf-eating iguanas and nectar-drinking butterflies are herbivores.

Omnivore A meat and plant eater. Toucans and tamarins, for example, eat a mixture of fruit and insects.

Amphibians

Brightly-coloured frogs, like this poison arrow frog, are common in jungle trees. Frogs and toads are amphibians, which means they can live in and out of water.



Hunting



In the rainforest, venturing out to find food is a dangerous job – it's nothing like a trip to the supermarket! You have to be careful *and* lucky. There are traps and ambushes laid everywhere.

The mantis is weighed down by its fat bottom-half, so it will not over-balance.

Its front feet have spikes to help it hold onto prey.



Good catch!

A praying mantis has launched itself towards a passing fly and caught it with its front legs. The fly had no idea it was so close to danger – the praying mantis is a master of camouflage.

"S" for speed

This poisonous white-lipped tree viper holds the top of its long, slithery body in an S-shape so it can strike out quickly.

Poised to strike, eyes alert...



Hunting for food? Watch out you're not someone else's dinner!

Pop-eye

This western tarsier looks surprised to have caught such a large moth, but it's thanks to its big eyes that it can see in the dark. Many animals hunt under the cover of night.



The snake's mouth and skin stretch to fit the whole frog into its long tummy.



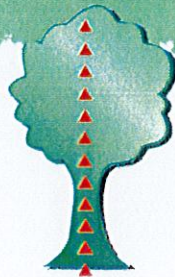
Frog's legs

A forest floor snake catches a fat frog. Poison in the snake's fangs kills the frog, then the snake swallows the frog whole.

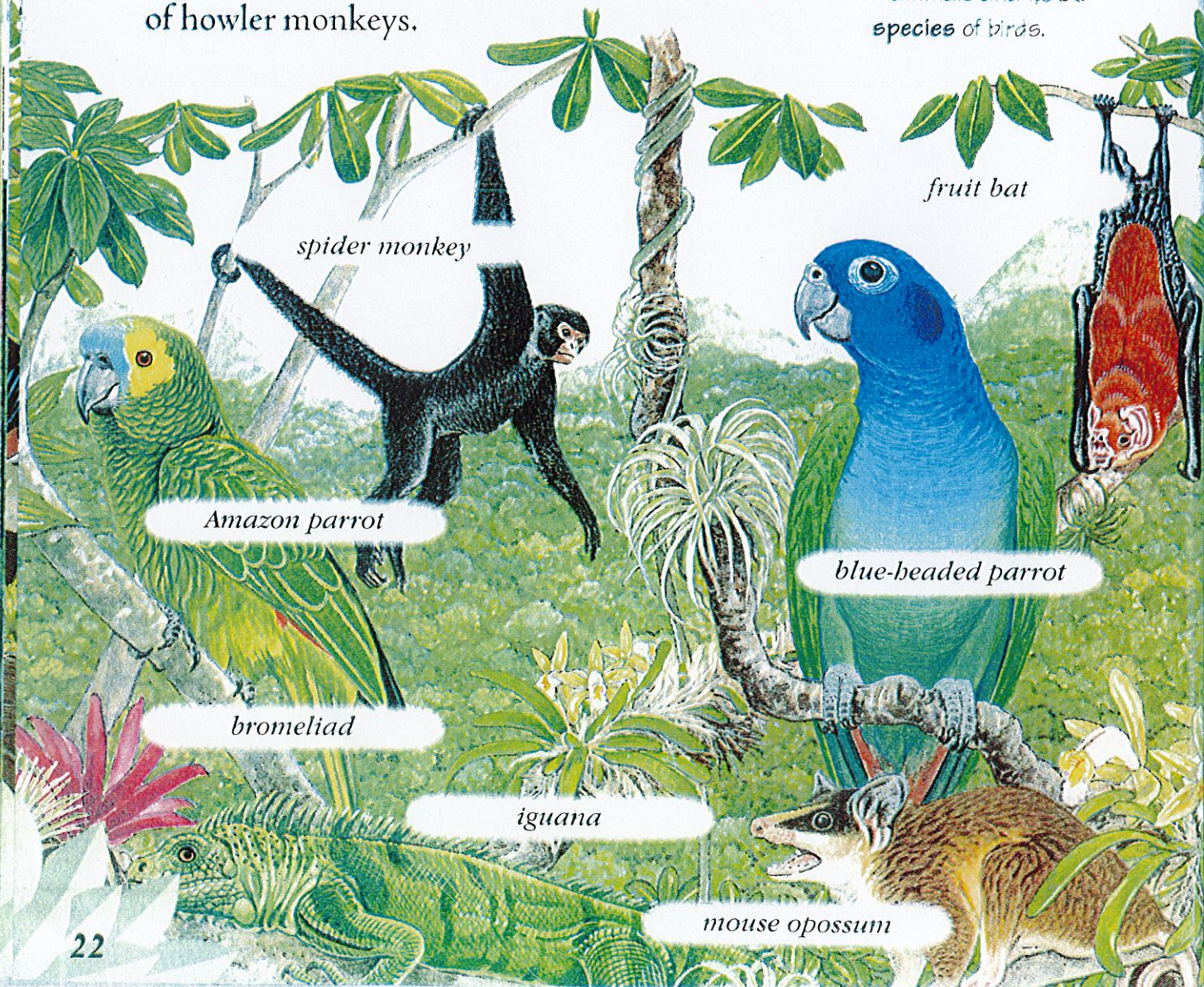
this fearsome viper lies in wait for passing prey.

