



Museum of Zoology, University of Cambridge

Young Zoologists Club

Autumn 2020

Hello Young Zoologists!

Welcome to the Autumn 2020 edition of the Young Zoologists Club Newsletter! We've not been able to write to you as often as usual, so we are really excited to be able to share a newsletter with you again.

We have news of online activities, new trails, and a special opening just for Young Zoologists and their families in October half term. We look forward to welcoming you back to the Museum soon!

The YZC team.

Young Zoologists: Exploring the Museum

Tuesday 27 October

11.30am - 1pm or

1.30pm - 3pm.

The Museum is open to the public, with pre-book tickets and limited numbers to keep everyone safe. But in October half term we have a special opening just for Young Zoologists and their families. In return, we would love to know your favourite specimens on display so we can put together a Young Zoologists trail of the Museum. Bookings open Saturday 10 October at 12 noon. Booking is through the Young Zoologists Club website:

youngzoologistsclub.wordpress.com

The password when prompted is **Darwin**. All children must be accompanied, and **all** members of your party will require a ticket (adults as well as children).



NEWS ALERT! New Museum Trails

We have a number of new trails around the Museum and around Cambridge city. Download them from our blog:

museumofzoologyblog.com

Nature Classroom

Visit the **Nature Classroom** on our blog for fun science activities, from designing your own warning colours to investigating habitats and becoming a shell detective.

[museumofzoologyblog.com/
category/nature-classroom/](https://museumofzoologyblog.com/category/nature-classroom/)

Crafty Creatures

Here you can find animal-themed makes. Why not make a badger mask, create a pom pom bumblebee, or build a beetle?

[museumofzoologyblog.com/
category/crafty-creatures](https://museumofzoologyblog.com/category/crafty-creatures)

Show us your makes by emailing us at:
umzc@zoo.cam.ac.uk

and feature in our Community Gallery

Online Events









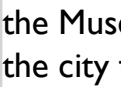
Keep an eye on our blog for news of more online events coming up, catch up with our BioBlitz livestream with bee expert Dr Lynn Dicks, and watch our Zoology Live programmes again.

Spot the Difference: Sloths

For October half term, we have a special sloth search in the galleries. But how well do you know your sloths? Can you tell your two-toed from your three-toed sloth?





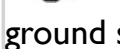
Two-toed Sloths, *Choloepus*



-  Two clawed toes on the front legs, but three on the back.
-  Bigger, weighing up to 8kg and measuring up to 70cm long.
-  Front and back legs are about the same length.
-  Usually six bones in the neck.
-  46 ribs.
-  No tail or stubby tail.
-  Nocturnal - active at night.
-  Bigger eyes.
-  Coat is longer, shaggier and usually paler.

Three-toed Sloths, *Bradypus*



-  Three clawed toes on each leg, front and back.
-  Smaller, weighing up to 4.5kg, and measuring 45cm long.
-  Front legs much longer than back legs.
-  Up to nine bones in the neck.
-  28 ribs.
-  Short tail.
-  When awake, active in the day.
-  Dark stripes around the eyes like a bandit mask.
-  More closely related to giant ground sloths than to two-toed sloths.

Cambridge Safari

In Cambridge but don't have a ticket for the Museum? Why not go on safari around the city finding the animals in the buildings. There are loads of them when you start to look! Download the trail from our blog, and let us know of any other animals you spot.

<https://museumofzoologyblog.com/2020/09/21/cambridge-safari/>



Focus On: Amazing Adaptations

Amazing animal adaptations feature in every Young Zoologists newsletter, but what are they? From a predator's big teeth to the camouflage of their prey, adaptations are features that make animals better suited to where they live and the way they live. Read on to find out about some of the amazing animal adaptations on display in the Museum...

Did you know?



There are pleats along the throat of a fin whale - you can see them as lines running along the underside of the body. These expand so the whale can take an even bigger mouthful of water when feeding.



A fin whale's filter feeding is so good, they are able to eat up to 2,000kg of krill and other foods every day!



A fin whale can dive to depths of 250m, and stay underwater for up to 15 minutes at a time.



Fin whales are sometimes called the greyhounds of the sea as they are so fast at swimming, reaching speeds of up to 25 miles per hour.



