



**Cl@ssmate** Series 8 **14** **Giants of the depths** **Daily Telegraph**

The whale watching season draws thousands to the seashore, or out on the waters, to see these gentle giants on their yearly migration. But whales are not the only giants lurking in our oceans. Since prehistoric times huge creatures have swum beneath the waves, some were the ancestors of modern animals. These giants have inspired many stories about monsters but they have also inspired awe and wonder.

▲ Basilosaurus, a whale from the late eocene period that lived 36 to 40 million years ago. The skeleton was excavated from a clay quarry on the Alabama-Mississippi border in the late 1800s.

**Whale ancestors**

Scientists believe that whales, the largest of the oceanic giants, evolved from much smaller land-based mammals that spent part of their time in the ocean. One ancestor was Ambulocetus natans, a land-based animal about 3m long, that was shaped like a large otter. It lived about 49-50 million years ago. The name means "walking whale that swims". While swimming, it would ambush and drown its prey. The recently discovered Indohyus, found in the form of 48-million-year-old fossils in India, has been identified as a possible ancestor of the whale. Indohyus means "India's pig" but it looked like a miniature deer. Fossils show that it spent part of its time in the water and may have fled to the water to escape predators. The basilosaurus, which lived 40-36 million years ago, was another ancestor of modern whales. When the first fossil was found in Louisiana in the 19th century, an anatomist mistakenly believed they were the bones of a reptilian creature, hence the name Basilosaurus meaning "king lizard". It was later given the scientific name Zeuglodon cetoides, meaning "whale-like yoke teeth".



▲ *Indohyus is a close relative of whales.*  
Illustration: CARL BUELL

**Giant squid**

The giant squid, genus Architeuthis, is one of the most elusive of large sea creatures. Legends from history often spoke of giant squids attacking boats and dragging whales down to the depths, but evidence of their existence was doubted. Over the centuries many giant squid have washed up on beaches or been caught in fishing nets, but being notoriously fragile creatures none were found alive and rarely were they found intact. Specimens were found measuring up to 10m long. Whales had also been found with large scars from squid tentacles on them. But it was not until 2005 that the first living squid was captured on film by two Japanese researchers. Rather than showing a slow-moving animal, the footage proved the squids struck their prey as fast as a python. In February 2007 one weighing 500kg was snared by New Zealand fishermen.



*The carcass of a giant squid which washed up on a beach in Strahan, Tasmania, in 2007. The squid's main body measured 2m long*

**The largest ocean dweller**

Of all the giants that have ever lived on the Earth the blue whale is possibly the largest. Measuring up to 33m long and weighing 190 tonnes, they beat the largest land animal ever found – the Argentinosaurus, measuring 35m but only weighing about 80 to 100 tonnes.

**BLUE WHALE (Balaenoptera musculus)**  
**SIZE:** Males up to 30m (25m average), females 33m (26m)  
**LIVES:** Worldwide, but there are three main populations in the north Atlantic, north Pacific and the southern hemisphere especially around Antarctica. Large concentrations can be found off the south coast of Australia in summer and autumn.  
**DIET:** Krill, plankton **STATUS:** Endangered



▲ *An illustration of giant octopus, Kraken, attacking a sailing ship*



## Myth and fiction

Since the time when people first went to sea they have been afraid of giant creatures lurking in the waters. Whales and giant squid are the source of many myths and legends. The long tentacles of giant squid were sometimes mistaken for snakes, giving rise to the legend of giant sea serpents like the Biblical creature the Leviathan. The Kraken of Scandinavian legend was a giant octopus that destroyed ships. Herman Melville wrote the novel *Moby-Dick* (1851) about a gigantic white whale with a killer instinct. Jules Verne's 1870 novel *Twenty Thousand Leagues Under The Sea* also featured a battle between the crew of a submarine and an aggressive giant squid. Both Melville's and Verne's stories were later filmed and inspired many other films with giants from the ocean including *The Beast from 20,000 Fathoms* (1953), *Godzilla* (1954) and more recently *Cloverfield* (2008).