The emergent layer

At last we reach sunlight! The **emergent** layer is made up of the tallest, oldest trees in the forest. The blazing hot sun beats down on the tops of smaller trees around us, drying their leaves. It is far less **humid** here. There is even a gentle breeze. Here it is much easier to spot brightly coloured hummingbirds searching for flowers and fruits to feed on. We can also hear the loud whooping calls of howler monkeys.



The rainforest is home to 250 varieties of mammals and 1,800 species of birds.



spider monkey

Amazon parrot

bromeliad

iguana

mouse opossum

fruit bat

blue-headed parrot

Howler monkey

These are the largest and loudest monkeys in the **rainforest**. They have a special bone in their throat which acts like a trumpet when they call out. Their calls can be heard for miles, usually at dawn and dusk.



Hummingbird

By flapping their wings very fast, hummingbirds can hover and even fly backwards. They fly quickly from flower to flower amongst the branches, feeding off **nectar** with their long bills.

Gliding tree frog

The gliding tree frog climbs up tall trees and then jumps. Webbed hands and feet act like parachutes, helping it glide to other trees over 12 metres (40 feet) away.



Help save the rainforest

Be an eco-tourist, visit a rainforest

People are cutting down their own rainforests because they need to make a living, just like you and me. If we went on holiday to the rainforest areas, to see animals and trees, then rainforest people would make more money from guiding us and giving us places to stay, than by cutting down the trees. So they would be able to look after the rainforest and make a decent living.

Where would you like your family to go on holiday?

Look up rainforest holidays on the Internet (type in 'Rainforest Holiday' and search). Make sure they are eco-friendly tours. Think up 10 questions you might ask to tell if your eco-lodge is really an eco-lodge (rather than just pretending), for example, do the local people work in the lodge?

Watch a rainforest grow

- Choose two or three small plants that your local garden centre tells you grow in a tropical rainforest.
- Put a thin layer of sand and gravel at the bottom of a pot, then add potting compost and your plants. Press down firmly so the soil is just below the pot rim.
- Place three small canes in the pot around the edges.
- Water the plot.
- Place a large plastic bag over the pot and tuck the edges inside the pot. Keep your rainforest warm and out of direct sunlight.
- In a couple of days you should see moisture form inside the bag. This moisture has been released by the plants and will fall down onto the soil and find its way into the plant through the roots.
- Now you have a rainforest which will last for many months without any attention.



Eat rainforest food

Make a food basket of rainforest foods:

- Collect these from your supermarket and then make a nice display of them in a basket:
Bananas, yams, avocados, pineapples, peppers, peanuts, oranges, papayas, lemons, pepper, coconuts, sugar canes, cassava and cacao (chocolate), coffee beans, cashews, nutmegs, cinnamon, chicle (used in chewing gum), vanilla and Brazil nuts.
- Take a picture and label it for a classroom display.

