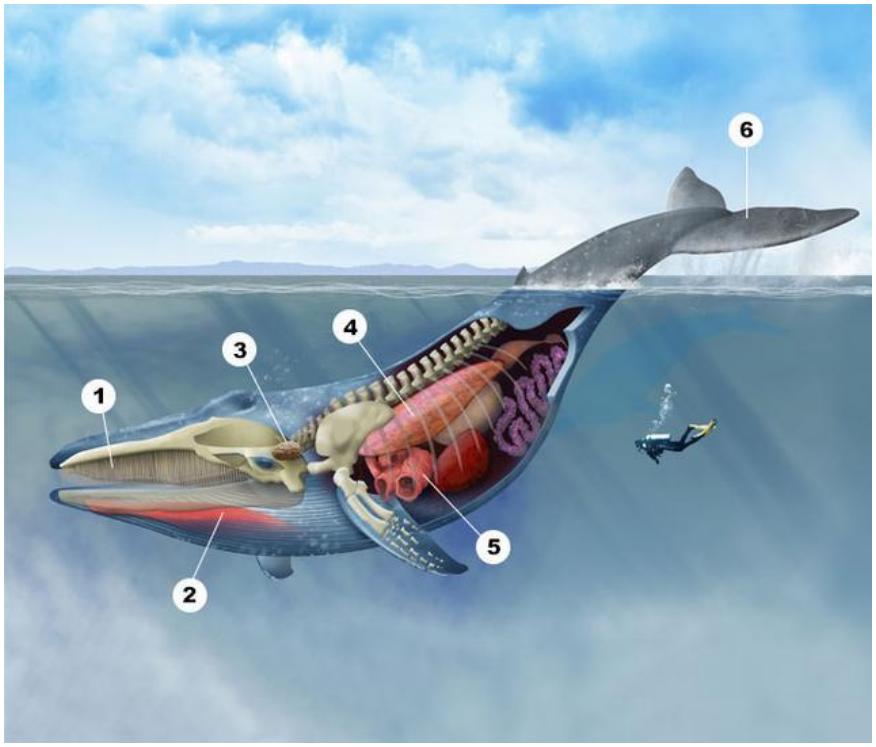
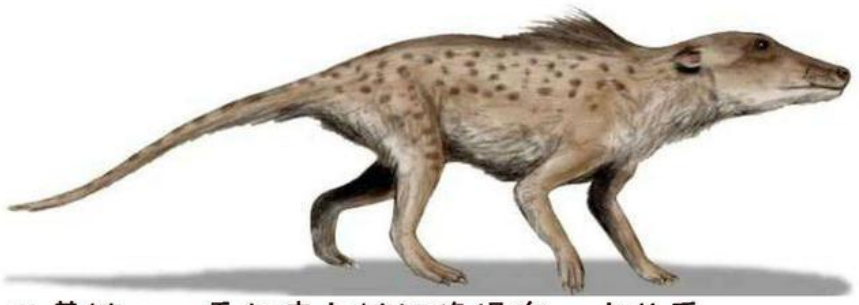
Why do whale fin fins have five fingers that look like human hands?

Although people like to think whales are fish, they are also called whales, but they are not actually fish, but mammals.

Whales belong to the group of vertebrates, mammals, subclasses of Eutheria, Artiodactyla (even clogs).



Artiodactyla- Even clogs? It's correct! Whales are classified into the same group of animals as pigs, sheep and other cattle. This is a double answer after determining genetic analysis and fossil evidence analysis. For a long time, zoologists did not know which whale to classify. Therefore, they were given a special name for them is Cetacean - Whale, this name is still recognized by scientists and used as their official name. However, as the evidence for fossils was gradually discovered, scientists finally found clear evidence to be able to categorize the whales correctly.



Pakicetus is an extinct genus of the Whale family, found in pre-Eocene rocks in Pakistan. The strata where the fossils were found were then part of the coastal region of Tethys.

In the 1970s, fossils of a four-legged animal were found in India and Pakistan, they were determined to have a close relationship with modern whales and was named Pakicetus. However, this animal mainly lives on land. Later, a fossil of the transitional species was discovered - Ambulocetus. Then a series of fossils of other transitional animals were discovered by archaeologists - Remingtonocetus, Rodhocetus, Protocetus, Dorudon, Basilosaurus . And their bodies are increasingly evolving and changing to suit. more with aquatic life. Their hind limbs get shorter and shorter, and eventually become shaped like a fish's fins that we often see in whales today.

