



# The Ichthyosaur

The Mesozoic Era of Earth's history, which lasted from about 251 million – 66 million years ago, has been called The Age of Reptiles. Dinosaurs roamed the land, pterosaurs ruled the skies, and giant reptiles lived in the seas. The Ichthyosaur (Greek for “fish lizard”) was one of the most numerous of these aquatic reptiles. It was a skilled hunter, and became the top marine predator of its time. They were among the first skeletons to be found by early fossil hunters, and became popularly known as “sea dragons” during the 1800s.



*An Ichthyosaur fossil*

More than 80 different types of ichthyosaur have so far been discovered, from all over the world. They were most abundant and varied during the Triassic and Jurassic Periods (251 million – 146 million years ago). Ichthyosaurs became extinct about 95 million years ago, during the Upper Cretaceous Period, some 30 million years before the dinosaurs. They are distant relatives of today's lizards and snakes.

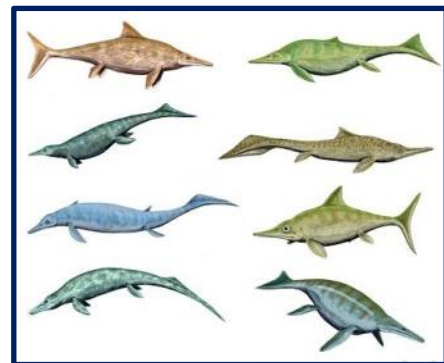
Ichthyosaurs first appeared around 250 million years ago. They evolved from a group of unknown land reptiles which returned to the sea. Although they lived at the same time as dinosaurs, ichthyosaurs are from a different part of the reptile family tree. Their appearance and habits would remind you of seals, dolphins and porpoises. Ichthyosaurs were air-breathing, just like marine mammals, and had to surface regularly.

It is unlikely that ichthyosaurs ever came on land. If stranded ashore, they would have been as helpless as beached whales or dolphins are today. Ichthyosaurs gave birth to live young in the water rather than laying eggs like most reptiles. Some adult fossil specimens have been found with young inside the mother's body cavity.

## A streamlined killing machine

Ichthyosaurs were superbly adapted for life in the sea. Like dolphins, they were designed for speed. The head ran smoothly into the body, with little or no neck, a typical feature of fast-swimming predators.

They steered using their paddle-like flippers and - if they had one - the dorsal fin on top of the body. Early ichthyosaurs swam by rippling from side to side, while later species used their powerful fish-like tails. Their heads were pointed and their jaws were long, narrow and full of sharp teeth.



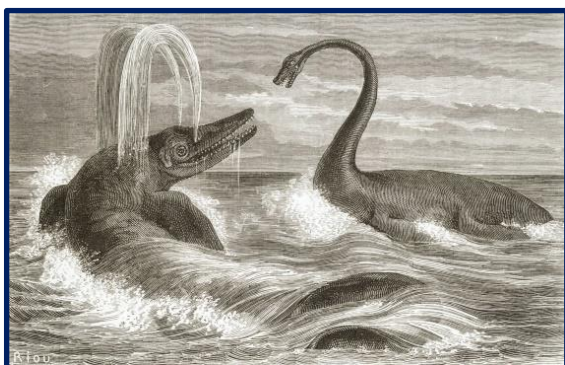
*Different types of Ichthyosaur © Nobu Tamura*

Many species of ichthyosaur had conical teeth to help them catch fast-moving prey. Some had teeth shaped like blades to attack large creatures. Huge eyes helped them spot their prey at long distances or when hunting in deep, dark waters. Their nostrils were set far back on top of the head, like dolphins and whales. This made it easier for an ichthyosaur to breathe when surfacing for air.

Ichthyosaurs ruled the oceans for 150 million years. Most species ranged between one metre (three feet) and 15 metres (49 feet) in length. The biggest species is thought to have measured 21 metres (69 feet) long. Ichthyosaurs varied so widely in size, and survived for so long, that they probably preyed upon many different creatures. Fossilised stomach contents and fossilised dung called coprolites show that ichthyosaurs fed on fish; shellfish; squid-like creatures called belemnites and ammonites; turtles; and small reptiles. Smaller ichthyosaurs could be eaten by larger ones. Some hunted near the shore, while others preferred the deep waters of the open ocean. Some ichthyosaurs may have leapt above the waves like dolphins to catch their prey.

### Extinction

No one knows for certain why ichthyosaurs became extinct. They may have faced increased competition for food from their natural enemies. These included sharks, early types of marine crocodile, and other large aquatic reptiles called plesiosaurs. This competition came at a time when established sources of food such as ammonites and belemnites were disappearing. Perhaps the ichthyosaurs could no longer catch the faster types of fish that had evolved. The most likely reason for the ichthyosaurs' extinction, however, is environmental change. Around 95 million years ago oxygen levels in the oceans fell dramatically, probably caused by increased underwater volcanic activity. The oxygen was replaced by poisonous gases such as carbon dioxide and hydrogen sulphide. Many marine species, including the ichthyosaurs, could not survive in this hostile environment.



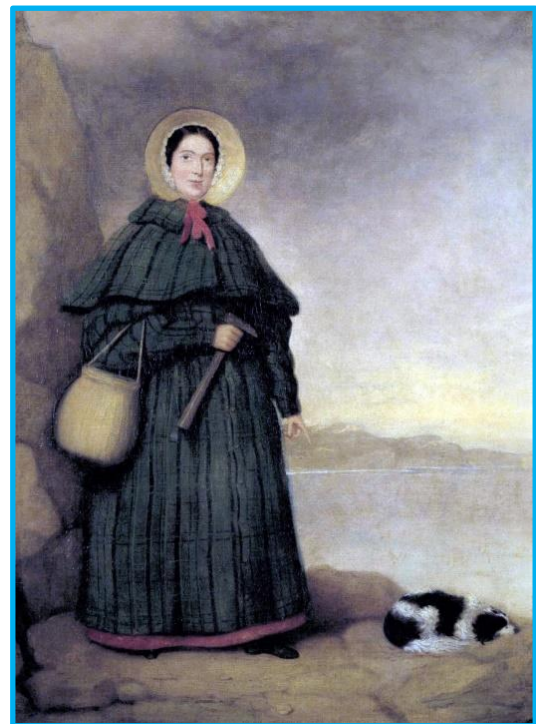
*An Ichthyosaur and Plesiosaur shown fighting, 1863*

The plesiosaurs replaced ichthyosaurs at the top of the marine food chain. They survived until the end of the Cretaceous Period, about 65 million years ago, when they became extinct along with the dinosaurs.

### Fossil finds

In 1766 an ichthyosaur jaw with teeth was found near Bath. Two incomplete skeletons were discovered in the same area in 1805. These early finds were thought to be of crocodiles.

The first complete ichthyosaur skull was found by Joseph Anning in 1811, at Lyme Regis in Dorset. His younger sister Mary later found the skeleton. The head and body together measured over six metres (21 feet) in length. The fossils were again thought to be those of a crocodile, and were sold for the large sum of £23. They eventually ended up in the collection of London's Natural History Museum. The remains have been identified as belonging to one of the largest species of ichthyosaur, which lived in the deep ocean.



*Mary Anning and her dog looking for fossils*

Mary Anning became famous for her fossil finds. Her discoveries contributed to important changes in scientific thinking about prehistoric life and the history of the earth.

