

BREATHING TRILOBITES

Relevant for: Environment | Topic: Biodiversity, Ecology, and Wildlife Related Issues

How did ancient marine creatures breathe?

A major milestone in evolutionary history occurred about 370 million years ago – the water-to-land transition – when a certain fish species converted its fins to limbs and modified its respiratory organ for air-breathing. So how did the creatures breathe when in water? A new study (*Science Advances*) has found evidence of advanced breathing organs in 450-million-year-old sea creatures called Trilobites.

Fossil studies showed that trilobites used gill-like structures hanging off their thighs to breathe. This went unnoticed for decades as scientists thought the upper branch of the leg was non-respiratory just like the upper branch seen in present-day crustaceans.

Advanced Computer tomography or CT scanner helped read the fossil and surrounding rock and 3D models of the gill structures were created. Paleontologist Melanie Hopkins, a research team member at the American Museum of Natural History explained in a release that the new technique helped get a view that would even be hard to see under a microscope. The gill structures were just 10 to 30 microns wide. For comparison, a human hair is about 100 microns thick.

The researchers write that blood would have filtered through chambers in these tiny structures and helped pick up oxygen. They note that this ancient gill is similar to those found in present-day crabs and lobsters.

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Researchers expect this finding to help manufacturers further develop smart hearing aids

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