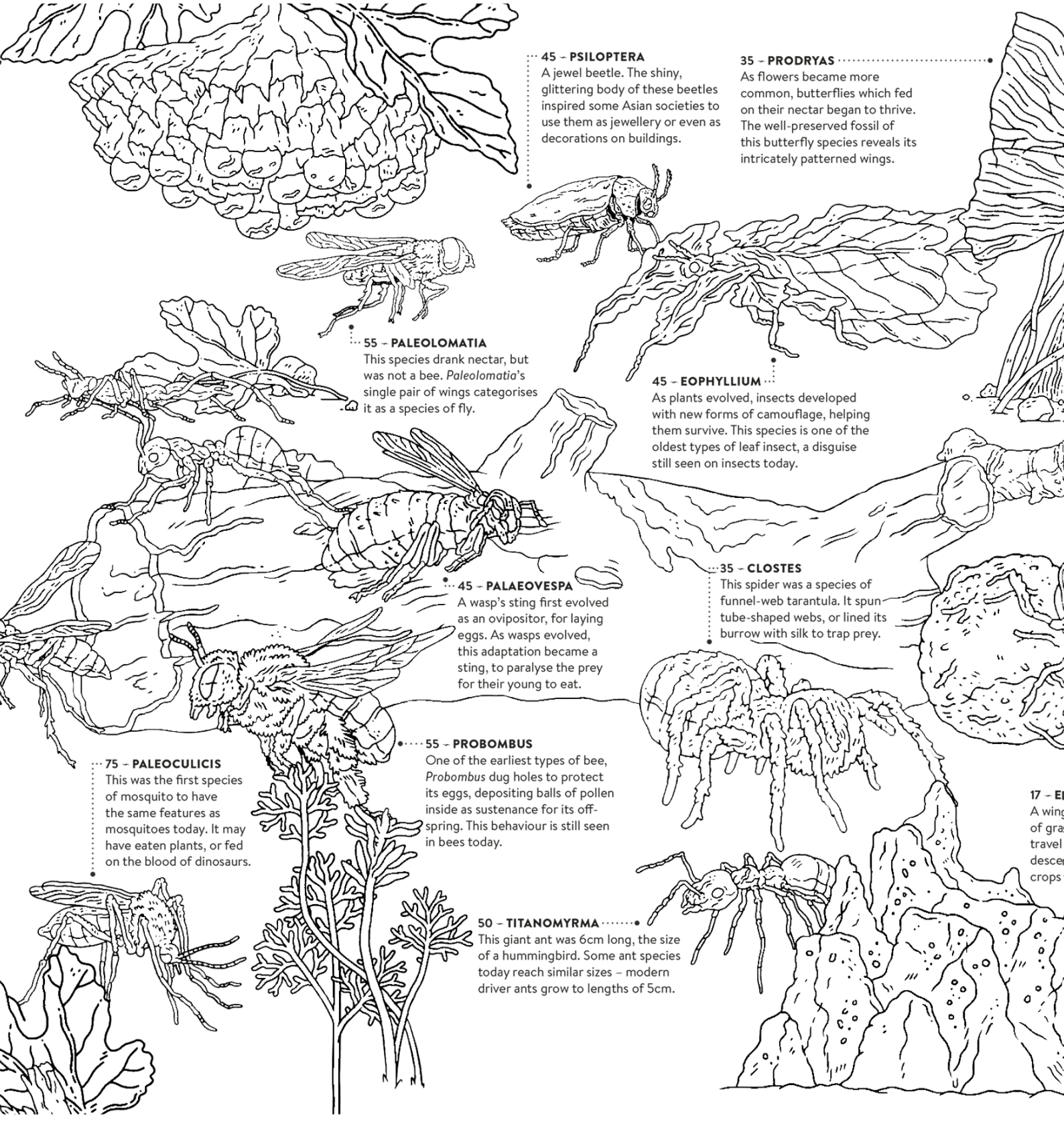
EXPLORER

BUGS!



45 – PSILOPTERA
A jewel beetle. The shiny, glittering body of these beetles inspired some Asian societies to use them as jewellery or even as decorations on buildings.

35 – PRODRYAS
As flowers became more common, butterflies which fed on their nectar began to thrive. The well-preserved fossil of this butterfly species reveals its intricately patterned wings.

55 – PALEOLOMATIA
This species drank nectar, but was not a bee. *Paleolomatia*'s single pair of wings categorises it as a species of fly.

45 – EOPHYLLIUM
As plants evolved, insects developed with new forms of camouflage, helping them survive. This species is one of the oldest types of leaf insect, a disguise still seen on insects today.

45 – PALAEOVESPA
A wasp's sting first evolved as an ovipositor, for laying eggs. As wasps evolved, this adaptation became a sting, to paralyse the prey for their young to eat.

35 – CLOSTES
This spider was a species of funnel-web tarantula. It spun tube-shaped webs, or lined its burrow with silk to trap prey.

55 – PROBOMBUS
One of the earliest types of bee, *Probombus* dug holes to protect its eggs, depositing balls of pollen inside as sustenance for its offspring. This behaviour is still seen in bees today.

75 – PALEOCULICIS
This was the first species of mosquito to have the same features as mosquitoes today. It may have eaten plants, or fed on the blood of dinosaurs.

50 – TITANOMYRMA
This giant ant was 6cm long, the size of a hummingbird. Some ant species today reach similar sizes – modern driver ants grow to lengths of 5cm.

