



# SITES OF THE LARGEST FINDS

What we know as prehistory lasted millions of years. As no scientist can research such a long stretch of time, each palaeontologist focuses on a certain period of the past. Some follow in the footsteps of dinosaurs. Others examine the bones of Ice Age herbivores. The closer the animals lived to the present day, the more remains they have left us. One of the most interesting periods is the last Ice Age, when sabretoothed tigers and cave bears roamed the Earth along with mammoths and rhinoceroses. It ended 10,000 years ago.

#### **BUBBLING POOLS**

A trap for animals, but a paradise for palaeontologists: we're talking of the huge La Brea Tar Pits at Hancock Park, Los Angeles, USA. In prehistoric times, underground oil reserves bubbled to the surface. Its shine confused many animals, who took it for water. Whoever stepped in the pits would be stuck in tar forever. Although palaeontologists have found whole mammoths in them, most finds are predators lured there by their prey, such as lions, sabre-toothed tigers, wolves and hyenas.

#### **EUROPEAN CAVES**

A palaeontological treasure trove is a cave full of bones! There are several of them in Europe. In the vast cave systems of Spain, France, Romania and the Czech Republic, scientists have found enough prehistoric animal bones, teeth and horns to assemble entire skeletons – allowing us to see in museums exactly what a prehistoric lion or cave bear looked like. We also know these animals from simple pictures drawn with charcoal on the walls of caves by the first prehistoric people, who hunted them.

#### SIBERIAN PERMAFROST

In remote Siberia (Russia), the frost is so heavy that some places have been under ice since prehistoric times. When a glacier melts, super-extraordinary things might appear – such as an entire baby mammoth or rhinoceros, preserved by the ice through the ages. Such a valuable find allows scientists to determine the colour of the mammoth's coat and what food was to be had in the Ice Age.





e have learned most about how bears were born in the Ice Age from caves around the world, since it is there that most bears' bones have been preserved. In some places, thousands of bones and teeth have been found. Bears spent almost half of their lives in dark caves, where they hibernated, and where

stronger than today's bears. Having said that, newborn cubs were only about the size of a rabbit. At his January birth in a deep cave in southern Europe, Argo, too, was rabbit-sized. He weighed just one and a half kilos and was blind in his early weeks. His mother's thick fur protected him from the cold. Argo and his mother didn't emerge into the open until spring.

#### INSURMOUNTABLE OBSTACLES

Their difficulties began when they tried to leave the cave, whose many stones and deep holes were too much for the still-weak cub. Obstacles his mother surmounted with ease were big problems for little Argo. Over and over he tried to grab the edge of a rock with his front paws – until at last he succeeded. Not every cub was so lucky. Some died before seeing anything of the

#### A WORLD OF FOOD

Argo and other stronger cubs that made it out of the cave soon got used to the daylight, and they grew quickly. By the end of summer, Argo weighed 40 kilos. He ate everything he found – grass, mushrooms, roots, eggs from bird nests. He also began to hunt birds. Argo stayed with his mother for two more years, until his baby teeth were replaced by adult teeth. They returned to the cave only in winter, in order to hibernate



### Cave bear

Ursus spelaeus (LIVED 10,000 - 300,000 YEARS AGO)

HEIGHT: 120 cm WEIGHT: 500 kg

#### **BEARS' CAVES**

During the Ice Age, so many bears lived underground that we have come to refer to "bears' caves". In 1975, the bones of more than 100 bears were discovered in Romania's Apuseni Mountains, in what is now known as Peștera Urșilor (Bears' Cave). One and a half kilometres long, it remains a great tourist attraction.