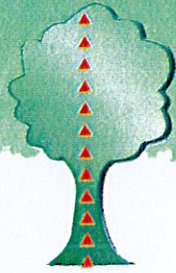
Help care for the rainforest

Do not buy goods that are not from well managed forests. If you buy things of wood, look to see if it is a tropical wood. Does the seller guarantee the wood comes from a rainforest where more trees are planted to replace those taken away? If the seller cannot guarantee this, and show you a piece of paper with the guarantee written on, then **DON'T BUY IT**. That way, you will have done your bit for the rainforest.



Can you find three ways in which YOU can help save the tropical rainforest?

At the tree top



Now we are at the very top of our **rainforest** tree. We are just above the **canopy** on a platform of leaves swaying in the wind. The sun is beating down fiercely. Insects fill the air, chased by **agile** swifts. Around us in the canopy we can see flashes of movement and colour. Sharp-eyed eagles can see them too and are ready to swoop down to snatch a monkey or parrot for a meal.

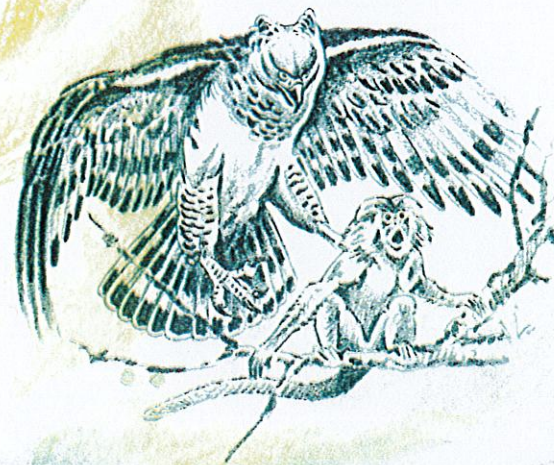
The view from the very top of the rainforest tree is spectacular!



Scarlet macaw

The rainforest is home to many different kinds of parrots. The scarlet macaw is one of the largest. Like most parrots, it can fly or clamber through the branches and uses its strong beak to crack open nuts and fruit.

Spider monkey
This large monkey is too big to be hunted by eagles. With its long thin legs and tail it looks like a spider crawling through the branches. By drinking **nectar** from flowers spider monkeys help the **pollination** of the forest.

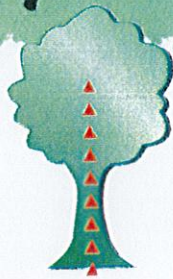


Harpy eagle

The harpy eagle is the largest and most powerful bird in the rainforest. It is a fast and skilful **predator**. It can fly at speeds of up to 80 km/h (50 mph) through the branches to snatch monkeys, or sloths, in its strong **talons**.

The crowded canopy

Now we are into the **canopy**. It is less gloomy here and not as **humid**. The leaves and branches are so dense it is hard to climb. All around we can hear birds and monkeys calling out. We can see many different kinds of monkey, using the vines to clamber around us. Beautiful flowers grow here, and the trees are rich with fruit. Parrots and butterflies flash their dazzling colours.



More animals live in the canopy than anywhere else in the rainforest.



Morpho butterfly

This large butterfly can measure up to 10 cm (4 inches) across its wings. It feeds on the **nectar** in flowers. The male morpho butterflies are the most brightly coloured to attract a mate. They have special **scales** on their wings which catch the light and shine.



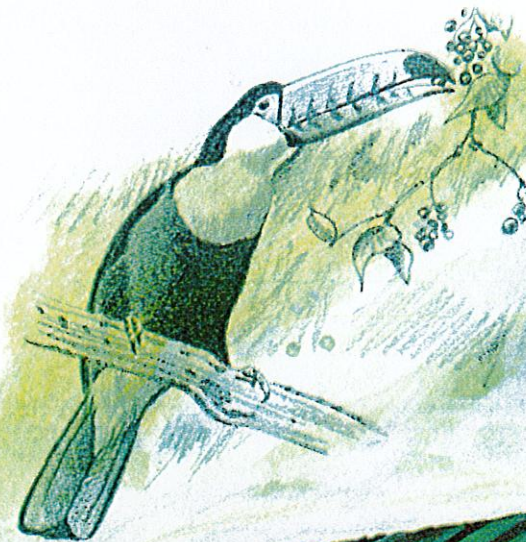
Three-toed sloth

This strange animal always moves very slowly. It hangs from branches all its life with powerful claws like hooks. Its fur is so damp and dirty that green **moss** and **algae** grow there. This helps to hide the sloth from its enemies.