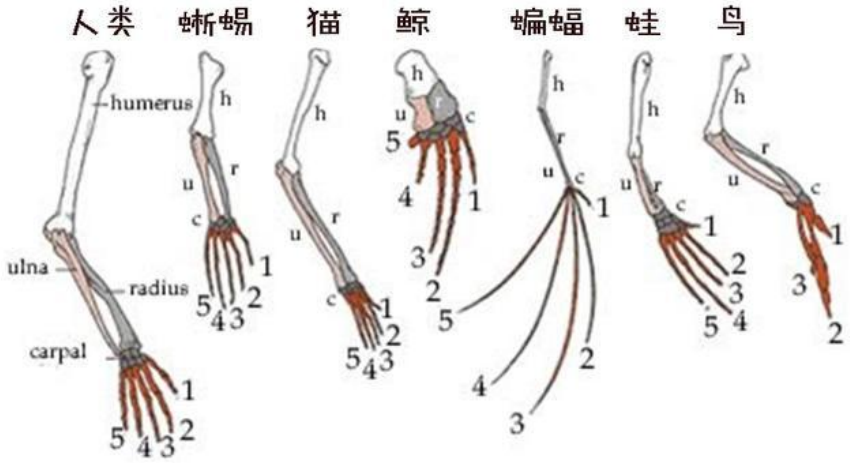
Ambulocetus is an ancient form of whale that can walk and swim. It lived during the Pre-Eocene period, about 50 - 49 million years ago. It is a transitional fossil that shows how the evolution of whales from terrestrial mammals to aquatic life took place.

Through DNA identification, scientists finally came to the conclusion that the animals that exist on Earth today have the most intimate relationship with whales, the hippos - they share a common ancestors with whales 50 million years ago.

Among the terrestrial animals today, there are many animals with five fingers similar to us humans such as frogs, lizards, bats, crocodiles .

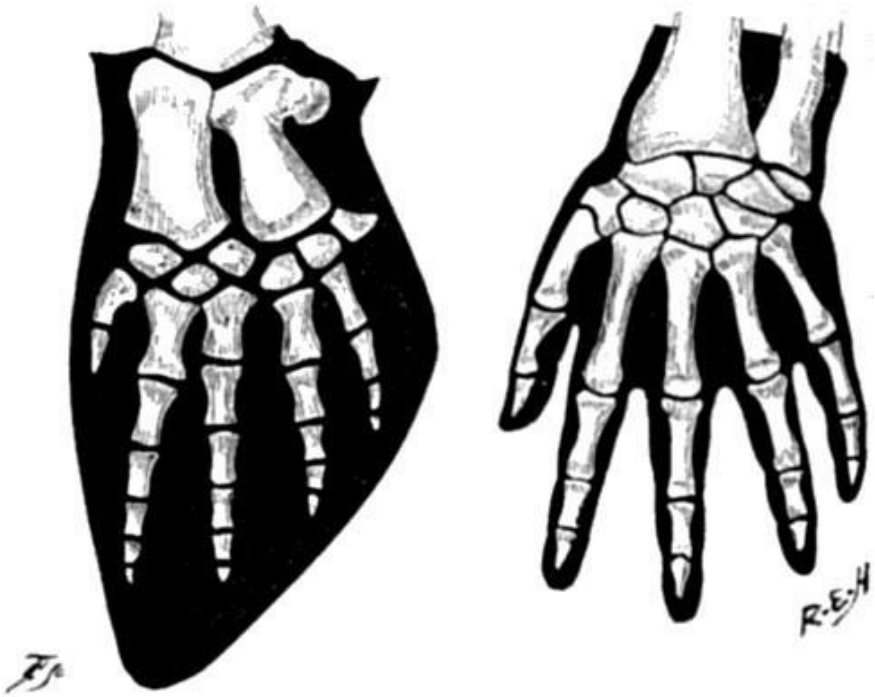
There are also animals that have lost part of their fingers or evolved in a different direction to adapt to the evolutionary habitat.

For example, pigs evolved to lose their toes, instead of hooves, or horses, and they gradually dissipated, leaving only the middle toe to form the claw as it is today. In order to accommodate the need for grip, some animals have evolved some of the body's bones into fake fingers to own six fingers, such as raccoons and moles.



Hand bones of species from left to right in turn: Humans, lizards, cats, whales, bats, frogs and birds.