Fin whales are big from birth, a newborn calf measuring 6m in length and weighing around 1,800kg.

Every living thing is adapted to its way of life. Here are some of the adaptations of the biggest animal in the Museum - our fin whale.

Whales live in the ocean, and have a streamlined shape to help them to slice through the water. Their hands have become flippers - another adaptation for swimming.



What about breathing? Whales' nostrils have moved to the top of the head, forming the blow hole, to make breathing easier. They also have adaptations in their body chemistry, heart etc. that means they can cope with breathing less often.

What about the way they feed? The fin whale is a type of baleen whale - instead of teeth, its jaws are lined with bristly baleen plates made of the same stuff as our hair and fingernails. To feed, they take a huge mouthful of water and then squash it out through the baleen plates, which filter out tiny bits of food. This makes for a great way of catching lots of small items of food in one go.

We have put together a brand new trail of the Museum for you to download celebrating some of the amazing animal adaptations you can see when you visit. Find out more about these adaptations in the pages of this newsletter...

Amazing Adaptations in the Museum

Here are just a few of the amazing animal adaptations on display in the Upper Gallery of the Museum. Can you think of any others?

Starfish

Feeding

Starfish may look like Christmas decorations, but they are voracious



predators. And their way of feeding can be pretty gross. The mouth is on the underside of the animal. A starfish will push its stomach out through the mouth to present their prey with digestive juices, essentially digesting their food outside of their bodies. The starfish in the picture is called a crown of thorns starfish - so named because of its prickles. It feeds on corals in this way, and if their numbers get out of hand, crown of thorns starfish can destroy large areas of coral reef.

Cone Snails

Cone snails - another group of pretty-looking sea creatures hiding a rather gruesome feeding



adaptation. When you see the word 'snail' you may be thinking slow and eating lettuces. Cone snails are predators, and they can catch fast-swimming prey. They lie in wait on the sea floor, and when something swims by that they want to eat, they shoot out a harpoon made out of a structure called the radula. This harpoon is tipped with venom, paralysing or killing their prey. This venom can be dangerous to people as well, so don't pick these shells up unless you're sure they are empty.

Surinam Toad

Pipa pipa

This toad has an amazing way of keeping its babies safe as they grow.



The female lays her eggs, which then attach to her back, her skin growing around them so the eggs become embedded there. Here her babies develop. When they are ready, they pop out of her back as little toads with four legs, not as tadpoles with a tail. This leaves behind the tell-tale pock-marks on the back of the toad, until she slowly sheds this layer of skin and starts all over again. This is just one of many amazing amphibian adaptations.

Leaf Insect

Take a look at the insects on display and you can see some remarkable colours and patterns. Some



are brightly coloured to warn predators not to eat them, while others are brilliantly camouflaged. Leaf insects show some of the most extraordinary camouflage out there. Not only are they coloured like leaves, but their cuticle (the outer skeleton of an insect) forms the shapes of leaves, down even to the veins. And then the way a leaf-insect moves, with a little wiggle to make it look like a leaf in a breeze, makes the image complete.

Amazing Adaptations in the Museum

Here are just a few of the amazing animal adaptations on display in the Lower Gallery of the Museum. Can you think of any others?

Platypus *Ornithorhynchus anatinus*

The platypus is from Australia, and is one of the few mammals to lay eggs. It is sometimes called a duck-billed platypus thanks to its flat, leathery snout. But what does its bill do? A platypus bill is home to cells that can sense the little electrical signals made by animals underwater. This helps them to find their prey. Other underwater adaptations include their webbed feet and flattened tail a bit like a beaver's to help it swim and steer, and they can close up their nostrils and cover their eyes and ears to keep the water out.



Dromedary *Camelus dromedarius*

The dromedary is a camel with a single hump. But where is the hump in our specimen? The hump of a camel is made of fat, which can be broken down for energy and water when times are hard. There is no bone inside the hump, so it isn't there on our skeleton. A camel's hump is just one of many adaptations these animals have for life in the desert. They have long eyelashes to keep sand out of their eyes, close up their nostrils to keep sand out of the nose, and their feet splay out to keep them from sinking in sand underfoot.