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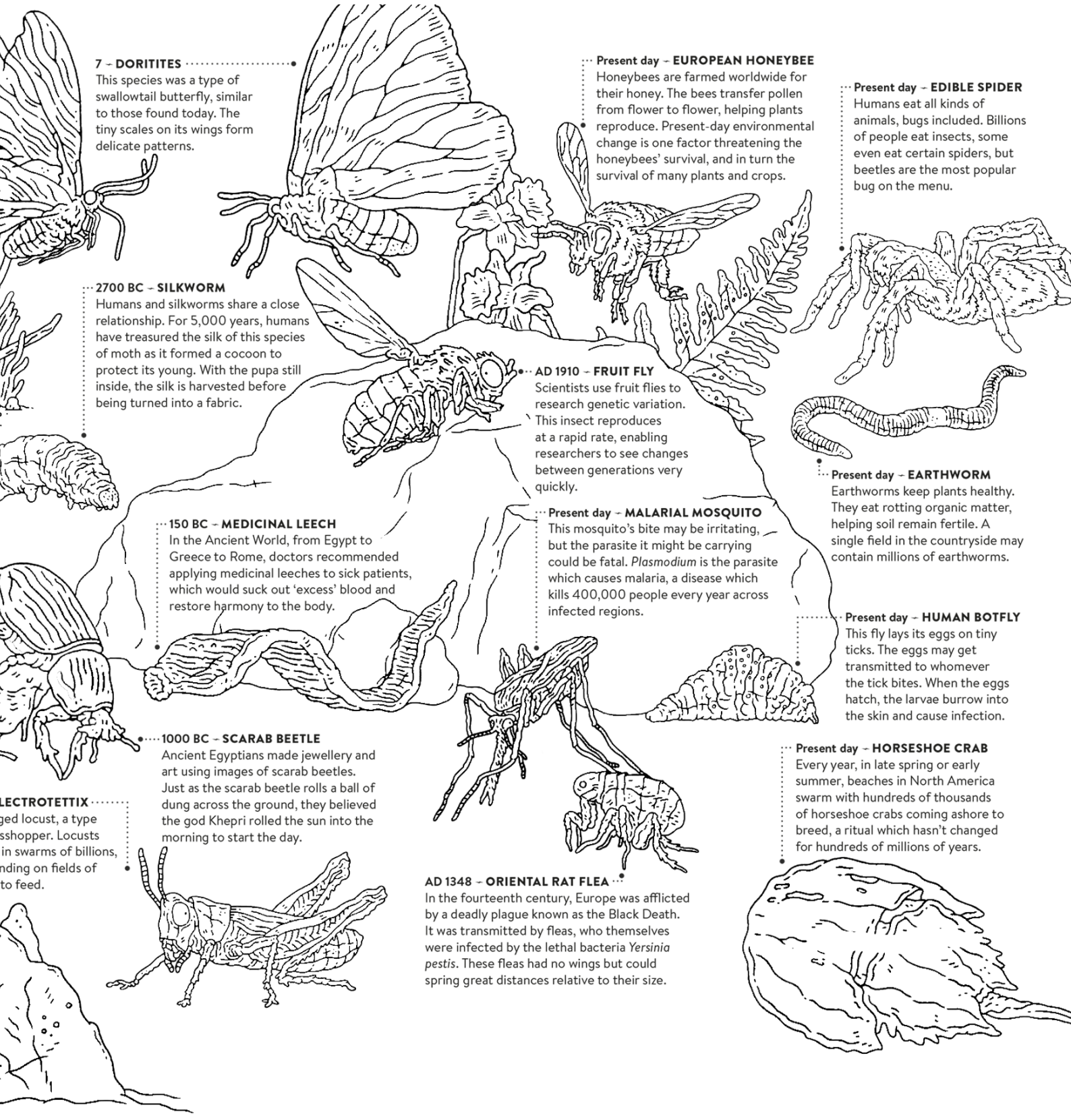
BUGS!



7 – DORITITES
This species was a type of swallowtail butterfly, similar to those found today. The tiny scales on its wings form delicate patterns.

2700 BC – SILKWORM
Humans and silkworms share a close relationship. For 5,000 years, humans have treasured the silk of this species of moth as it formed a cocoon to protect its young. With the pupa still inside, the silk is harvested before being turned into a fabric.

150 BC – MEDICINAL LEECH
In the Ancient World, from Egypt to Greece to Rome, doctors recommended applying medicinal leeches to sick patients, which would suck out 'excess' blood and restore harmony to the body.

1000 BC – SCARAB BEETLE
Ancient Egyptians made jewellery and art using images of scarab beetles. Just as the scarab beetle rolls a ball of dung across the ground, they believed the god Khepri rolled the sun into the morning to start the day.

LECTROTETTIX
ged locust, a type sshopper. Locusts in swarms of billions, nding on fields of to feed.

Present day – EUROPEAN HONEYBEE
Honeybees are farmed worldwide for their honey. The bees transfer pollen from flower to flower, helping plants reproduce. Present-day environmental change is one factor threatening the honeybees' survival, and in turn the survival of many plants and crops.

AD 1910 – FRUIT FLY
Scientists use fruit flies to research genetic variation. This insect reproduces at a rapid rate, enabling researchers to see changes between generations very quickly.

Present day – MALARIAL MOSQUITO
This mosquito's bite may be irritating, but the parasite it might be carrying could be fatal. *Plasmodium* is the parasite which causes malaria, a disease which kills 400,000 people every year across infected regions.

AD 1348 – ORIENTAL RAT FLEA
In the fourteenth century, Europe was afflicted by a deadly plague known as the Black Death. It was transmitted by fleas, who themselves were infected by the lethal bacteria *Yersinia pestis*. These fleas had no wings but could spring great distances relative to their size.

Present day – EDIBLE SPIDER
Humans eat all kinds of animals, bugs included. Billions of people eat insects, some even eat certain spiders, but beetles are the most popular bug on the menu.

Present day – EARTHWORM
Earthworms keep plants healthy. They eat rotting organic matter, helping soil remain fertile. A single field in the countryside may contain millions of earthworms.

Present day – HUMAN BOTFLY
This fly lays its eggs on tiny ticks. The eggs may get transmitted to whomever the tick bites. When the eggs hatch, the larvae burrow into the skin and cause infection.

Present day – HORSESHOE CRAB
Every year, in late spring or early summer, beaches in North America swarm with hundreds of thousands of horseshoe crabs coming ashore to breed, a ritual which hasn't changed for hundreds of millions of years.

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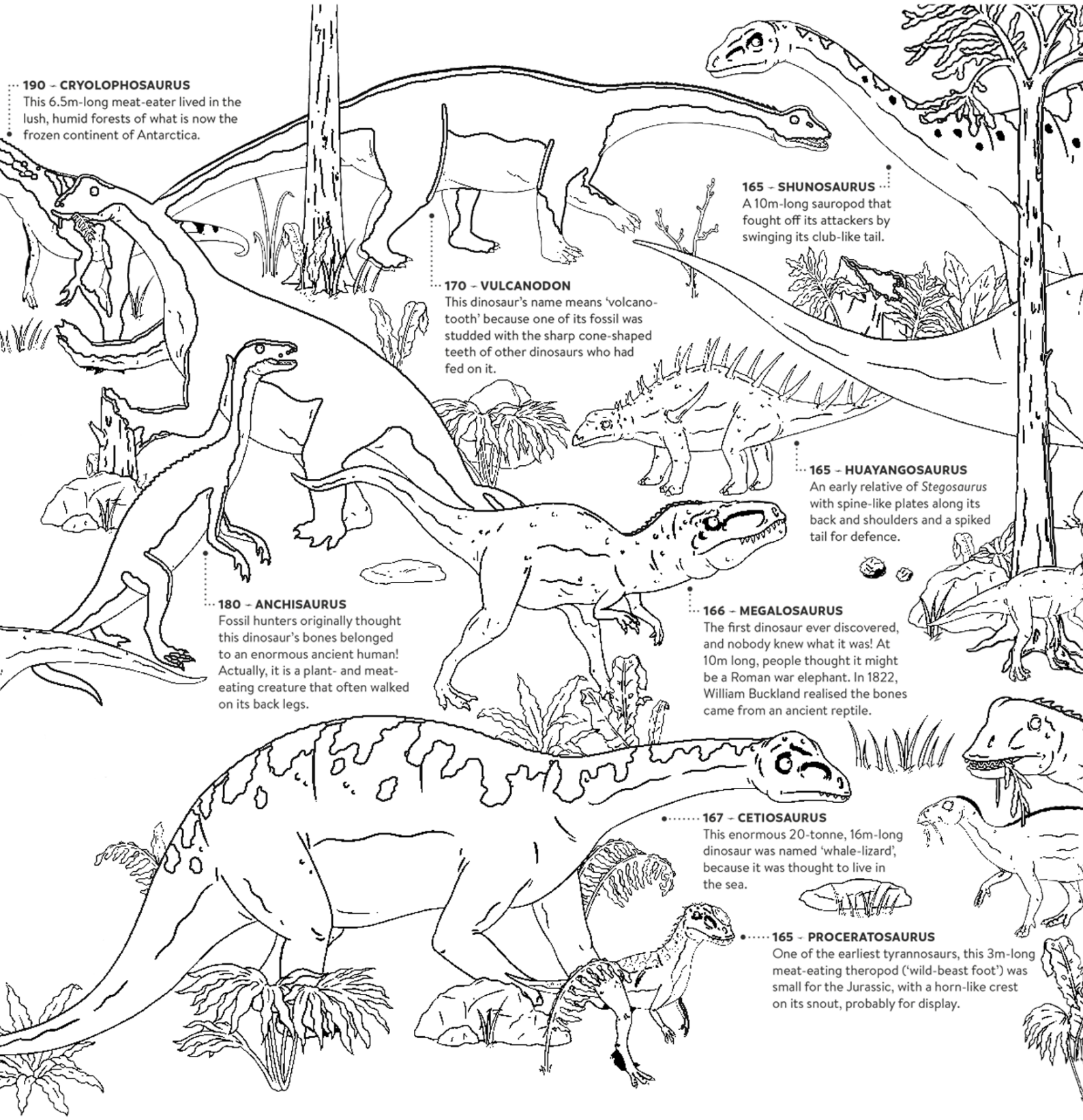
DINOSAURS!