Toucan

Many kinds of toucan live in the **rainforest**. Their long beaks and tongues can reach fruit growing on branches that are too thin to **perch** on. Sometimes they also eat lizards.

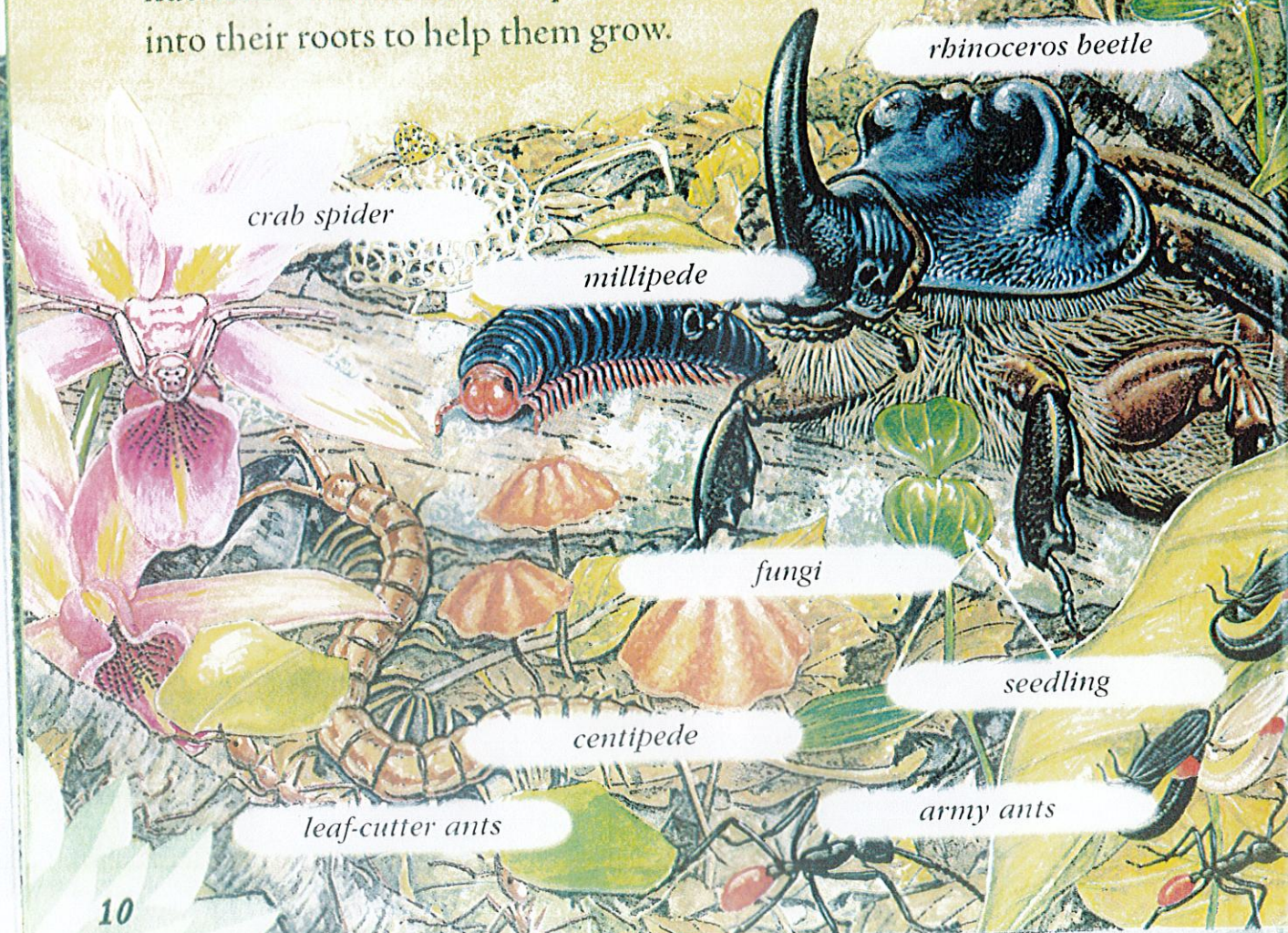


On the forest floor



We are walking through the **rainforest**. The air is full of the call of birds and the buzz of insects. The air is **humid**, like in a hot steamy shower. Even though it is daytime it is quite dark. High above us the thick **canopy** of leaves blocks out nearly all the sunlight. It is too dark for grass to grow. Instead the ground under our feet is thick with twigs and dead leaves that have fallen from above. Many types of **fungi** grow here, helping to rot the **leaf litter**. The rotting leaves release **nutrients** which trees and plants take up into their roots to help them grow.

Fungi and rotting leaf litter provide food for thousands of tiny creatures such as beetles, ants, and wood lice.



crab spider

millipede

rhinoceros beetle

fungi

seedling

centipede

leaf-cutter ants

army ants

Ant bird

This small forest bird has a special way of feeding. Army ants travel across the forest floor in columns, attacking insects and small animals. The ant bird flies just ahead of the column and snaps up insects as they try to escape the hungry ants.



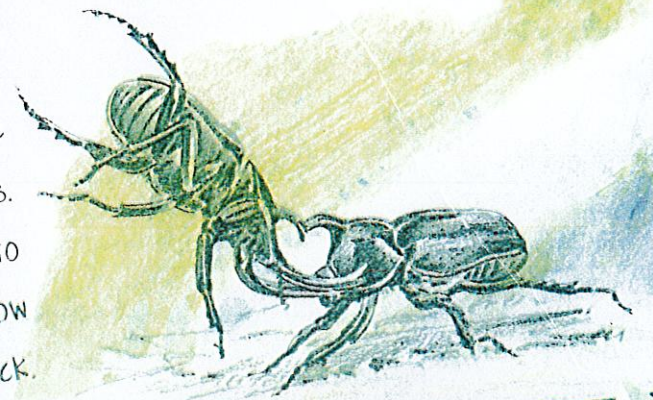
Six-banded armadillo

The armadillo uses its strong claws to make a burrow to live in, or to dig for tasty worms and insects. Although it is covered in strong bony plates, it can curl up in a ball if attacked.