Giraffe *Giraffa camelopardalis*

Giraffes can reach the leaves at the tops of trees thanks to their long necks. If you were to count the number of bones in the neck, you would find there are seven. This is the same number as you have in your neck, and the number of bones in the necks of most mammals. A giraffe's long neck comes from each bone being longer, rather than there being more bones. Giraffes also have a very long tongue, that they can wrap around leaves to pull them from the branches.



Emperor Penguin *Aptenodytes forsteri*

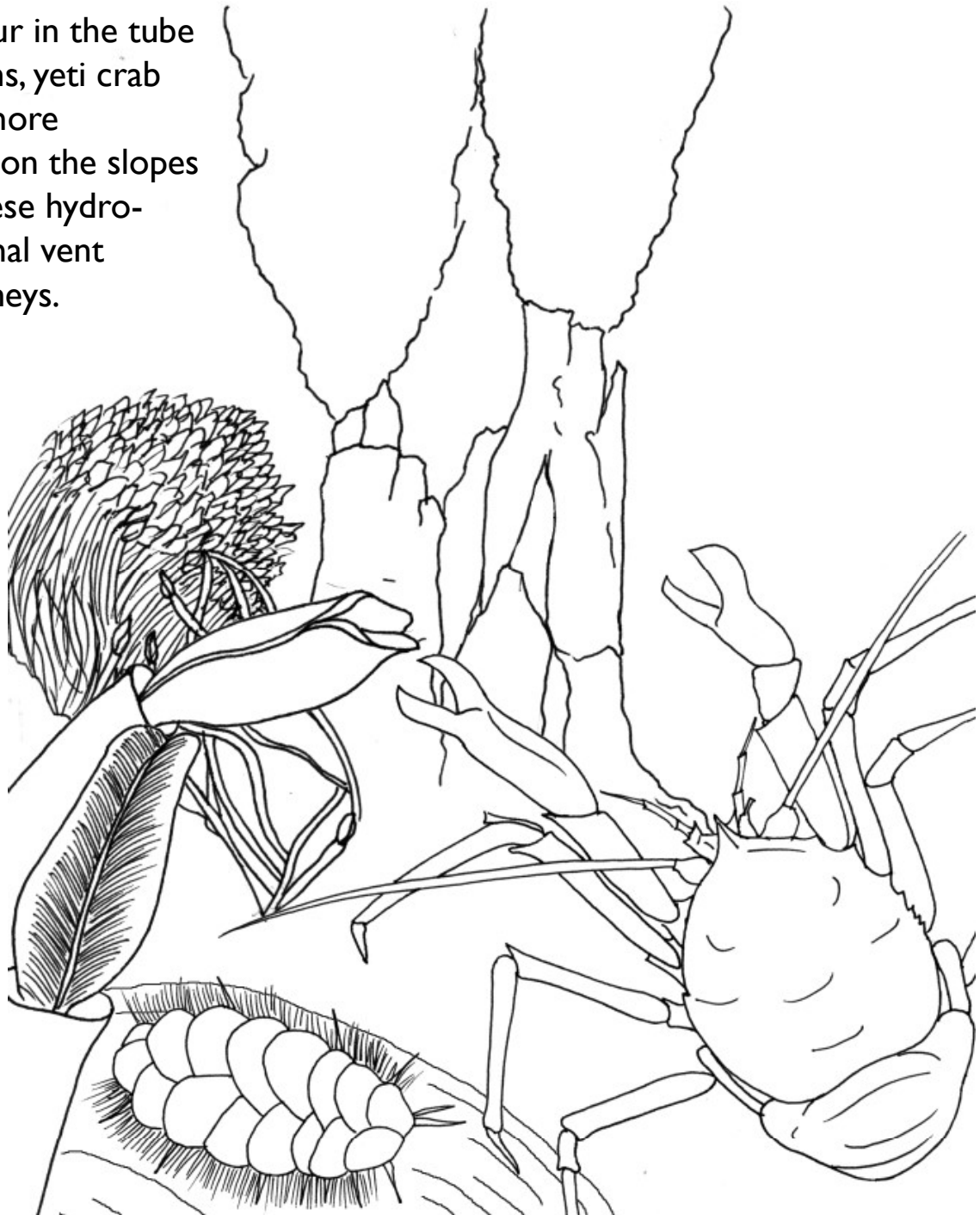
Another animal from an extreme environment, emperor penguins live in and around Antarctica. They even breed there over winter, when it can get really cold – often below -35°C . As well as feathers, they have a layer of blubber under the skin to trap heat, and penguins will huddle together to keep warm. The blood vessels in the legs and flippers are also arranged so that the warmth from the blood coming from the heart passes to the blood going back into the body from the toes.