cave bear

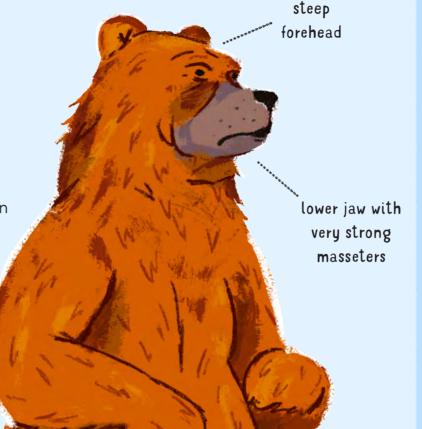


brown bear

#### **MOLARS OF A VEGETARIAN**

Bone finds include many bears' teeth, even entire jaws. From these, palaeontologists have deduced that the cave bear was much more of a vegetarian than today's brown bear. Its flat molars were worn down by constant chewing







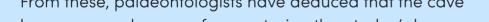
#### SKELETON OF A CUB

So many bones were found in caves that it became possible to assemble entire bears. Skeletons of bears and their cubs from caves are exhibited in museums all over the world, notably in Vienna and Barcelona.



#### WHOSE LAIR IS THIS?

It was best to hibernate deep in the cave, far away from the entrance, where there was complete quiet. Sometimes this meant a onekilometre underground walk. Before lying down, the bear dug the hole for its rest with its strong claws. Scientists have measured these holes at over a metre long but only 20 centimetres deep.



of grasses and shrubs.





C hita the cave lion was born in Siberia 28,000 years ago. In the snow, you would have recognized this fluffy ball from afar. The cub had golden spots. We know this because palaeontologists found a cub that had remained frozen deep in a glacier for tens of thousands of years.

#### LITTLE GIANT

Early this millennium, scientists discovered a lion cub preserved entire in melted ice. 'It looks so calm, it might have just fallen asleep,' they marvelled. The finders named the cub Sparta. Not only was its red fur preserved, but its teeth and claws were too. These were so sharp that an expert pricked himself on them. Sparta fed on mother's milk, preserved in his belly to this day. He was a little under half a metre long and weighed 4 kilos, much more than today's lion cubs.

#### LION NURSERY

Poor Sparta didn't survive into adulthood, but Chita is doing well. He is protected from the cold by a coat similar to that of today's lion cubs, albeit his is much thicker, and against potential attack by his mother. Few animals attacked a lion cub, and no creature ever dared attack a full-grown cave lion. Chita knows nothing more aggressive than pushing and shoving with his fellow cubs. This cat-like behaviour teaches him agility, flexibility and speed, which will be very important to him as an adult male on the hunt.

#### LION TEENAGERS

The young lion will become independent to roam in a pack of young males of the same age, hunting deer and reindeer. If he is brave, he may attack a baby mammoth or a rhinoceros. On reaching adulthood, Chita will weigh as much as 300 kilos. Then he will attach himself to a group of females, which he will rule like a king.





Fred the woolly mammoth was born in remote Siberia. He could have been born in Europe or North America: the woolly mammoth is one of the most widespread large animals of the late Ice Age. Most mammoth remains have been discovered in eastern Asia, where there is permafrost to this day. These remains include whole frozen mammoths!

#### WITH HIS OWN KIND

At birth, Fred weighed about 90 kilos, like today's elephant calf. With several "mothers" around him, he didn't lack company. Mammoth families consisted exclusively of females and their offspring. A group of around ten was headed by one female. Mammoths were social animals that helped each other in times of trouble. Younger mammoths learned from their elders where to find water and how to defend themselves from predators. A wolf, a lion or a hyena might attack a young mammoth, but none would dare attack a healthy adult.

#### FRED'S VARIED DIET

Until age three, Fred was fed on mother's milk, although in his second year he began to nibble at herbaceous plants. This didn't go well at first, so the cub contented himself by chewing on the droppings of adult females, which contained a lot of undigested grass in softened form. This may seem odd, but it isn't unusual: today's elephant calves feed on adults' dropping. Mammoths spent a lot of time feeding. Scientists have calculated that adults ate up to 180 kilos of food a day, taking them about 20 hours. They ate everything – grass, fungi, pinecones, you name it.