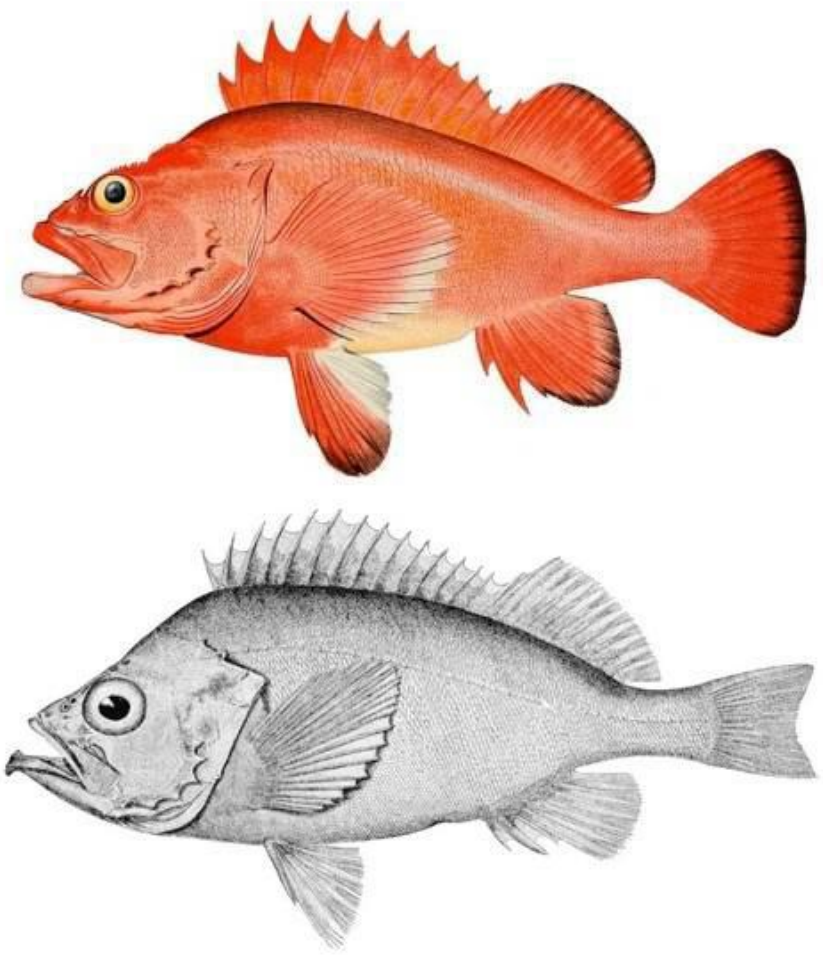
Before the whales left the mainland and turned completely into aquatic life, their ancestors retained the outer characteristics of the five-finger hand. Although pigs and hippos later degenerated the traits of the palm bone to become even-headed animals, whales evolved in a different direction, their five fingers instead of being separated were combined. most, but the internal bone structure remains the same and forms the fins we see today.



Why five fingers?

If the above analysis has helped you to know why the fin of a whale has five fingers looks like a human hand, the story can end here. But if your curiosity continues and wonders why the ancestors of four-legged animals on the ground have five good hands, maybe the explanation below will provide the answer for you.

To answer this question, let's go back in time, back to about 380 million years ago. The story begins with a species of fish living in the ocean but did not have the survival advantages compared to the species of the same habitat at the time. They are not like the fish we normally buy in the market - all fins are made up of parallel rows of bones, classified as ray rays.