190 – CRYOLOPHOSAURUS
This 6.5m-long meat-eater lived in the lush, humid forests of what is now the frozen continent of Antarctica.

165 – SHUNOSAURUS
A 10m-long sauropod that fought off its attackers by swinging its club-like tail.

170 – VULCANODON
This dinosaur's name means 'volcano-tooth' because one of its fossil was studded with the sharp cone-shaped teeth of other dinosaurs who had fed on it.

165 – HUAYANGOSAURUS
An early relative of *Stegosaurus* with spine-like plates along its back and shoulders and a spiked tail for defence.

180 – ANCHISAURUS
Fossil hunters originally thought this dinosaur's bones belonged to an enormous ancient human! Actually, it is a plant- and meat-eating creature that often walked on its back legs.

166 – MEGALOSAURUS
The first dinosaur ever discovered, and nobody knew what it was! At 10m long, people thought it might be a Roman war elephant. In 1822, William Buckland realised the bones came from an ancient reptile.

167 – CETIOSAURUS
This enormous 20-tonne, 16m-long dinosaur was named 'whale-lizard', because it was thought to live in the sea.

165 – PROCERATOSAURUS
One of the earliest tyrannosaurs, this 3m-long meat-eating theropod ('wild-beast foot') was small for the Jurassic, with a horn-like crest on its snout, probably for display.

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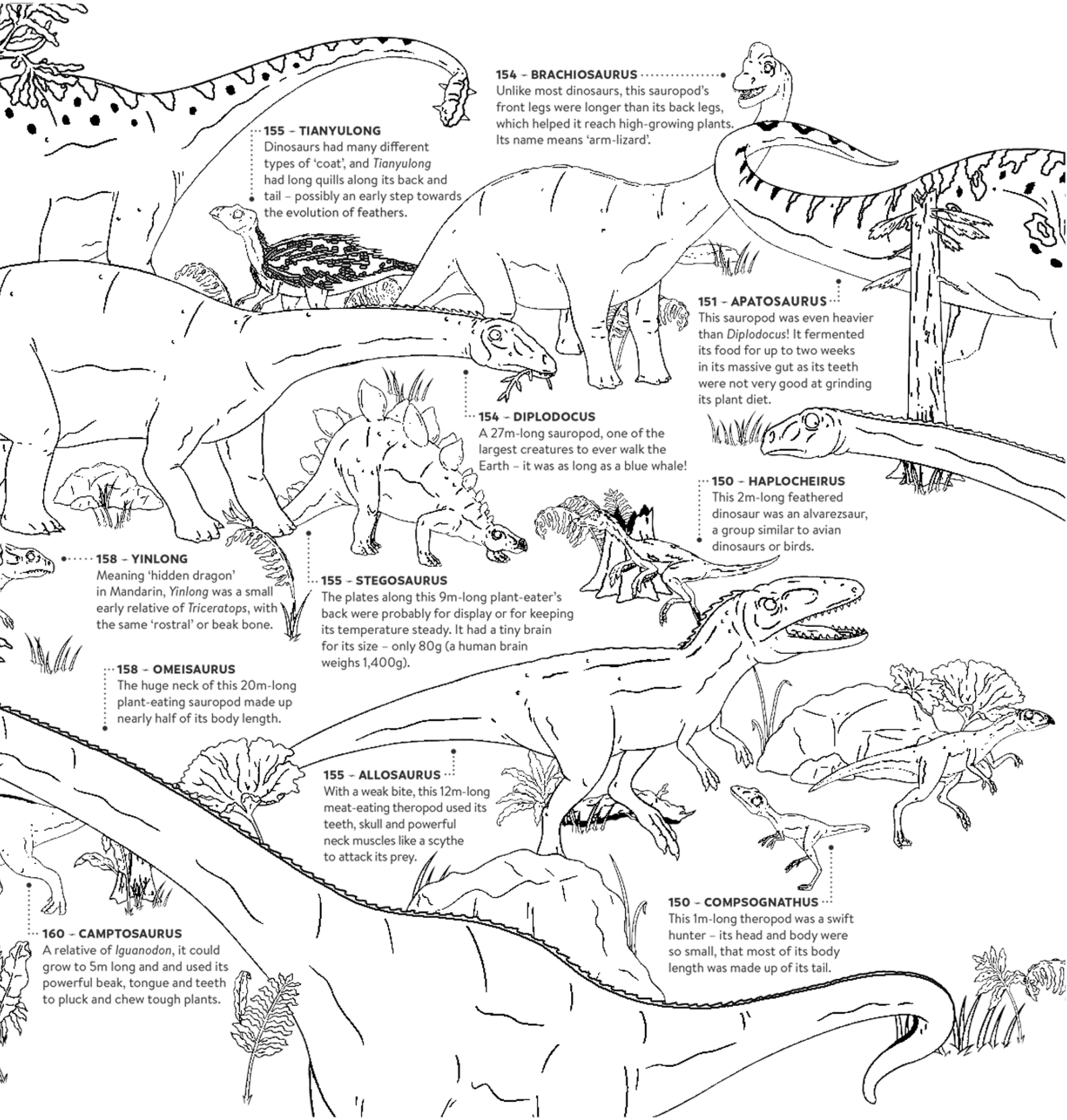
DINOSAURS!