A painting of *Moby-Dick* attacking a ship, based on the book by author Herman Melville



## Why so big?

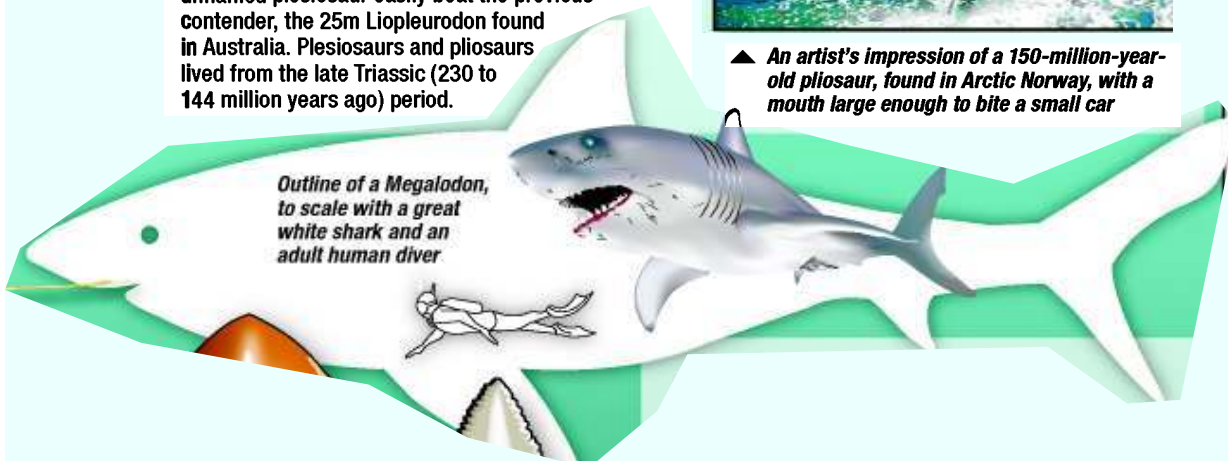
Earlier this year a marine survey expedition in the waters of Antarctica filmed footage of a giant spider living in the icy seas. The leader of the expedition Dr Martin Riddle said, "Gigantism is very common in Antarctic waters – we have collected huge worms, giant crustaceans and sea spiders the size of dinner plates". Although there have been some large land animals, the largest creature that has ever lived on Earth is an animal from the ocean, the blue whale (see the largest ocean dweller). The ocean is better able to support the weight of large creatures; the blue whale would be unable to breath or support its own weight on land. Because oceans contain 99 per cent of living space on Earth there is also more room for large creatures to roam and forage for food. However, scientists are not sure why creatures that are normally small in shallow waters, like squid, tend to have related species that are huge in the deep ocean. This is known as deep sea gigantism. One theory is that because of the cold waters, larger animals are better able to retain heat.

