

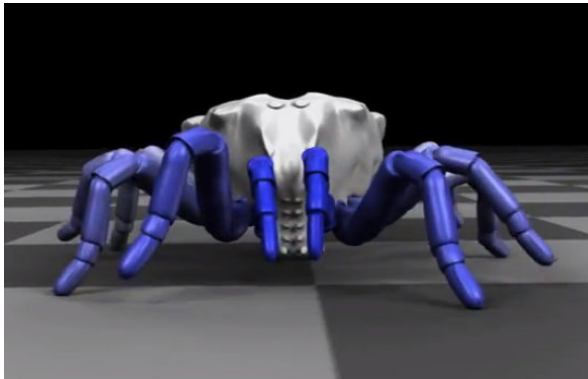
Ancient arachnid brought 'back to life': Video recreates 410-million-year-old animal walking

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Source: Manchester University

Summary: Scientists have recreated the walking gait of a 410-million-year-old arachnid, one of the first predators on land, based on fossil evidence. The scientists used the fossils -- thin slices of rock showing the animal's cross-section -- to work out the range of motion in the limbs of this ancient, extinct early relative of the spiders.

FULL STORY



The trigonotarbid was one of the first predators on land.

Credit: Garwood/Dunlop

Scientists have recreated the walking gait of a 410-million-year-old arachnid, one of the first predators on land, based on fossil evidence.

Researchers from The University of Manchester and the Museum für Naturkunde, Berlin, used exceptionally preserved fossils from the Natural History Museum in London to create the video showing the most likely walking gait of the animal; the study is published in a special issue of the *Journal of Paleontology* (July 9).

The scientists used the fossils -- thin slices of rock showing the animal's cross-section -- to work out the range of motion in the limbs of this ancient, extinct early relative of the spiders. From this, and comparisons to living arachnids, the researchers used an open source computer graphic program called Blender to create the video showing the animals walking.

"When it comes to early life on land, long before our ancestors came out of the sea, these early arachnids were top dog of the food chain," said author Dr Russell Garwood, a palaeontologist in the University of Manchester's School of Earth, Atmospheric and Environmental Sciences. "They are now extinct, but from

about 300 to 400 million years ago, seem to have been more widespread than spiders. Now we can use the tools of computer graphics to better understand and recreate how they might have moved -- all from thin slivers of rock, showing the joints in their legs."

Co-author Jason Dunlop, a curator at the Museum für Naturkunde, Berlin, said: "These fossils -- from a rock called the Rhynie chert -- are unusually well-preserved. During my PhD I could build up a pretty good idea of their appearance in life. This new study has gone further and shows us how they probably walked. For me, what's really exciting here is that scientists themselves can make these animations now, without needing the technical wizardry -- and immense costs -- of a Jurassic Park-style film.

"When I started working on fossil arachnids we were happy if we could manage a sketch of what they used to look like; now we can view them running across our computer screens."

This work is part of a special collection of papers on three-dimensional visualisation and analysis of fossils published in the *Journal of Paleontology*.

Dr Garwood added: "Using open-source software means that this is something anyone could do at home, while allowing us to understand these early land animals better than ever before."

Video: <https://docs.google.com/file/d/0B2KhlzGhKlFTREpZYURIRjI4OHM/view?pli=1&sle=true>

Story Source:

The above post is reprinted from materials provided by **Manchester University**. *Note: Materials may be edited for content and length.*

Journal Reference:

1. R. Garwood and J. Dunlop. **The walking dead: blender as a tool for palaeontologists with a case study on extinct arachnids**. *Journal of Paleontology*, 2014
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<www.sciencedaily.com/releases/2014/07/140709095624.htm>.