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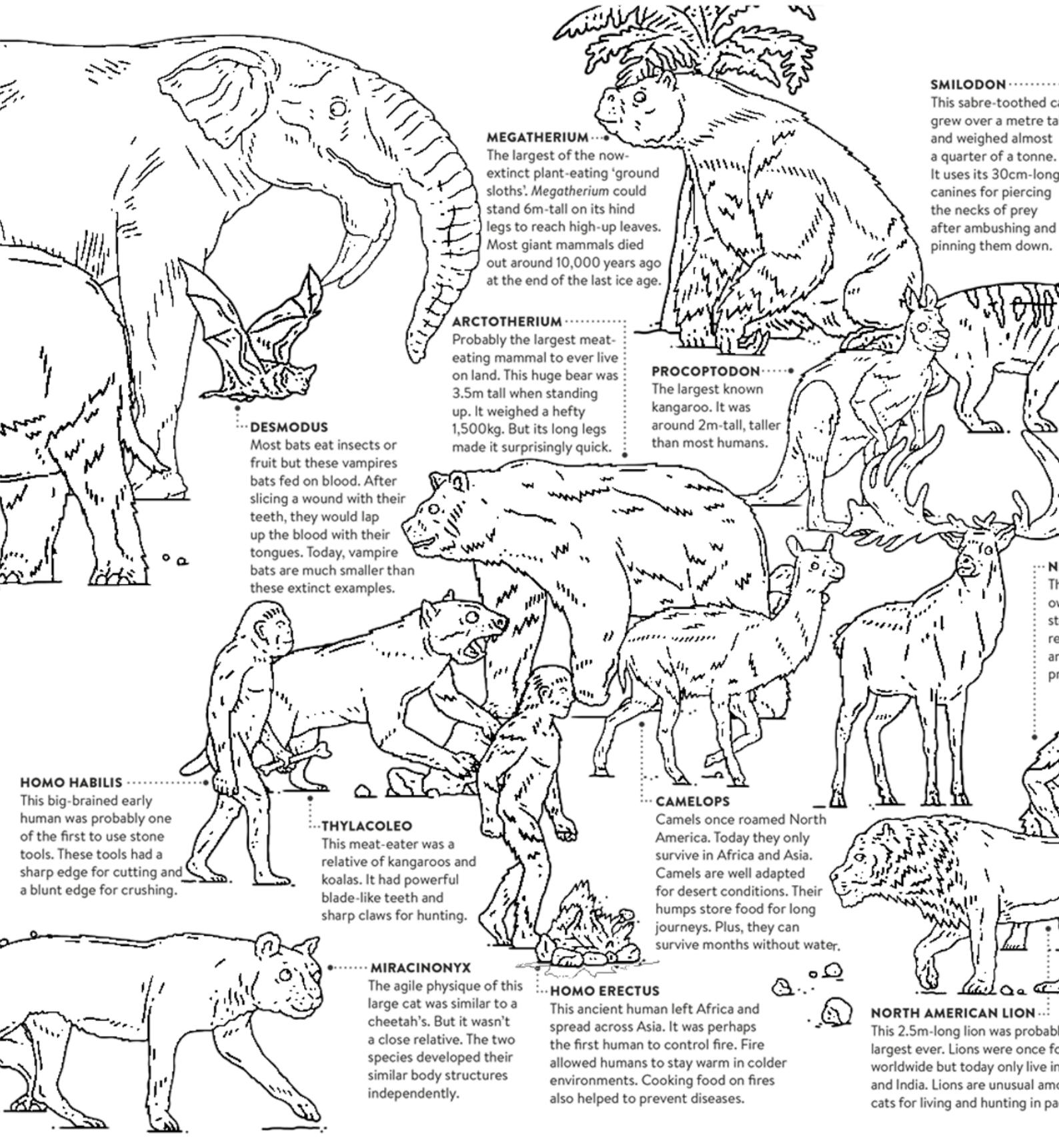
MAMMALS!



MEGATHERIUM
The largest of the now-extinct plant-eating 'ground sloths'. *Megatherium* could stand 6m-tall on its hind legs to reach high-up leaves. Most giant mammals died out around 10,000 years ago at the end of the last ice age.

SMILODON
This sabre-toothed c
grew over a metre ta
and weighed almost
a quarter of a tonne.
It uses its 30cm-long
canines for piercing
the necks of prey
after ambushing and
pinning them down.

ARCTOTHERIUM
Probably the largest meat-eating mammal to ever live on land. This huge bear was 3.5m tall when standing up. It weighed a hefty 1,500kg. But its long legs made it surprisingly quick.

PROCOPTODON
The largest known kangaroo. It was around 2m-tall, taller than most humans.

DESMODUS
Most bats eat insects or fruit but these vampires bats fed on blood. After slicing a wound with their teeth, they would lap up the blood with their tongues. Today, vampire bats are much smaller than these extinct examples.

HOMO HABILIS
This big-brained early human was probably one of the first to use stone tools. These tools had a sharp edge for cutting and a blunt edge for crushing.

THYLACOLEO
This meat-eater was a relative of kangaroos and koalas. It had powerful blade-like teeth and sharp claws for hunting.

CAMELOPS
Camels once roamed North America. Today they only survive in Africa and Asia. Camels are well adapted for desert conditions. Their humps store food for long journeys. Plus, they can survive months without water.

MIRACINONYX
The agile physique of this large cat was similar to a cheetah's. But it wasn't a close relative. The two species developed their similar body structures independently.

HOMO ERECTUS
This ancient human left Africa and spread across Asia. It was perhaps the first human to control fire. Fire allowed humans to stay warm in colder environments. Cooking food on fires also helped to prevent diseases.

NORTH AMERICAN LION
This 2.5m-long lion was probabl
largest ever. Lions were once fo
worldwide but today only live in
and India. Lions are unusual amo
cats for living and hunting in pa

