

Tiktaalik and the Fishy Story of Walking Fish

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Now that the euphoria in the media has settled down on *Tiktaalik*, the “walking fish”, it is time to reflect upon what must surely be the biggest fish story of the decade.

In both the print and broadcast media, reports of the discovery of the fossil fish known as *Tiktaalik* has been hyped as convincing proof that, through a random chance process of evolution, fish sprouted legs and walked out onto the land where they breathed air and turned into amphibians, reptiles, mammals, and, ultimately, people. All such four-limbed, air-breathing creatures are called “tetrapods” (which means four legs).

Are There Really Air-Breathing and Walking Fish?

Many species of living fish are known to breathe air as well as slither on their bellies, with the help of their pectoral fins, across large expanses of land (evolutionists call this “walking”). For example, the northern snakehead and the “walking catfish” (*Clarias batrachus*) are air-breathing fish that can travel overland for considerable distances. The mudskippers are fish that breathe oxygen through their skin and “skip” along on land with the aid of their fleshy fins. The climbing perch (*Anabas testudineus*) not only breathes air and “walks” on land but is even capable of climbing trees! Yet none of these curious fish are considered by evolutionists to be ancestors of tetrapods—they are simply interesting and specialized fish.

So Then What Fish Are the Ancestors of Tetrapods?

Most evolutionists look to crossopterygian fish for the ancestors of tetrapods—even though unlike many living fish, **none** of these fish are known to be capable of either walking or breathing out of water.

These fish have fleshy pectoral fins containing bony elements (considered similar to tetrapod legs). These similarities have prompted evolutionists to confidently declare that crossopterygians evolved into tetrapods.

According to evolutionists, the crossopterygians flourished about 380 million years ago and all were once believed to have become extinct about 80 million years ago. However, in 1938 a fishing trawler netted a fish in the Indian Ocean off the coast of Madagascar that was identified as a crossopterygian fish, previously known only from the fossil record as the coelacanth. Since then, dozens of living coelacanths have been discovered.

This came as a huge shock to evolutionists who assumed that the reason the coelacanth disappeared from the fossil record was because they evolved into land-dwelling tetrapods; yet, here they were very much alive—and swimming!

At the very least, evolutionists expected to observe some hint of walking behavior in the coelacanth, but nothing of the kind has ever been observed. Coelacanths have been observed swimming backward, upside-down, and even standing on their head but they have never been observed to walk on land or in the sea.

Evolutionists Look to Other Lobe-fins

Since living lobe-fin fish have not met expectations, evolutionists have turned to other fossilized lobe-fins for the ancestors of tetrapods. Until recently, the most popular crossopterygian candidates for ancestors of tetrapods were *Eusthenopteron* and *Panderichthys*. Both of these fish, like the Coelacanth, have fleshy pectoral fins with bones. But according to Daeschler, Shubin, and Jenkins¹—the discoverers of *Tiktaalik*—these fish possess relatively few evolutionarily important similarities to tetrapods and that until now, “our understanding of major transformations at the fish-tetrapod transition has remained limited.”

Tiktaalik to the Rescue?

In the April 2006 issue of *Nature*, Daeschler, et al. reported the discovery of several fossilized specimens of a crossopterygian fish named *Tiktaalik roseae* in sedimentary layers in arctic Canada. They confidently declared that *Tiktaalik* “represents an intermediate between fish with fins and tetrapods with limbs.”

Whatever else we might say about *Tiktaalik*, it is a fish. Like nearly all bony fishes, these fish have small pelvic fins, retain fin rays in their paired appendages and have well-developed gills—all consistent with an entirely aquatic life style.

Are the Pectoral Fins of *Tiktaalik* Really Legs?

The limbs of tetrapods share similar characteristic features which meet the special demands of walking on land. In addition to a distinctive suite of bones in the limbs proper, there are characteristic bones in the ankle (or wrist) and in the digits (fingers and toes).

In order to support the weight of the body on land, and permit walking, the most proximal bones of the limbs must be securely attached to the rest of the body. The hind limbs in particular have a robust pelvic girdle securely attached to the vertebral column. This differs radically from that of any fish including *Tiktaalik*. Essentially all fish (including *Tiktaalik*) have small pelvic fins relative to their pectoral fins. The legs of tetrapods are just the opposite: the hind limbs attached to the pelvic girdle are almost always more robust than the fore limbs attached to the pectoral girdle.

It is significant that the “earliest” true tetrapods recognized by evolutionists (such as *Acanthostega* and *Ichthyostega*) have all of the distinguishing features of tetrapod limbs (and their attachment bones) and were clearly capable of walking and breathing on land. The structural differences between the tetrapod leg and the fish fin is easily understood when we consider that the fish has no need to support its weight in water where it is essentially weightless.

Finally, no fish (including *Tiktaalik*) has true finger or toe bones. Instead, fish have slender bony fin rays, which even evolutionists concede are not homologous or related in any way to digits. While fin rays are ideal for swimming in water, they are unsuited to bear weight on land and thus permit only a slithering and belly-dragging mode of locomotion on land (in certain living species) that can be described as “walking” in only the most trivial sense of the word.

So is *Tiktaalik* a Missing Link?

Finally, what about the popular claim that *Tiktaalik* is the “**missing link**” between fish and tetrapods?

In their review article on *Tiktaalik*, Ahlberg and Clack² tell us that “the concept of ‘missing links’ has a powerful grasp on the imagination: the rare transitional fossils that apparently capture the origins of major groups of organisms are uniquely evocative.” The authors concede that the whole concept of “missing links” has been loaded with “unfounded notions of evolutionary ‘progress’ and with a mistaken emphasis on the single intermediate fossil as the key to understanding evolutionary transition.”

Sadly, “unfounded notions” of this kind continue to be uncritically taught and accepted in the popular media and in our schools. Even more sadly, these unfounded notions have been used to undermine the authority of Holy Scripture.

Footnotes

1. Daeschler, E. B., N. H. Shubin, and F. A. Jenkins, 2006. A Devonian tetrapod-like fish and the evolution of the tetrapod body plan. *Nature* **440**(7085):757–763.
2. Ahlberg, P. E. and J. A. Clack, 2006. News and Views. *Nature* **440**(7085):747–749.