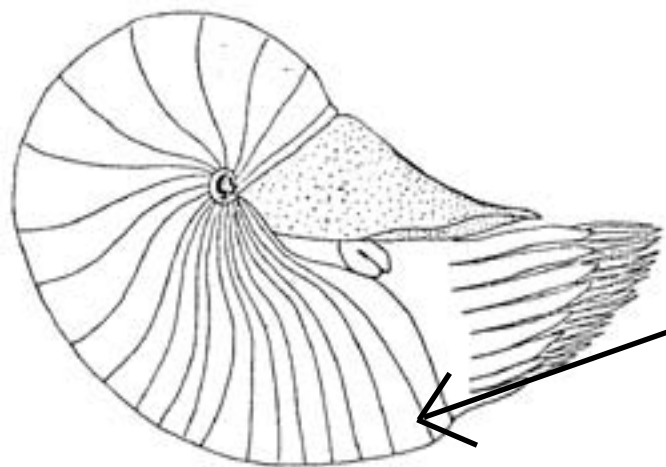


The Fossils Speak - Plate tectonics explained by dinosaurs!

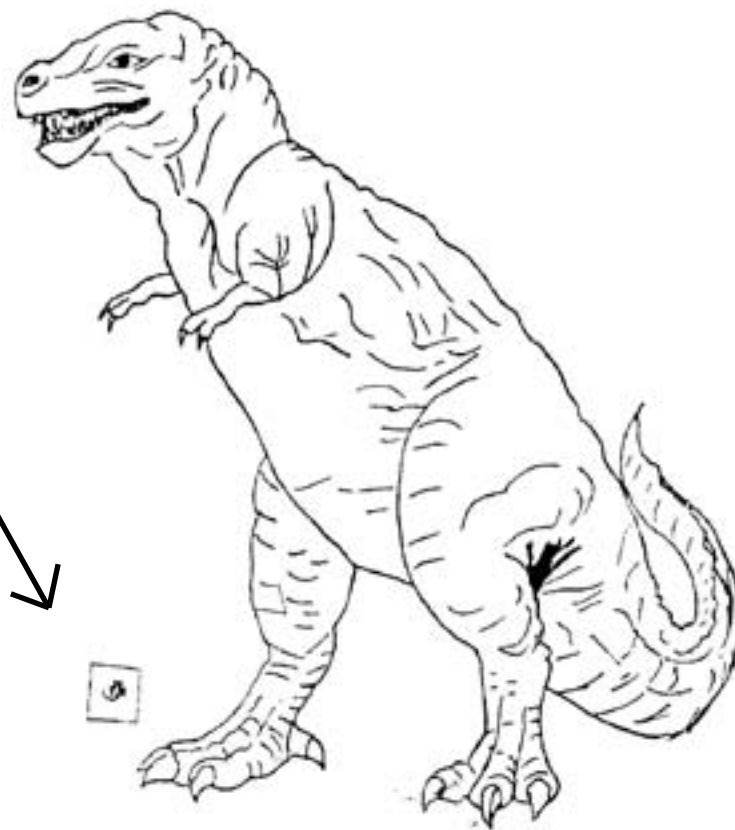
I am a Nautilus. I lived 500ma ago and I still live today in warm seas. My fossil shells have been found in Britain. When I was alive Britain was very warm. I was where Porto Alegre in Brazil is now. I swam in the sea and ate small animals.



I am a cat! You can find out how big the animals were by looking at how big I am in each picture.



I am a Tyrannosaurus Rex. I lived 100ma. My fossil bones have been found in Britain. When I was alive Britain was very warm. It was where Bermuda is now. I was a fierce predator, and I hunted for food.



The Fossils Speak

This activity was developed by Jan Garren and the Geography department at Kingsland School in Hackney in 1983. It is a good example of an activity that builds on the students' interest and knowledge of one topic (dinosaurs) to introduce knowledge in a new topic (tectonic plates). The online version now includes pictures and an optional map.