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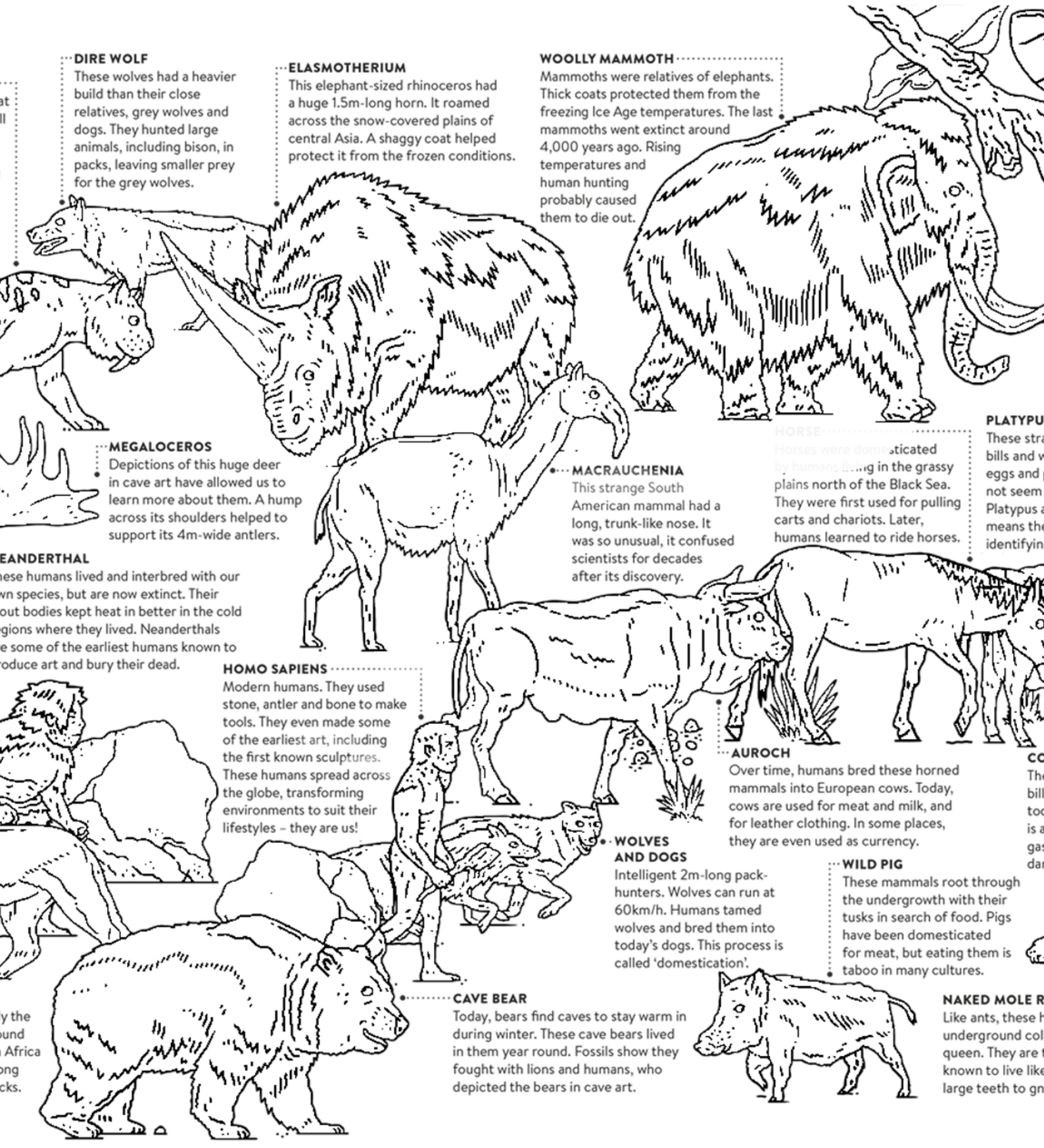
MAMMALS!



DIRE WOLF
These wolves had a heavier build than their close relatives, grey wolves and dogs. They hunted large animals, including bison, in packs, leaving smaller prey for the grey wolves.

ELASMOTHERIUM
This elephant-sized rhinoceros had a huge 1.5m-long horn. It roamed across the snow-covered plains of central Asia. A shaggy coat helped protect it from the frozen conditions.

WOOLLY MAMMOTH
Mammoths were relatives of elephants. Thick coats protected them from the freezing Ice Age temperatures. The last mammoths went extinct around 4,000 years ago. Rising temperatures and human hunting probably caused them to die out.

MEGALOCEROS
Depictions of this huge deer in cave art have allowed us to learn more about them. A hump across its shoulders helped to support its 4m-wide antlers.

MACRAUCHENIA
This strange South American mammal had a long, trunk-like nose. It was so unusual, it confused scientists for decades after its discovery.

HORSE
Horses were domesticated by humans living in the grassy plains north of the Black Sea. They were first used for pulling carts and chariots. Later, humans learned to ride horses.

HOMO SAPIENS
Modern humans. They used stone, antler and bone to make tools. They even made some of the earliest art, including the first known sculptures. These humans spread across the globe, transforming environments to suit their lifestyles – they are us!

AUROCH
Over time, humans bred these horned mammals into European cows. Today, cows are used for meat and milk, and for leather clothing. In some places, they are even used as currency.

WOLVES AND DOGS
Intelligent 2m-long pack-hunters. Wolves can run at 60km/h. Humans tamed wolves and bred them into today's dogs. This process is called 'domestication'.

WILD PIG
These mammals root through the undergrowth with their tusks in search of food. Pigs have been domesticated for meat, but eating them is taboo in many cultures.

CAVE BEAR
Today, bears find caves to stay warm in during winter. These cave bears lived in them year round. Fossils show they fought with lions and humans, who depicted the bears in cave art.

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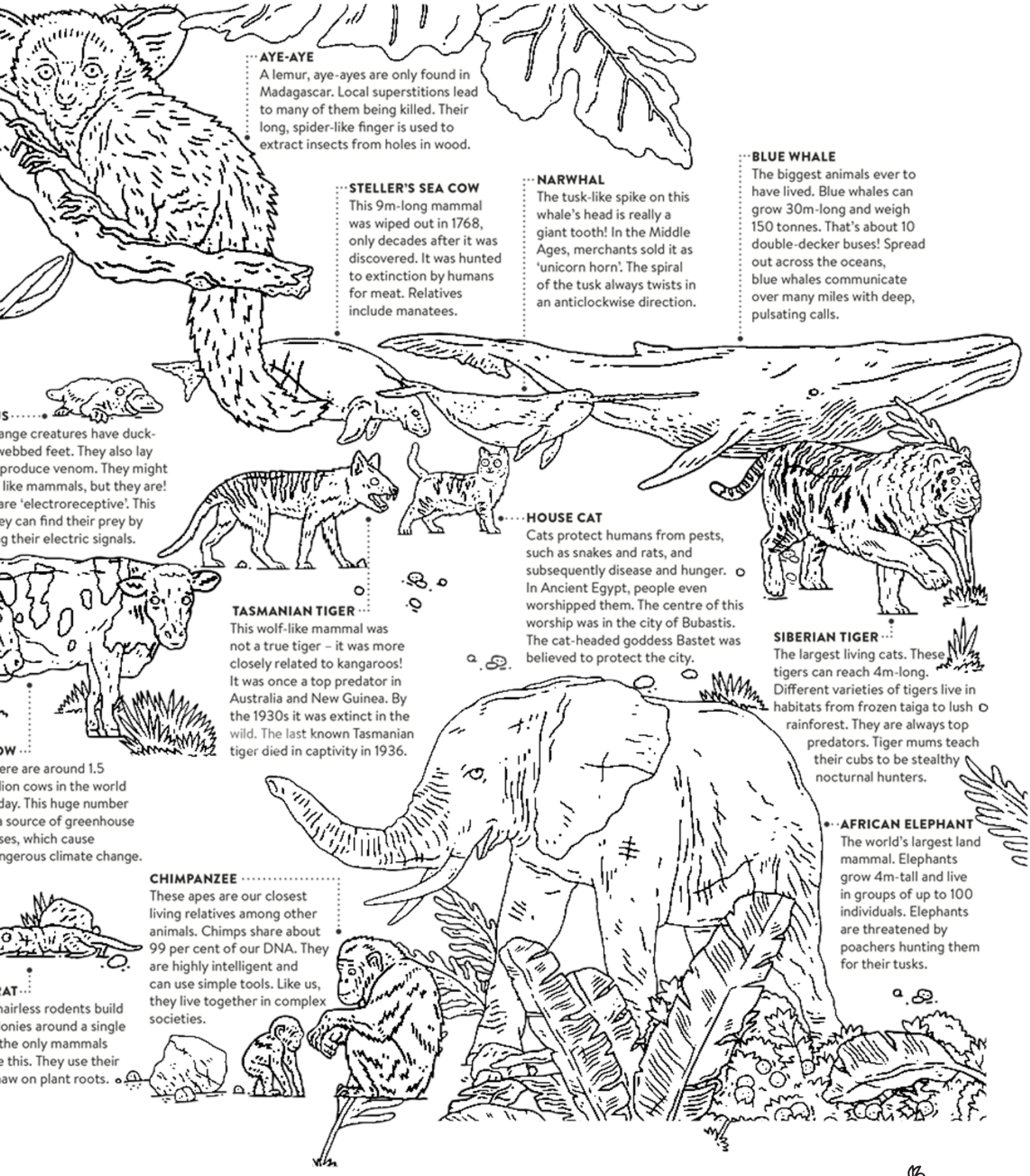
MAMMALS!



