

# Africa: Eye to Eye with the Unknown

## Whistle down the wind

Blissfully unaware of a famous backdrop that includes a snow-topped Mt. Kenya and the rim of the Great Rift Valley, a lone bull giraffe stretches for the juiciest new leaves near the top of an acacia. It wraps its long and dextrous tongue around a sprig, seemingly immune to the tree's sharp thorns, some of which are 8 cm (3 inches) long. In fact, the giraffe has thick saliva and large papillae on its tongue that protect it and the inside of its mouth from the spines. It chews languidly and looks about haughtily, as only giraffes can, before returning to its chosen branch. Suddenly, it pulls back with unusual haste, shaking its head violently. It's made a mistake. It should have detected the tell-tale smell of the tiny creatures now making its life hell, but it failed to do so and is paying the price: ants with a very painful sting are attacking it.

The ants are in the protection racket. They live in bulbous swellings that join the shafts of several modified thorns, which the tree supplies along with free nectar at leaf bases; and all this in return for security services.

At the slightest hint of an intruder, like a giraffe that should have known better, the ants stream out from the galls and across branches ready to fight the monster to the death, but they don't attack every trespasser. They deal with the daily flood of leaf-eating insects, but they leave well alone insects that might pollinate the tree's flowers, and it's the tree that 'tells' them not to. The ants are allowed to protect the buds, but the freshly opened flowers (yet to be pollinated), produce a chemical that keeps the ants away, so any pollinators are not harmed. However, as soon as the flowers have been pollinated, the chemical restraint is removed and the ants can scramble over the flowers once more.

There are several species of acacia ants and the weaker ones prune buds to restrict side growth so that rival ant gangs on nearby trees cannot invade them and take over. The giraffe was confronted by the stronger and more aggressive type and on this day their less powerful neighbours have made a fatal mistake. They've overlooked a twig that's cracked and bent, creating a bridge between two trees. The invaders, ever eager to expand their territory, stream across, overwhelming the opposition in mandible-to-mandible and sting-to-sting fighting.

## Ant attack

For sheer numbers there's a tiny creature in Africa's rainforests that's hard to beat. The first sign that it's about is a soft pitter-patter, like the sound of rain, but it's not water that's falling, it's ants – driver ants, the dreaded *siafu* – probably the most feared ants on the planet.

These ants are an advance party that's been foraging in the trees, searching for anything that's living; anything that can be sliced and diced and carried back to their bivouac a kilometre away. They crawled up the trunk from the forest floor, but having swept the tree clean of its resident insects, they find the quickest way down – and that's to drop – so it's raining ants.

They cannot see. They have no eyes. They follow scent trails on the ground and up through the trees. Their entire life is governed by smell. The scouts lay the first trails and the others follow, an army that moves through the forest at about 20 m (65 feet) per hour. When a caterpillar or other juicy creature is found, the aggressive workers – each no longer than 0.5 cm (0.2 inches) – emit an alarm odour that encourages many others to come running and to launch an attack. Soon the target is completely smothered by a squirming mass of black bodies, each worker equipped with razor-sharp mandibles for cutting through flesh like a knife through butter.

Large soldier ants, each 1.5 cm (0.6 inches) long and armed with enormous jaws, line the supply columns to protect the busy workers as they run frantically between the front line and the bivouac. The nest itself is made from the living bodies of ants. Inside are living corridors and chambers, all made of ants.

The innermost sanctuary contains the gigantic queen and her consort. At 5.5 cm (2.2 inches) long, she's the largest ant in the world. She lays 1–2 million eggs every month, the hatching grubs attended by nursery workers who feed them with meat brought back by the rest of the foraging workers.

There are so many of them – over 20 million in a single colony – and they are such efficient killers that they can strip a patch of forest of its small animals – earthworms, insects, spiders, scorpions and sometimes even nestlings and small mammals – in a few days, and then be forced to move on to find new feeding grounds elsewhere.

Moving the bivouac is a major military manoeuvre. First the scouts find a suitable campsite, and then the rest of the army follows. They travel along an avenue lined by soldiers. They even form a living roof across open ground, so the rest of the moving colony is safe. The smaller workers carry eggs and larvae delicately in their jaws, passing rapidly along the makeshift corridor in a continuous stream and depositing them in the nursery at the new nest site. Last to leave the old site is the queen. When she arrives at the new location, the avenue breaks down and the daily massacre resumes, the workers stripping bare another part of the forest.

*Africa: Eye to Eye with the Unknown* by Michael Bright

# Questions

- 1 Write down **two** things the text tells you about the protective features of giraffes' mouths. [1 mark]
- 2 Copy the paragraph headings into your book and match to the correct paragraph number. [1 mark]

Heading	Paragraph number
How trees talk to ants	5
Raining ants	3
Moving the colony	1
A giraffe is left with a bad taste in its mouth	11

- 3 Find a word in the first paragraph that means 'lacking force or quickness of movement'. [1 mark]
- 4 The author tells us that '*The ants are in the protection racket*'. Explain how the ants protect the acacia tree. [1 mark]
- 5 What does the phrase '*innermost sanctuary*' suggest about the home of the driver ant queen? [2 marks]
- 6 What is the driver ants' bivouac made from? Copy the sentence that tells you this. [1 mark]
- 7 These words and phrases come from the passage about driver ants:
  - *launch an attack*;
  - *front line*;
  - *military manoeuvre*;
  - *massacre*.
 What impression do they give you of the characteristics of a driver ant colony? [2 marks]
- 8 Compare how chemical communication is used by acacia ants and driver ants. [2 marks]
- 9 Why do you think the author suggests *siafu* are probably the most feared ants on the planet? Give at least **three** reasons from the text. [3 marks]
- 10 Find evidence in the text to show why a bivouac is the most suitable home for driver ants. [3 marks]