## Plesiosaurs and pliosaurus

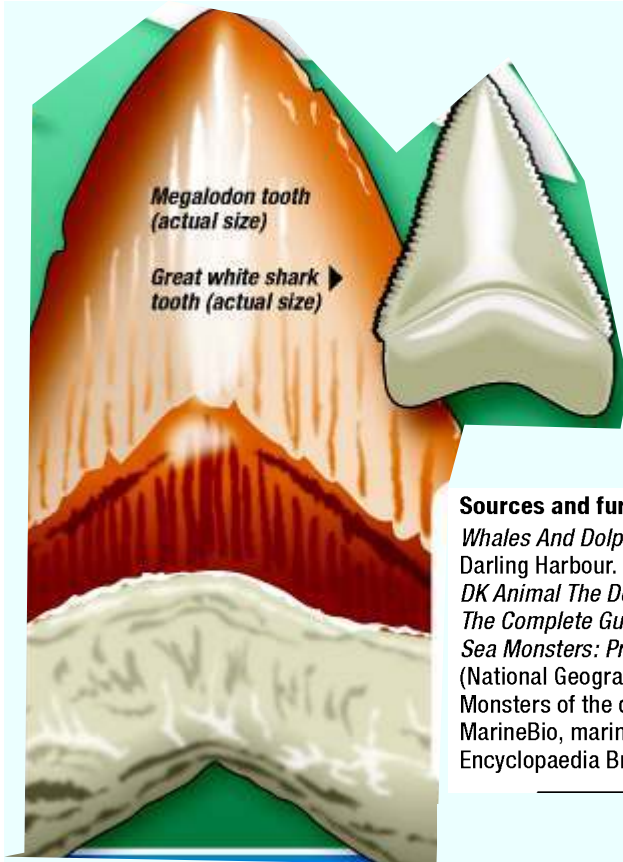
Millions of years ago, when dinosaurs ruled the land, giant marine reptiles ruled the oceans. One group of marine reptiles was known as the plesiosaurs. The earliest plesiosaurs were long-necked and grew as long as 4.5m. The first specimen, measuring more than 2m long, was discovered by Mary Anning at Lyme Regis in December 1823. It was named by Reverend William Conybeare – the word plesiosaur means "near to reptile" – because the skeleton seemed to be more like a turtle than a reptile. Plesiosaurs branched into two main groups of animals – pliosaurs had shorter necks and larger heads, and elasmosaurs with smaller heads and longer, more flexible necks. The pliosaurs were often ferocious predators. The largest specimen was found in Norway in 2006. At 30 metres long, the unnamed plesiosaur easily beat the previous contender, the 25m *Liopleurodon* found in Australia. Plesiosaurs and pliosaurs lived from the late Triassic (230 to 144 million years ago) period.



An artist's impression of a 150-million-year-old pliosaur, found in Arctic Norway, with a mouth large enough to bite a small car



Outline of a Megalodon, to scale with a great white shark and an adult human diver



### CARCHARODON MEGALODON

At 16m long, this was the largest meat-eating fish ever to live. It was at least three times the size of a great white shark (5-6m) and longer than the largest living shark, the whale shark (12m). Because most of its body was composed of cartilage, only fossilised teeth have been found.

**SIZE:** up to 16m long

**DIET:** marine mammals, fish and other sea creatures

**LIVED:** 16 to 1.6 million years ago in oceans worldwide

**STATUS:** extinct

#### Sources and further study:

*Whales And Dolphins 3D, Seamonsters 3D*, both showing at the IMAX Theatre, Darling Harbour. See [imax.com.au](http://imax.com.au) for details

*DK Animal The Definitive Visual Guide* (Dorling Kindersley)

*The Complete Guide To Prehistoric Life* by Tim Haines & Paul Chambers (BBC)

*Sea Monsters: Prehistoric Creatures Of The Deep* by Mike Everhart (National Geographic)

Monsters of the deep, [www.abc.net.au/science/ocean/monsters/default.htm](http://www.abc.net.au/science/ocean/monsters/default.htm)

MarineBio, [marinebio.org](http://marinebio.org)

Encyclopaedia Britannica

### Did you know?

The giant squid is listed in *Guinness World Records* for having the largest eyes of any creature. New Zealand researchers recently found an intact eye measuring 28 centimetres in diameter.

### KRONOSAURUS

A large species of pliosaur that lived about 110 million years ago. It was named after Kronos, father of Zeus, in Greek mythology.

**SIZE:** Up to 10m long.

**DIET:** Like other pliosaur, it would have been a formidable predator feeding on large fish and other underwater animals.

**LIVED:** It inhabited the shallow inland seas of Australia. Fossils of the Kronosaurus have been found at Hughenden and Richmond in central Queensland.

**STATUS:** Extinct

### Did you know?

One of the most famous Australian specimens of a pliosaur is Eric, whose opalised bones are on display at the Australian Museum.

A fossil Pliosaur tooth (actual size)