AYE-AYE
A lemur, aye-ayes are only found in Madagascar. Local superstitions lead to many of them being killed. Their long, spider-like finger is used to extract insects from holes in wood.

STELLER'S SEA COW
This 9m-long mammal was wiped out in 1768, only decades after it was discovered. It was hunted to extinction by humans for meat. Relatives include manatees.

NARWHAL
The tusk-like spike on this whale's head is really a giant tooth! In the Middle Ages, merchants sold it as 'unicorn horn'. The spiral of the tusk always twists in an anticlockwise direction.

BLUE WHALE
The biggest animals ever to have lived. Blue whales can grow 30m-long and weigh 150 tonnes. That's about 10 double-decker buses! Spread out across the oceans, blue whales communicate over many miles with deep, pulsating calls.

S
ange creatures have duck-webbed feet. They also lay produce venom. They might like mammals, but they are! are 'electroreceptive'. This ey can find their prey by g their electric signals.

HOUSE CAT
Cats protect humans from pests, such as snakes and rats, and subsequently disease and hunger. In Ancient Egypt, people even worshipped them. The centre of this worship was in the city of Bubastis. The cat-headed goddess Bastet was believed to protect the city.

TASMANIAN TIGER
This wolf-like mammal was not a true tiger – it was more closely related to kangaroos! It was once a top predator in Australia and New Guinea. By the 1930s it was extinct in the wild. The last known Tasmanian tiger died in captivity in 1936.

SIBERIAN TIGER
The largest living cats. These tigers can reach 4m-long. Different varieties of tigers live in habitats from frozen taiga to lush rainforest. They are always top predators. Tiger mums teach their cubs to be stealthy nocturnal hunters.

OW
ere are around 1.5 lion cows in the world day. This huge number a source of greenhouse ses, which cause ngerous climate change.

AFRICAN ELEPHANT
The world's largest land mammal. Elephants grow 4m-tall and live in groups of up to 100 individuals. Elephants are threatened by poachers hunting them for their tusks.

CHIMPANZEE
These apes are our closest living relatives among other animals. Chimps share about 99 per cent of our DNA. They are highly intelligent and can use simple tools. Like us, they live together in complex societies.

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airless rodents build onies around a single the only mammals e this. They use their aw on plant roots.

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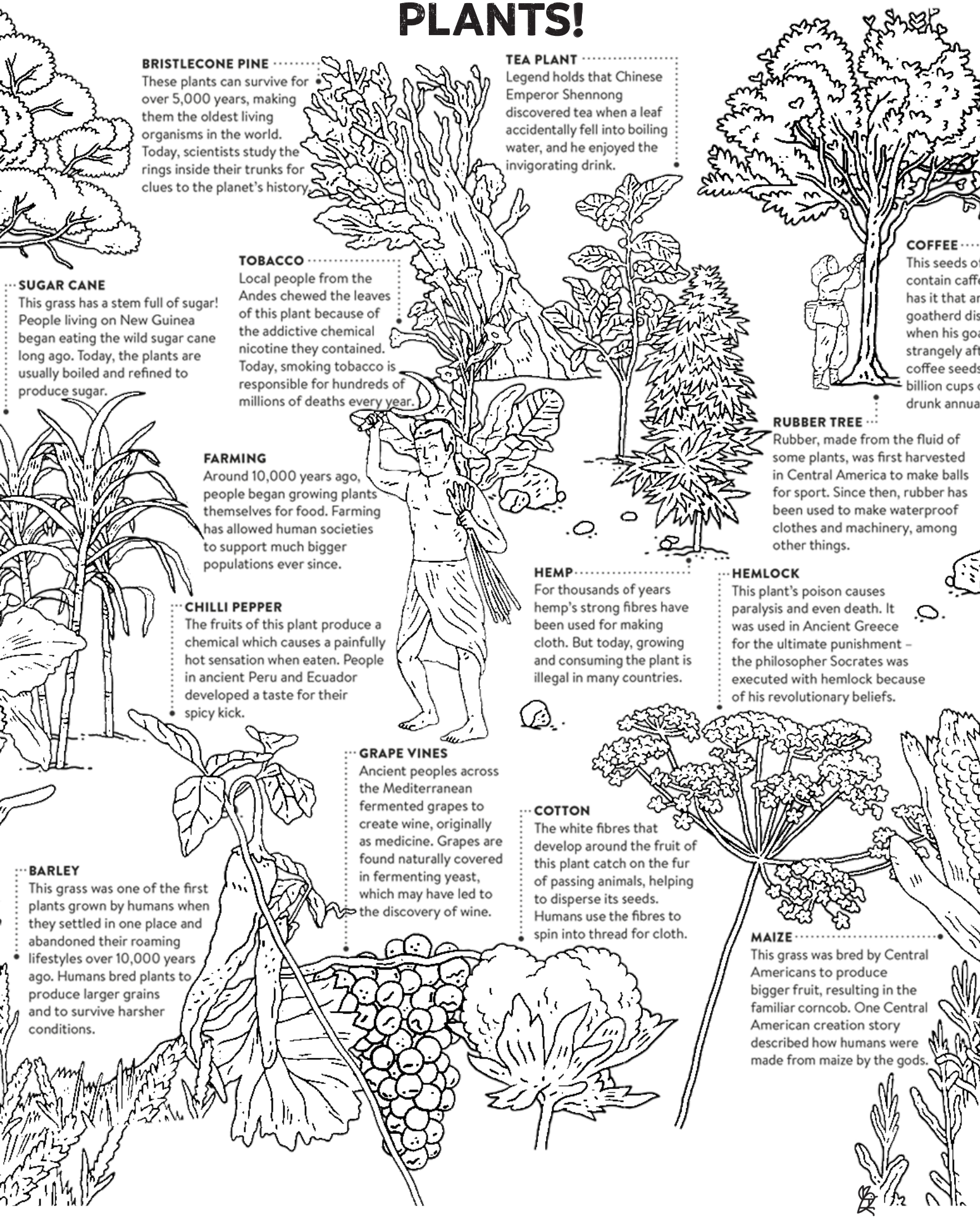
PLANTS!