The webaddress for this activity is <<http://www.collaborativelearning.org/fossilsspeak.pdf>>

This activity was last updated October 2007

COLLABORATIVE LEARNING PROJECT

Project Director: Stuart Scott

Supporting a cooperative network of teaching professionals throughout the European Union to develop and disseminate accessible teaching materials in all subject areas and for all ages.

17, Barford Street, Islington, London N1 0QB UK Phone: 0044 (0)20 7226 8885 Fax: 0044 (0)20 7704 1350

Website: <http://www.collaborativelearning.org>

BRIEF SUMMARY OF BASIC PRINCIPLES BEHIND OUR TEACHING ACTIVITIES:

The project is a teacher network, and a non-profit making educational trust. Our main aim is to develop and disseminate classroom tested examples of effective group strategies across all phases and subjects. We hope they will inspire you to use similar strategies in other topics and curriculum areas. We run teacher workshops, swapshops and conferences throughout the European Union. The project publishes a catalogue of activities plus lists in selected subject areas, and a newsletter available by post or internet: "PAPERCLIP".

*These activities were influenced by current thinking about the role of language in learning. They are designed to help children learn through talk and active learning in small groups. They work best in mixed classes where children in need of language or learning support are integrated. They are well suited for the development of speaking and listening. They provide teachers opportunities for assessment of speaking and listening and other formative assessment.

*They support differentiation by placing a high value on what children can offer to each other on a particular topic, and also give children the chance to respect each other's views and formulate shared opinions which they can disseminate to peers. By helping them to take ideas and abstract concepts, discuss, paraphrase and move them about physically, they help to develop thinking skills.

*They give children the opportunity to participate in their own words and language in their own time without pressure. Many activities can be tried out in mother tongue and afterwards in English. A growing number of activities are available in more than one language, not translated, but mixed, so that you may need more than one language to complete the activity.

*They encourage study skills in context, and should therefore be used with a range of appropriate information books which are preferably within reach in the classroom.

*They are generally adaptable over a wide age range because children can bring their own knowledge to an activity and refer to books at an appropriate level. The activities work like catalysts.

*All project activities were planned and developed by teachers working together, and the main reason they are disseminated is to encourage teachers to work effectively with each other inside and outside the classroom. They have made it possible for mainstream and language and learning support teachers to share an equal role in curriculum delivery. They should be adapted to local conditions. In order to help us keep pace with curriculum changes, please send any new or revised activities back to the project, so that we can add them to our lists of materials.

The Fossils Speak

Teachers' notes

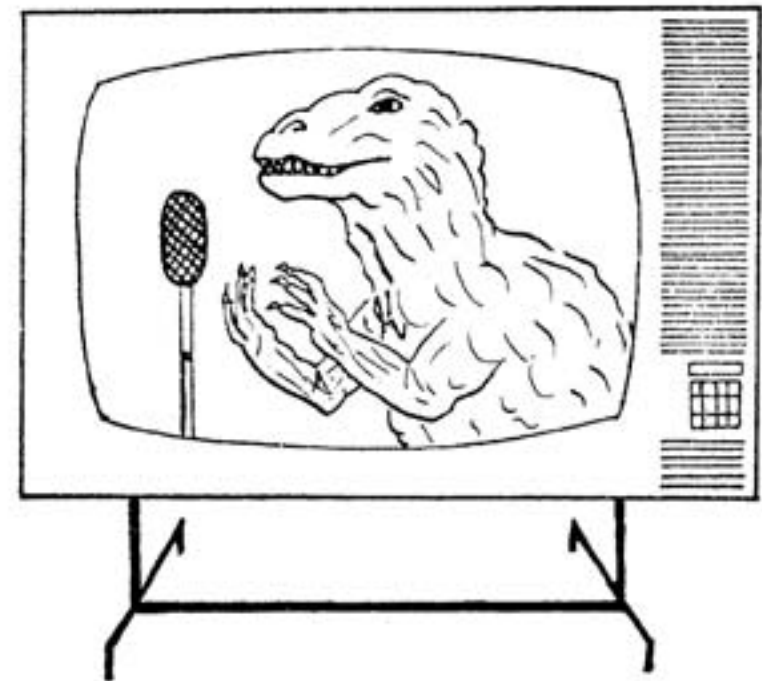
We have now added dinosaur line drawings and a map. The map has not come out very well online, and you may want to produce your own. We have therefore left off the coordinates for the places where the animals lived since your map coordinates will be different. If you want to use the online map and add them, here they are:

Nautilus 114558, Palaeothonus 115560, Agnathid 111562, Labyrinthodont 112564, Cynognathus 124569, Stegosaurus 111572, Tyrannosaurus 112574, Diatryma 117575, We found it useful to provide a picture of a cat drawn to scale on each page since some creatures were very big and some very small.

Students had the A4 map of the world with coordinates and a temperature grid down one side. Under each fossil statement, we provided a grid reference. We also provided atlas clues so that students could track down the places by using the index.

This activity was first developed in 1983 (you can work this out by looking at the picture of the television!), but has been used extensively since then. In some cases students have produced their own versions of this activity using other animals. Please send any elegant versions back to the project.

The Fossils Speak



Work on Climates.

The fossils have given you information about the climates in which they lived.

Use the key below to shade the temperature chart at the side of your world map. Label each as well.

very hot	colour this red
hot	colour this orange
very warm	colour this purple
warm	colour this blue
cool	colour this grey
cold	colour this white

Think of a really good title for your map.

Now go back to the first activity you did and see if your predictions were true.

Cross out any statements you now think are wrong. Write down any statements you missed out.

Now try to write some statements of your own.

Activity One - Prediction Activity

What do you know about Britain in the past? You may have done some work on fossils and dinosaurs before.

Decide which of the following statements may be true or false.

There used to be tropical forests in Britain.
Dinosaurs roamed through London.
600 ma ago the world was much hotter than it is today.
Britain used to be where the Falkland Islands are now.
A fossil of a koala bear was found in Canada.
The world used to be nearer the sun.
Hippopotami once basked in the Thames.
Britain has travelled more than 3000 miles/5000 km over the last 600 ma.
Volcanoes have erupted in Britain many times in the past.
Part of Britain used to be covered by the sea.
Write down the statements you think are true.

Activity Two - The Fossils Speak!

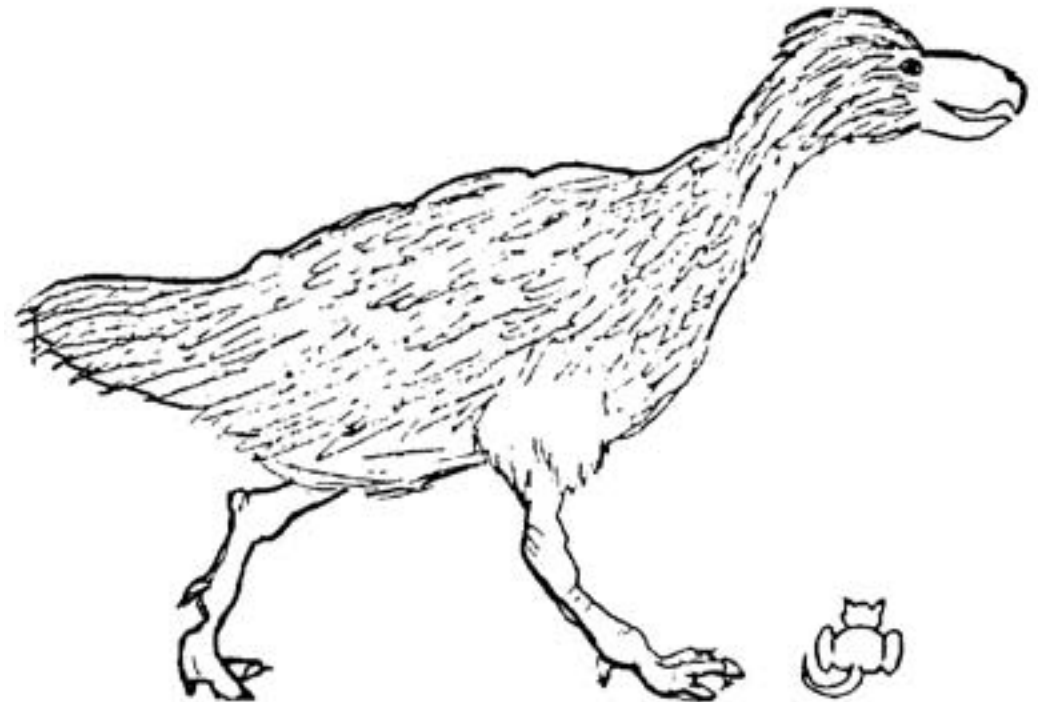
You will need a map of the world which has been divided into grids.