#### SEPARATION

Mammoth calves piled on the kilos. Their size doubled in ten years, and their weight became up to 15 times greater than at birth. From a 90-kilo baby, young Fred grew to weigh over a ton. Such a big boy must go it alone. The leading female is adamant on this: he must leave the herd by the age of twelve years. For the rest of his life, a male mammoth will wander alone or in a small group. Like all mammoths, Fred has an excellent memory with a network of trails where he can find water and the best food.



## Woolly rhinoceros

Coelodonta antiquitatis (LIVED 10,000 - 400,000 YEARS AGO)

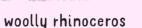
HEIGHT: 170 cm
WEIGHT: 3000 kg



### WHERE ARE THE HORNS?

A woolly rhinoceros horn is a great rarity. Unlike a bison horn, for instance, it isn't composed of bone and horn. It is made of fused fibres of keratin, the same substance as its claws and hair, so it decomposes over time. Even so, palaeontologists have discovered woolly rhino horns in Siberia. From these finds, we know that the large horn was up to 1 metre long, flat and very pointed.



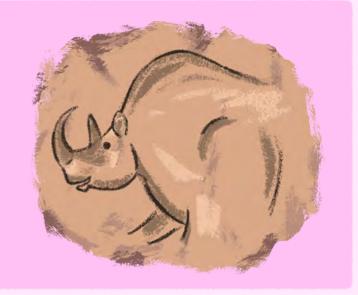




Sumatran rhinoceros

#### **ENERGY-FILLED HUMP**

Having found a frozen baby rhinoceros in Siberia, scientists were intrigued by a 13–centimetre–long hump of fat on the animal's back. They had known about this hump in mammoths but not in rhinos. They concluded that the hump served as an energy store.







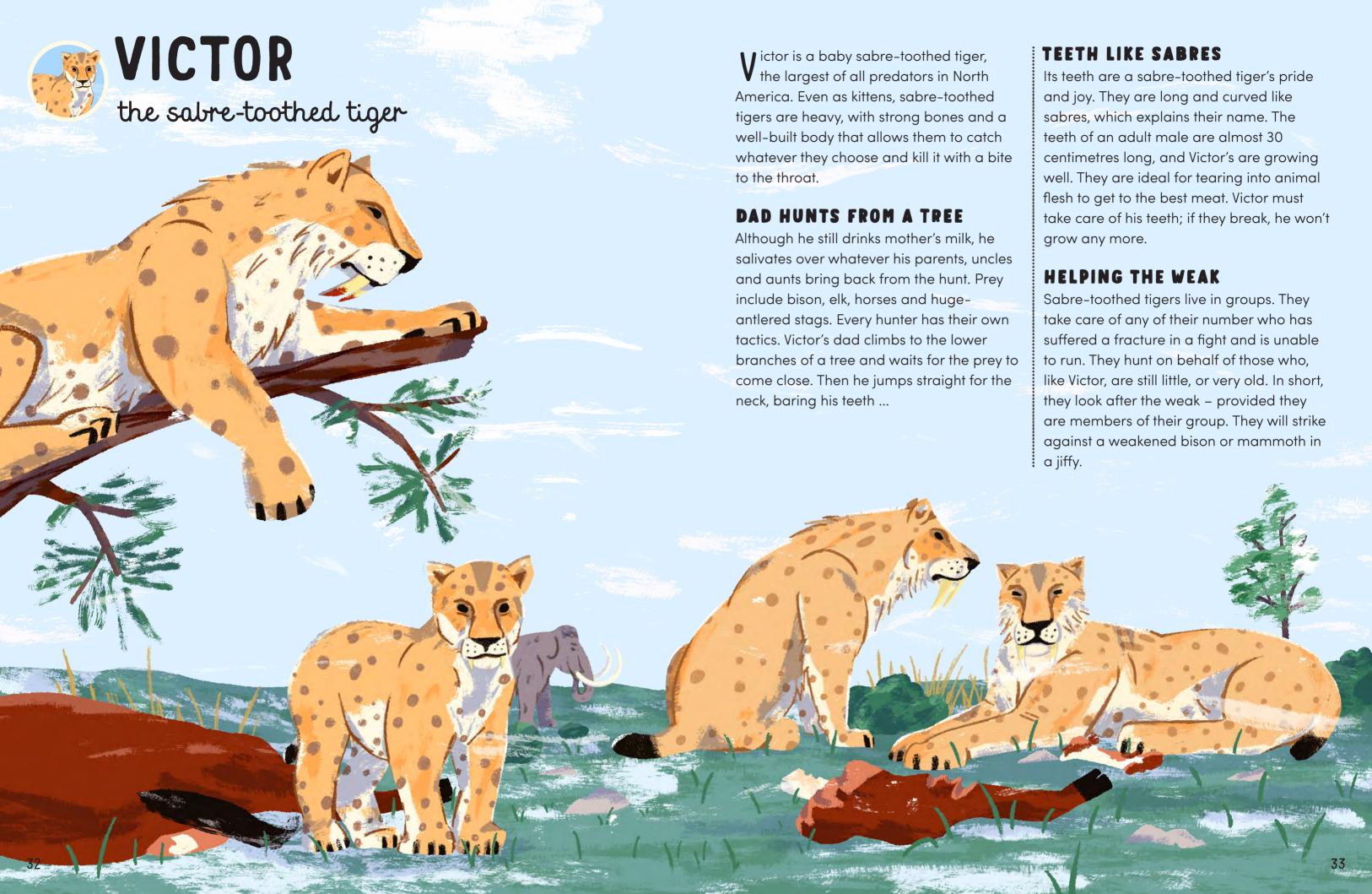
What a woolly rhinoceros ate can be read from its teeth. Obviously, as a herbivore, it ate a lot of grass – and scientists know what kind. In cavities between the teeth, they found a lot of alder and willow. They calculated that a young rhinoceros ate as much per day as four horses eat today.