BRISTLECONE PINE
These plants can survive for over 5,000 years, making them the oldest living organisms in the world. Today, scientists study the rings inside their trunks for clues to the planet's history.

TEA PLANT
Legend holds that Chinese Emperor Shennong discovered tea when a leaf accidentally fell into boiling water, and he enjoyed the invigorating drink.

COFFEE
This seeds of contain caffe has it that an goatherd dis when his goa strangely aft coffee seeds billion cups drunk annua

TOBACCO
Local people from the Andes chewed the leaves of this plant because of the addictive chemical nicotine they contained. Today, smoking tobacco is responsible for hundreds of millions of deaths every year.

SUGAR CANE
This grass has a stem full of sugar! People living on New Guinea began eating the wild sugar cane long ago. Today, the plants are usually boiled and refined to produce sugar.

RUBBER TREE
Rubber, made from the fluid of some plants, was first harvested in Central America to make balls for sport. Since then, rubber has been used to make waterproof clothes and machinery, among other things.

FARMING
Around 10,000 years ago, people began growing plants themselves for food. Farming has allowed human societies to support much bigger populations ever since.

HEMP
For thousands of years hemp's strong fibres have been used for making cloth. But today, growing and consuming the plant is illegal in many countries.

HEMLOCK
This plant's poison causes paralysis and even death. It was used in Ancient Greece for the ultimate punishment – the philosopher Socrates was executed with hemlock because of his revolutionary beliefs.

CHILLI PEPPER
The fruits of this plant produce a chemical which causes a painfully hot sensation when eaten. People in ancient Peru and Ecuador developed a taste for their spicy kick.

GRAPE VINES
Ancient peoples across the Mediterranean fermented grapes to create wine, originally as medicine. Grapes are found naturally covered in fermenting yeast, which may have led to the discovery of wine.

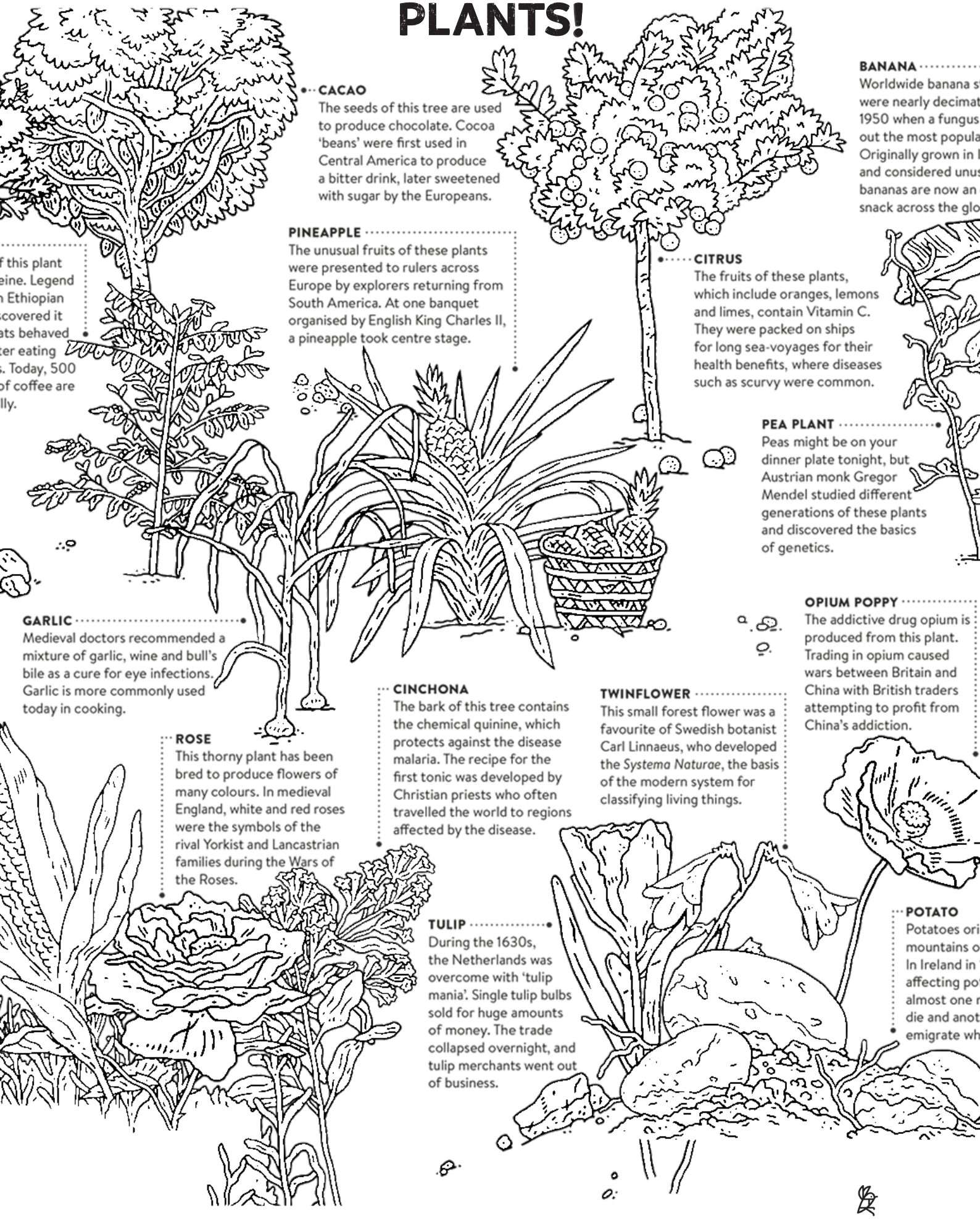
COTTON
The white fibres that develop around the fruit of this plant catch on the fur of passing animals, helping to disperse its seeds. Humans use the fibres to spin into thread for cloth.

BARLEY
This grass was one of the first plants grown by humans when they settled in one place and abandoned their roaming lifestyles over 10,000 years ago. Humans bred plants to produce larger grains and to survive harsher conditions.

MAIZE
This grass was bred by Central Americans to produce bigger fruit, resulting in the familiar corncob. One Central American creation story described how humans were made from maize by the gods.

EXPLORER

PLANTS!



CACAO
The seeds of this tree are used to produce chocolate. Cocoa 'beans' were first used in Central America to produce a bitter drink, later sweetened with sugar by the Europeans.