Look at the pictures of fossils on the next nine pages. Each one of them gives you some information about Britain's location in the past.

Using the grid reference given by each fossil, plot Britain's position at each given time. Do this by drawing a Δ on your world map at each point.

Write next to each triangle the name of the place and the number of years eg 400ma Rio de Janeiro.

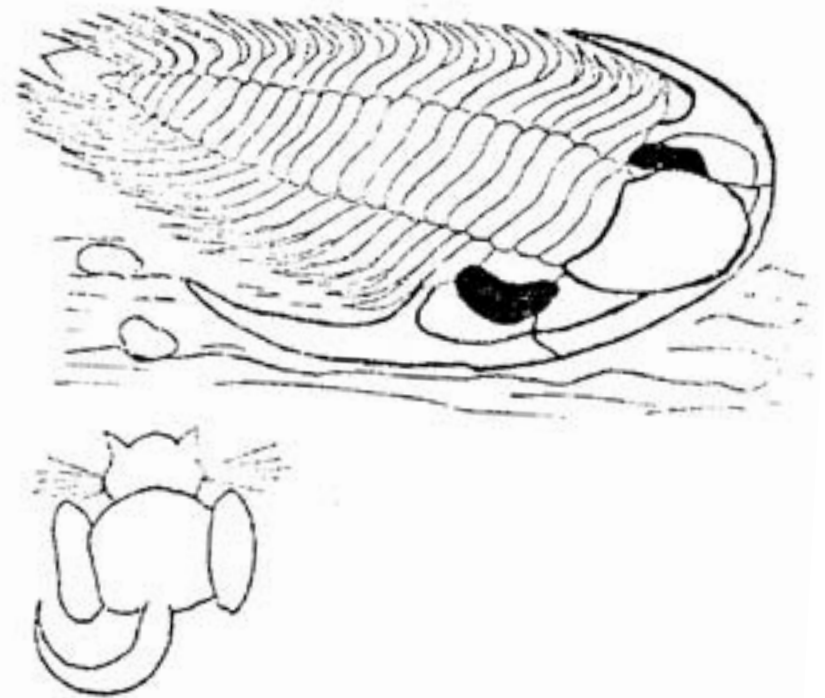
I am a Diatryma. I lived 50 ma ago. My fossil bones were found in Britain. When I was alive Britain was warm. It was where the Azores islands are now. I ate small creatures. I could not fly, but I could run very fast to catch my food.