#### HAZEL COAT

Scientists continue to debate the colour of the prehistoric rhinoceros's coat. We know that the coat was thick and bushy, a protection against frost and wind. It seems it was a light, dirty yellow in young animals and reddishbrown in the full-grown. The colour may have changed over the hundreds of thousands of years. Scientists most often agree on a light hazel colour.



### Muskox

### Ovibos moschatus (HAS LIVED FOR 1 MILLION YEAR AGO)

HEIGHT: 170 cm WEIGHT: 400 kg

#### HARDY NORTHERNERS

Muskoxen were very hardy. But while they could withstand temperatures as low as minus fifty degrees, deep snow was a problem for them. If snow depth exceeded 30 centimetres, they would move on. Though used to cold air, they didn't mind warmer weather. Palaeontologists have found muskox bones in the milder climates of today's central Europe and on the Iberian Peninsula. In summer, they sought out river valleys for their damp conditions.





found in bears' caves, too.

In summer, muskoxen moved around in small groups only. In winter, they formed herds of several dozen members, so improving their defences against predators. This didn't always work out, however. According to scientists, persistent wolves could kill up to half of the herd.

Muskoxen bones have been





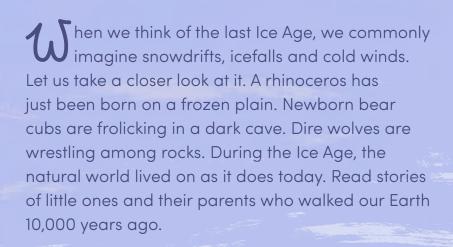
Muskoxen roamed northern parts of Asia, Europe and North America, where the ground tended to be covered in snow and ice, so there wasn't much to eat. They made do with dry grass, lichens and mosses. In winter, they sought out plateaus where Arctic winds blew away the snow to reveal stunted willows. If they happened upon fresh, juicy grass, naturally they preferred this, because it was more nutritious.



As the muskox lives on in Greenland and Canada, we know much more about it than we do about animals that are now extinct. Like its prehistoric ancestor, today's muskox is very dangerous. When it feels threatened, it will pant and snort. It runs at antagonists at such speed that a human with a hundred-metre head start is in serious trouble. It is advisable to observe muskoxen from a distance of at least 200 metres.









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