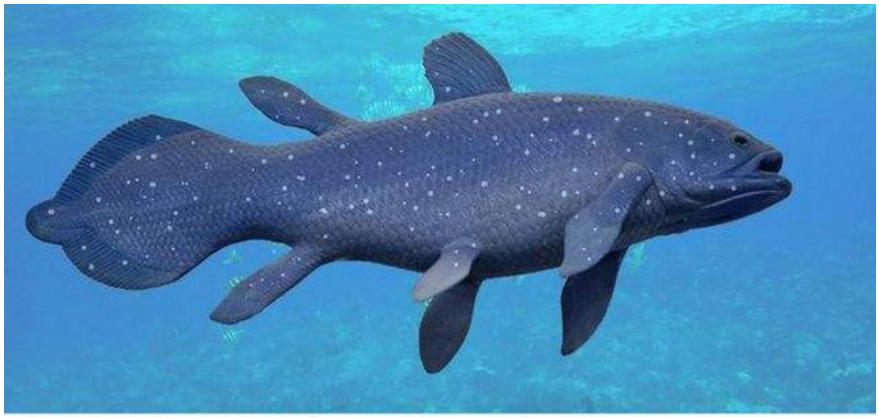


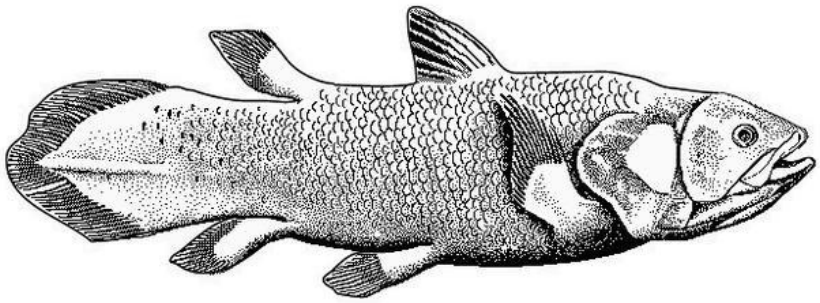
Ray finfish is a class of rays finfish. In terms of numbers, they are the majority of vertebrates, with approximately 33,200 known species found in any aquatic environment, from freshwater ponds, lakes, to freshwater habitats. sea ??and ocean.

We all know that terrestrial animals are native to the ocean. But why do fish today not look like they can evolve so. If they want to evolve to own limbs, how do their fins build and grow muscle tissue?

In fact, today's fish species no longer have the ability to evolve to survive on land, their biological structures today are far too suitable to live underwater and lose the ability to evolve to change their environment. school live.

But in prehistoric times, the coelacanth (lobe finfish) could not dominate underwater, but they were able to evolve to adapt to changing habitat from underwater to land.



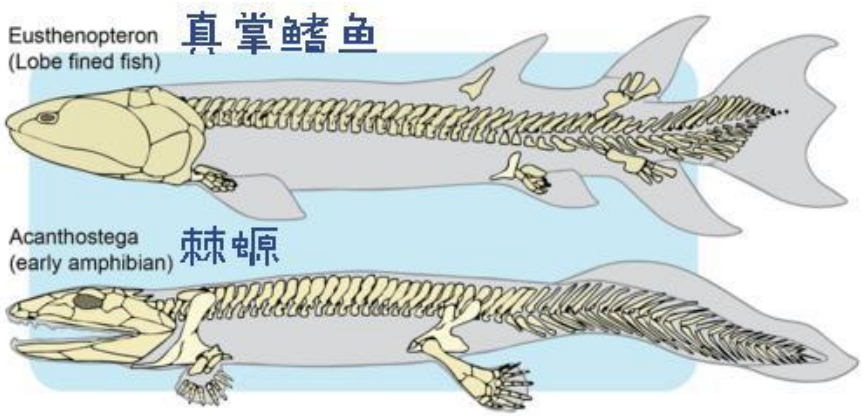


The fins of this prehistoric fish are unlike those of modern fish, their fins exist in both flesh and bones. This fish has a grafted structure unlike ray fin fish and is always threatened by competition in the natural environment. At the present time, there are only 4 species of coelacanth (lobed finfish) on Earth and all of them are facing extinction.

But it is also thanks to the existence of both the bones and flesh in the fins that the fins can crawl through the swamp with their fins. This is also the precursor to adapting to amphibian life and moving to the land clearly demonstrating the fossils found in this period of Eusthenopteron and Tiktaalik.

Eusthenopteron is an iconic extinct genus of lobe finfish from its close relationships with quadruped animals. The original description of the animal shows that it lived on the ground, but most paleontologists today agree it is a completely aquatic animal.

In the process of adapting to amphibian life, the pectoral fins and the pelvic fins of the coelacanth have been evolved to become stronger and gradually developed to have hand-like characteristics. Finally, about 365 million years ago, a new species also appeared, they were named Acanthostega.



Acanthostega was the first animal to have explicit limbs. It has 8 fingers on each foot in both the front and hind limbs, and over time, they gradually evolved and merged their fingers into 5 fingers.

Acanthostega appeared in the late Devonian period about 365 million years ago, and anatomically, they were located between lobe finfish and fully terrestrial animals.

About 350 million years ago, animals evolved into fingers to respond flexibly and firmly when moving on land. However, it should be noted that 5 fingers is not an advantage, compared to 4 or 6 fingers, the function is still the same and why is 5 fingers, perhaps this is just a random evolution. .