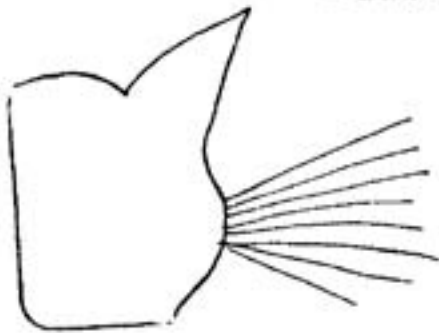
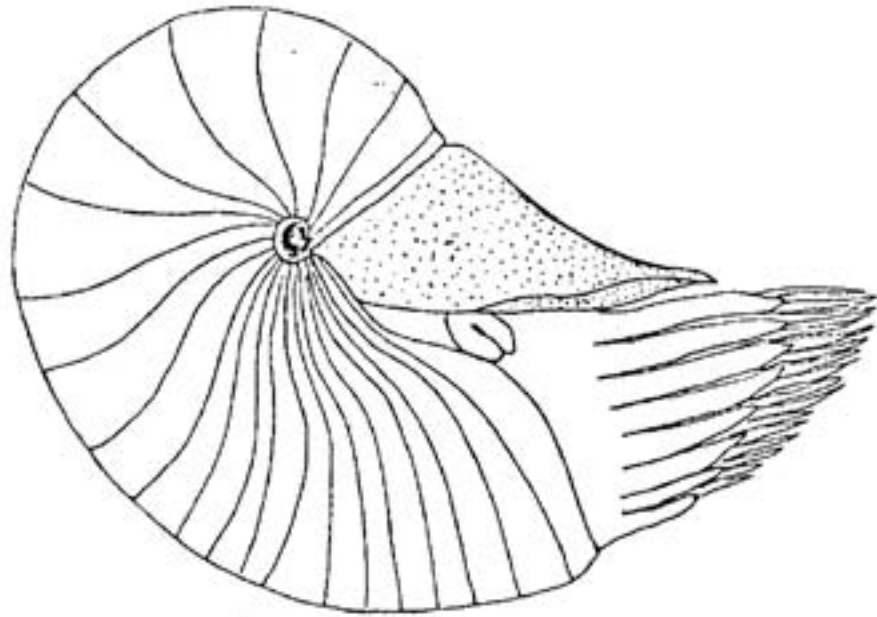
I am a Tyrannosaurus Rex. I lived 100ma. My fossil bones have been found in Britain. When I was alive Britain was very warm. It was where Bermuda is now. I was a fierce predator, and I hunted for food.



I am a Trilobite. I lived 600ma ago. My fossil skeletons were found in Britain. When I was alive Britain was warm. It was where Buenos Aires is now. I lived on the sea bed in shallow water. I crawled in the mud and ate tiny marine creatures.

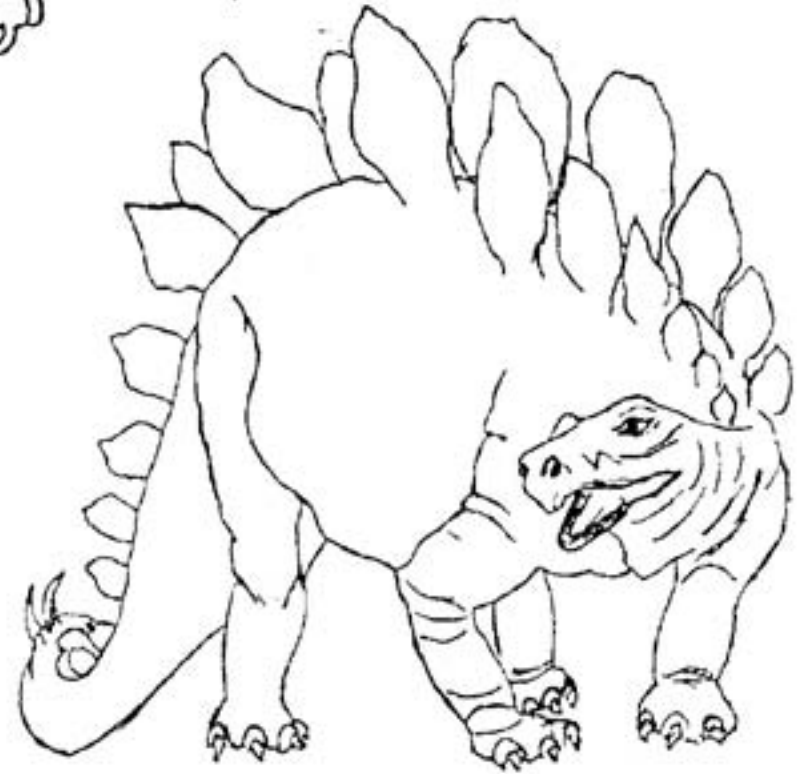


I am a Nautilus. I lived 500ma ago and I still live today in warm seas. My fossil shells have been found in Britain. When I was alive Britain was very warm. I was where Porto Alegre in Brazil is now. I swam in the sea and ate small animals.