Colour in the Deep Sea Creatures

People have yet to explore all of the deep ocean floor. Here it is cold and dark, and the pressure of the water immense. While much of the ocean floor is like a desert, with few animals living there, there are areas that are teeming with life. These are around structures called hydrothermal vents, where hot water filled with chemicals is spewed into the ocean, providing energy for a whole ecosystem to survive...

Colour in the tube worms, yeti crab and more living on the slopes of these hydrothermal vent chimneys.



Puzzle Pages

Find the animals and adaptations in the wordsearch below...



T S W M C B L Q U
 C T C O N E S N A I L
 R V A P G I G A Q J F D
 E J R M B N I U G N E P
 B R F R O A R L L M A L
 B A I V S U A G U R T A
 U E S T A L F F E A H T
 L T H O R B F L W S E Y
 B L U W E A E A A Z R P
 E Z O E M L P G X G S U
 N D R O M E D A R Y E S
 S M N A S E H W T K F
 P E L F I N W H A L E
 V C E M L U J A R D L



- BALEEN** What fin whales have instead of teeth
- BLUBBER** A layer of fat under the skin to keep animals warm in cold places
- CAMOUFLAGE** Colours and patterns that help you to blend in with the background
- CONE SNAIL** Snails with a killer harpoon to catch their prey
- DROMEDARY** A camel with just one hump
- FEATHERS** Keep birds warm, and make their wings so they can fly
- FIN WHALE** The skeleton that welcomes you to the Museum
- GIRAFFE** Mammal with a long long neck to reach leaves at the tops of trees
- PENGUIN** Emperor penguins can cope with the extreme cold of Antarctica
- PLATYPUS** Egg-laying mammals with electrosense
- STARFISH** Predators that push their stomachs out through their mouths
- VENOM** Toxins that are injected into prey or used in defence.

In the Frame – find out what real-life zoologists do!

Name:	Charles Emogor
Favourite Animal:	White-bellied pangolin



What do you do?

I am a PhD student studying the ecology and trade of the white-bellied pangolin. My research involves finding, tagging and monitoring pangolins to get information on the size of their home and working with hunters to understand the scale of pangolin exploitation. Pangolins are the world's most trafficked wild mammal whose scales are used in traditional medicines and meat for food.

How did you get into Zoology?

I grew up in a small village in Nigeria and was lucky to interact with nature from a very young age. I enjoyed reading outdoors and exploring the bushes around. However, during my early teenage years, these wild places and the animals I saw were fast disappearing. I learnt through National Geographic Wild that people can work to protect the natural world as a career. I went on to study Forestry and Wildlife Management and volunteered with the Wildlife Conservation Society to support their work with Cross River gorillas in Nigeria. I later did a post-graduate diploma in Endangered species Management and a Masters in Biodiversity Conservation and Management.

Favourite subjects at school

Biology and other natural-science related subjects.

Best moment?

The first time I saw the first live pangolin after a decade of being a pangolin enthusiast and years of seeing their carcasses and scales in wild meat markets.

Worst moment

One night during a Cross River gorilla monitoring field trip in the rainforests, the wind was so heavy that it pushed our tent out of place and not long after that, the rain came. It was a cold, horrible and messy night. One that I will never forget.

Top tips for young zoologists

There's no greater feeling of fulfilment than knowing that you helped save a species that would have gone extinct if left to its fate. There are hundreds of people in the world that have dedicated their lives to save wild animals, so you won't be alone. Also, zoology is cool. Follow your passion.

Find out more about Charles' work at:

<https://museumofzoologyblog.com/2020/09/10/conserving-pangolins/>



Museum of Zoology

Downing Street,

Cambridge CB2 3EJ

01223 336650

www.museum.zoo.cam.ac.uk