PINEAPPLE
The unusual fruits of these plants were presented to rulers across Europe by explorers returning from South America. At one banquet organised by English King Charles II, a pineapple took centre stage.

CITRUS
The fruits of these plants, which include oranges, lemons and limes, contain Vitamin C. They were packed on ships for long sea-voyages for their health benefits, where diseases such as scurvy were common.

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PEA PLANT
Peas might be on your dinner plate tonight, but Austrian monk Gregor Mendel studied different generations of these plants and discovered the basics of genetics.

GARLIC
Medieval doctors recommended a mixture of garlic, wine and bull's bile as a cure for eye infections. Garlic is more commonly used today in cooking.

OPIUM POPPY
The addictive drug opium is produced from this plant. Trading in opium caused wars between Britain and China with British traders attempting to profit from China's addiction.

CINCHONA
The bark of this tree contains the chemical quinine, which protects against the disease malaria. The recipe for the first tonic was developed by Christian priests who often travelled the world to regions affected by the disease.

TWINFLOWER
This small forest flower was a favourite of Swedish botanist Carl Linnaeus, who developed the *Systema Naturae*, the basis of the modern system for classifying living things.

ROSE
This thorny plant has been bred to produce flowers of many colours. In medieval England, white and red roses were the symbols of the rival Yorkist and Lancastrian families during the Wars of the Roses.

TULIP
During the 1630s, the Netherlands was overcome with 'tulip mania'. Single tulip bulbs sold for huge amounts of money. The trade collapsed overnight, and tulip merchants went out of business.

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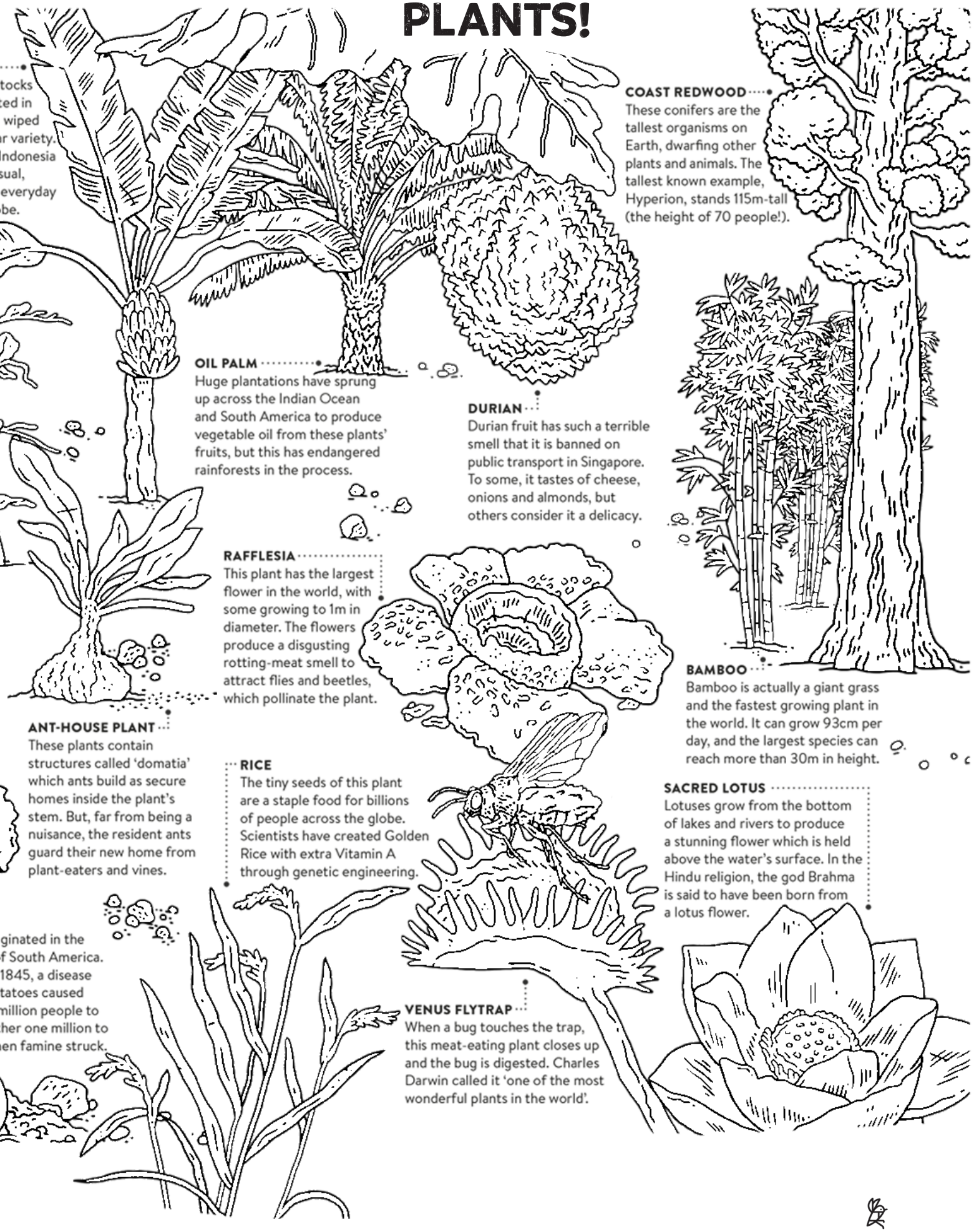
PLANTS!



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OIL PALM
Huge plantations have sprung up across the Indian Ocean and South America to produce vegetable oil from these plants' fruits, but this has endangered rainforests in the process.

COAST REDWOOD
These conifers are the tallest organisms on Earth, dwarfing other plants and animals. The tallest known example, Hyperion, stands 115m-tall (the height of 70 people!).

DURIAN
Durian fruit has such a terrible smell that it is banned on public transport in Singapore. To some, it tastes of cheese, onions and almonds, but others consider it a delicacy.

RAFFLESIA
This plant has the largest flower in the world, with some growing to 1m in diameter. The flowers produce a disgusting rotting-meat smell to attract flies and beetles, which pollinate the plant.

BAMBOO
Bamboo is actually a giant grass and the fastest growing plant in the world. It can grow 93cm per day, and the largest species can reach more than 30m in height.

ANT-HOUSE PLANT
These plants contain structures called 'domatia' which ants build as secure homes inside the plant's stem. But, far from being a nuisance, the resident ants guard their new home from plant-eaters and vines.

RICE
The tiny seeds of this plant are a staple food for billions of people across the globe. Scientists have created Golden Rice with extra Vitamin A through genetic engineering.

SACRED LOTUS
Lotuses grow from the bottom of lakes and rivers to produce a stunning flower which is held above the water's surface. In the Hindu religion, the god Brahma is said to have been born from a lotus flower.

ginated in the
f South America.
1845, a disease
tatoes caused
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en famine struck.

VENUS FLYTRAP
When a bug touches the trap, this meat-eating plant closes up and the bug is digested. Charles Darwin called it 'one of the most wonderful plants in the world'.