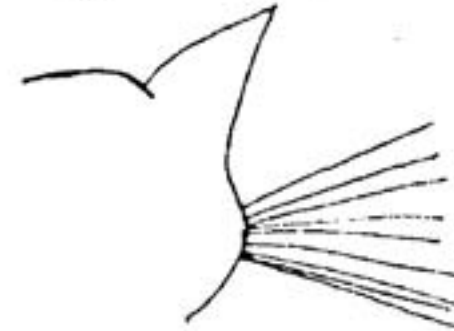
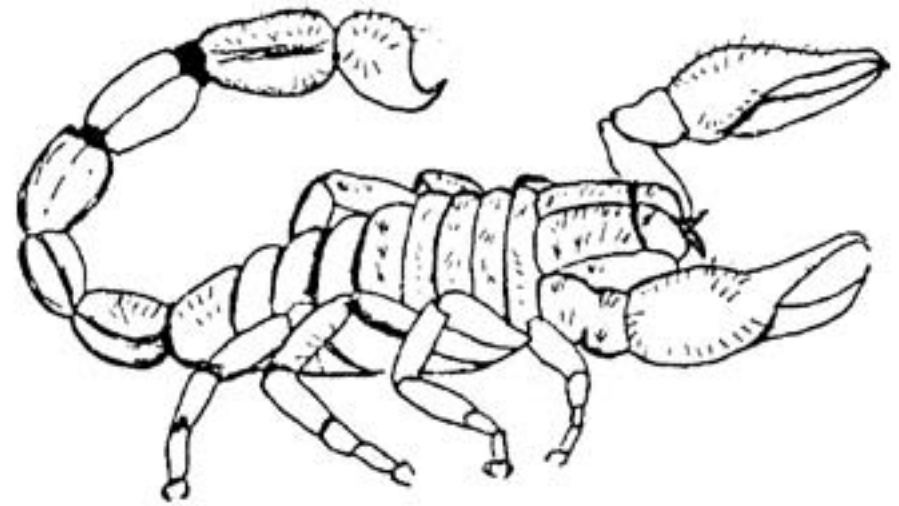
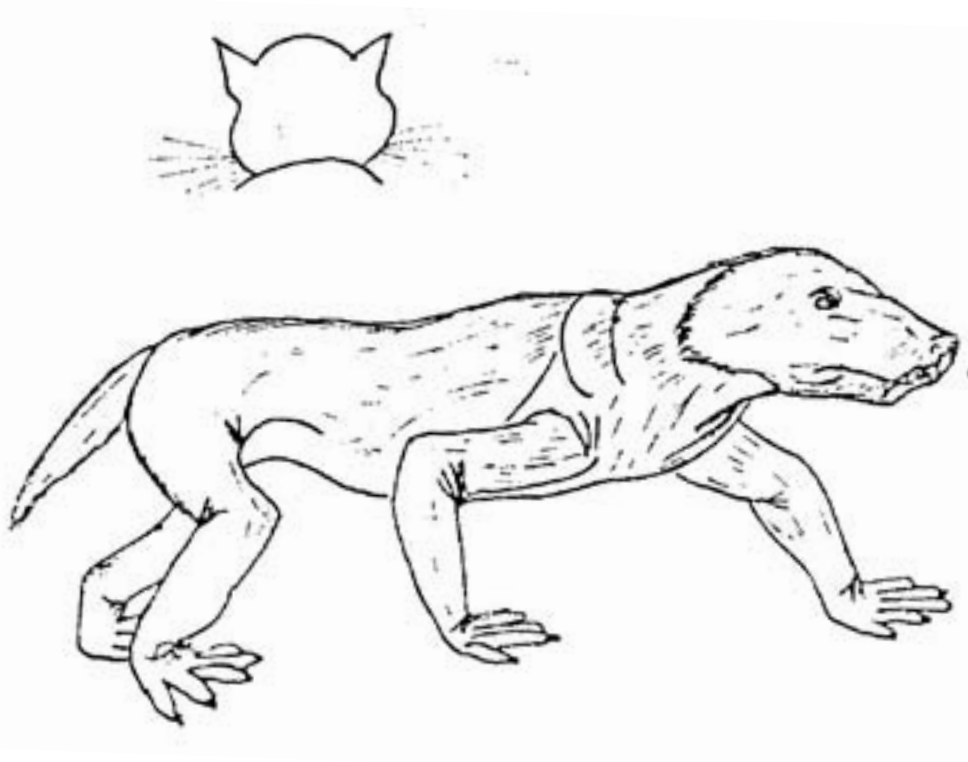