Rhinoceros beetle

These beetles are huge – as long as an adult's hand! Rhinoceros beetles are sometimes called Hercules beetles. The male uses his amazing horns to **wrestle** another male, trying to throw him over onto his back.



The understory



Now we are climbing. The understory is the dark gloomy area below the tree **canopy**. Because of the thick ceiling of trees hardly any wind can blow down here. It is very still and **humid**. We are surrounded by ferns, palms, vines, and creepers, dripping with **moisture**. They can live here because they do not need much light. Among the shadows and splashes of colour we spot lizards scurrying about, searching for food. A spotted ocelot climbs slowly up a creeper, looking for roosting birds.

Young saplings grow up in the gloomy understory towards the light.



Lianas are climbing plants, called vines, that grow up other plants and trees. Many animals use these vines like ropes or bridges to travel around the forest.



Tarantulas

These huge spiders can grow as large as 26 cm (10 inches) across. They use their huge, poisonous fangs to catch other spiders, insects, frogs, and small lizards. Tarantulas are also called bird-eating spiders, but they only hunt small **roosting** birds or chicks.

Hoatzin

This strange bird nests in trees beside rivers in the **rainforest**. Baby hoatzins have claws on their wings to help them hold on to the nest and twigs. Hoatzins eat leaves which rot in their stomachs, giving off a disgusting, strong smell.