I am a cat! You can find out how big the animals were by looking at how big I am in each picture.

I am a Stegosaurus. I lived 200 ma ago. My fossil bones were found in Britain. When I was alive Britain was very warm and quite humid. It was where the Bahamas are now. I lived in a swamp and ate plants. I lived in swamp and ate plants.

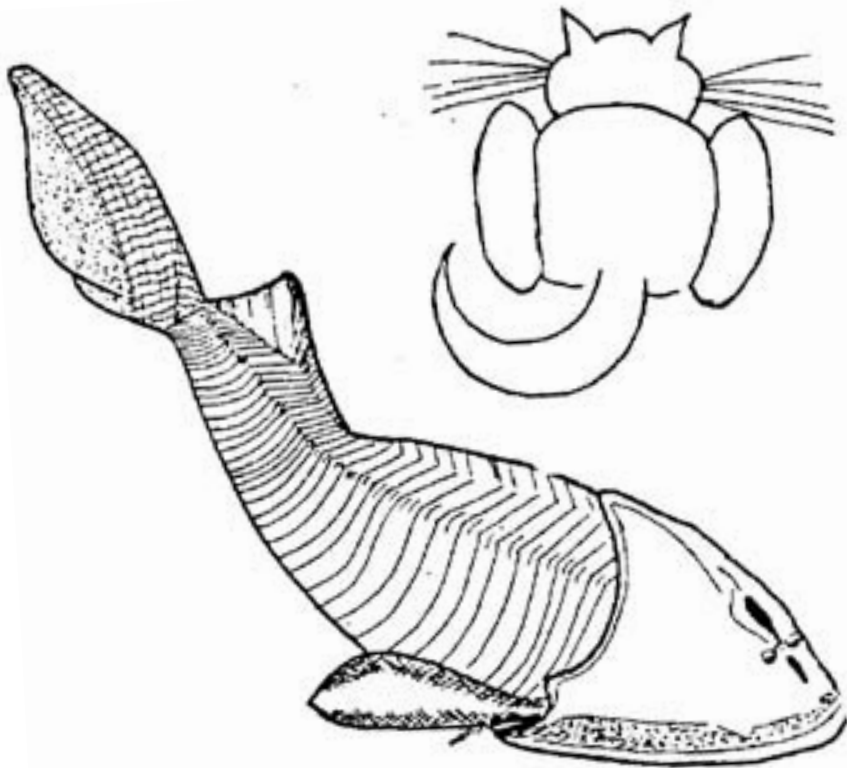


I am a *Cynognathus*. I lived 250 ma ago. My fossil bones have been found in Britain. When I was alive Britain was a hot desert with salt lakes. It was where Khartoum is now. I had a furry coat and I was warm blooded.



I am a *Paleophonus*. I lived 400 ma ago, and I was the first animal to live on land. My fossil skeletons have been found in Britain. When I was alive, Britain was hot. It was where Rio de Janeiro is now.

I am an Agnathid. I lived 350 ma ago. My fossil bones have been found in Britain. When I was alive Britain was a hot desert. It was where Lima in Peru is now. I lived in freshwater lakes and ate other small water creatures.



I am a Labyrinthodont. I lived 300 ma ago. My fossil bones were found in Britain. When I was alive Britain was very hot and rainy. It was where Manaus in the Amazon is now. I lived partly in water, partly on land in tropical swamps. I ate fish.