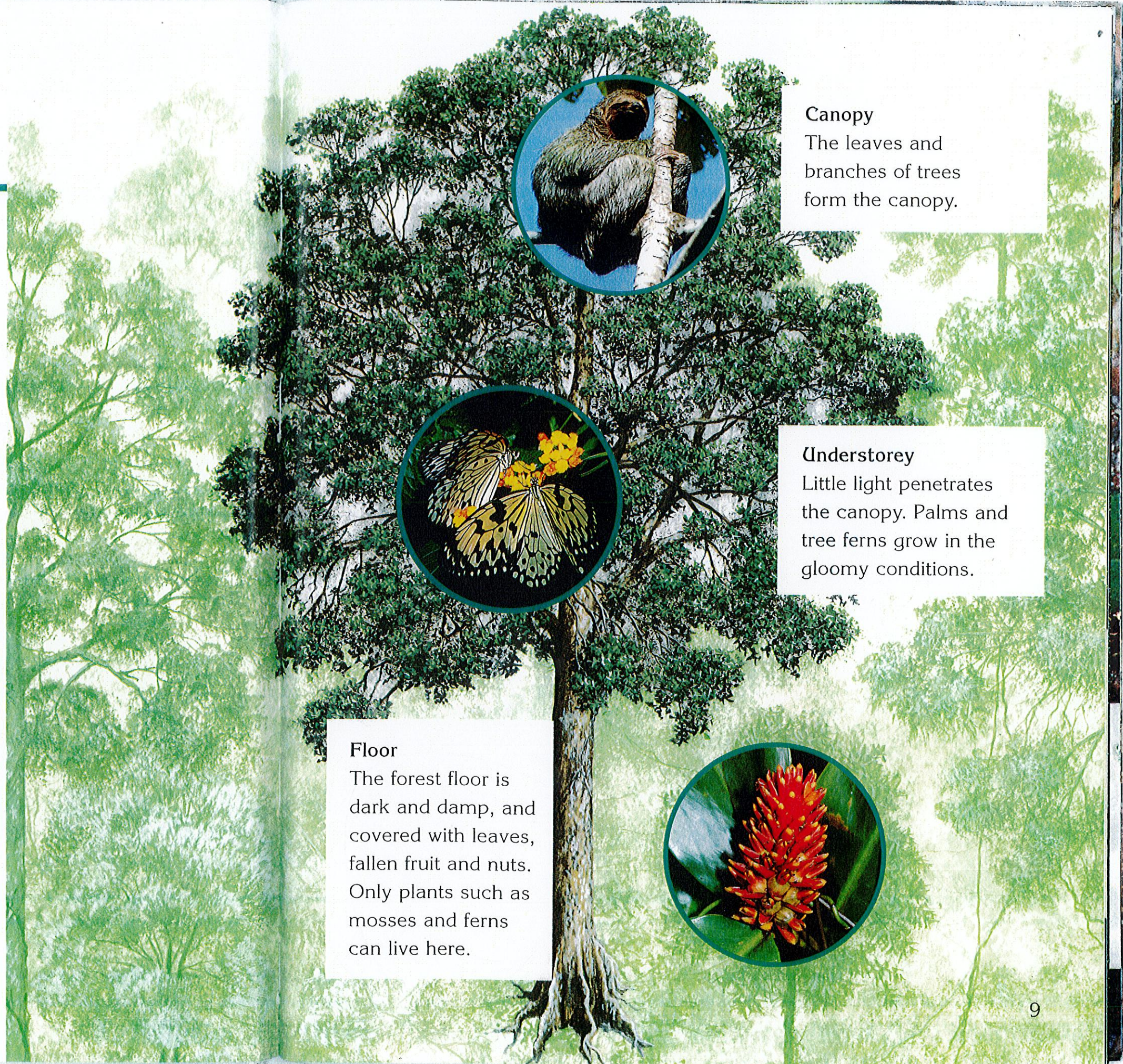
Rainforest layers

The rainforest has many floors, or layers, just like a tall building. Each floor is home to a different group of plants and animals.

The top layer is made up of the leaves and branches of the trees. It is called the **canopy**. The trees grow to heights of 40 metres or more. A few tall trees rise up above the others. These are **emergent trees**. Most of the animals of the rainforest live in the canopy. Colourful birds fly around the top of the trees, while monkeys and sloths move through the branches.

The next layer is the **understorey**. It is much darker here, because the canopy cuts out the light. Only a few **shrubs** and small trees, such as palms, can survive here. Climbing plants called **lianas** reach up from the forest floor.

The forest floor is a very gloomy, damp place. The ground is covered in leaves, twigs and fruits which fall from the trees above.



Canopy

The leaves and branches of trees form the canopy.

Understorey

Little light penetrates the canopy. Palms and tree ferns grow in the gloomy conditions.

Floor

The forest floor is dark and damp, and covered with leaves, fallen fruit and nuts. Only plants such as mosses and ferns can live here.