

Stunning Discovery: World's Longest Fossilized 'Death Track'

According to an international team of paleontologists, a 9.7-meter-long mortichnia of a horseshoe crab unearthed at a famous fossil locality in Germany is the longest complete fossilized death track ever found.



The 9.7-meter-long fossilized death track of the horseshoe crab *Mesolimulus walchi* collected from the Solnhofen Lithographic Limestone of Bavaria in Germany (© Dean R. Lomax / Christopher A. Racay)

Around 150 million years ago, during the Jurassic Period, the horseshoe crab left its tracks in the prehistoric substrate of a lagoon in tropical Germany.

The track, which is over 9.7 m (31.8 ft) in length, displays both the beginning and end, resulting with the crab itself preserved .

It was discovered during an expedition in 2002 and derives from the famous Solnhofen Lithographic Limestone of Bavaria in Germany. The specimen remained unstudied until paleontologists realized its importance within paleoichnology – the study of fossilized traces.

[The study is published online in the latest issue of the journal *Ichnos* .](#)

The sheer size of the track in question is extremely rare in itself, but to have the tracemaker (the horseshoe crab) preserved at the end of its 'mortality' (death march) and the landing position of the crab preserved is quite spectacular. Such a discovery is extremely rare; it allows a glimpse into a moment of locomotion that may have taken just minutes, that is now captured forever, thus allowing the final moments of a horseshoe crabs' life before it succumbed.

"In November 2005, when I first started at the Wyoming Dinosaur Center (WDC) it was suggested to me that this trackway may be an important specimen and required scientific study. It wasn't until August 2008 when Dean Lomax and I began discussing the possibility of collaborating together to describe this brilliant specimen," said [Christopher Racay](#), co-author of the study and collections manager at the WDC in Thermopolis, Wyoming (where the specimen resides).

The Solnhofen area, from which the fossil derives, is world famous for its excellent preservation of fossils, often preserving soft parts of animals. In fact, the area is most widely renowned for its discoveries of *Archaeopteryx*, the 'dino-bird', of which one original specimen is on display at the WDC. The Solnhofen area is composed of a coral reef with numerous plattenkalks and basins throughout, preserving an array of fossil types from mollusks to pterosaurs, such remains help to understand past paleoenvironments of the area.

"When I first laid my eyes on this specimen in 2008, while on display, I realized how special this fossil truly was. It's not particularly rare to find these horseshoe crabs at the end of their short traces, but nothing quite as substantially large and scientifically important as this; trackways and tracemakers preserved together in the fossil record is rare," said [lead author Dean Lomax](#), contract assistant curator of paleontology at [Doncaster Museum and Art Gallery in England](#).

Horseshoe crabs are often considered to be living fossils, having their origins perhaps lying over 450 million years ago in the Ordovician Period. Today, only four living species exist. The crab that left its traces for us to see was only a juvenile and measures a total length of just 12.7 cm, isolated specimens of this crab, *Mesolimulus walchi*, are reasonably common within the Solnhofen limestones. The whole trackway displays footprints, telson (tail) drag marks, few prosoma (head) prints and several walking styles throughout, all of which allow paleontologists to attempt to understand what exactly was happening to the animal while it was leaving its death march.



The horseshoe crab *Mesolimulus walchi* preserved at the end of its mortichnia (© Dean R. Lomax / Christopher A. Racay)

As to how the crab ended in the lagoon is uncertain, however the most likely candidate is that the crab was flung into the lagoon during a harsh storm. It was suggested that perhaps a predator may have dropped the individual into the lagoon, but this was ruled out as no physical evidence of predation was found.

“This really is an amazing specimen. The presence of the trace-maker at the end of a trackway is truly unusual. Such examples are extremely important in paleontology, because they reveal the correspondence between preserved tracks, the animal’s behavior represented by the track, and link these back to the type of animal. It is much more typical to have to infer the nature of the trace-maker,” concluded [Prof Murray Gingras of the University of Alberta in Edmonton](#), a world expert on fossilized traces and the co-editor of the journal *Ichnos*.

Bibliographic information: Dean R. Lomax, Christopher A. Racay. 2012. A Long Mortichnial Trackway of *Mesolimulus walchi* from the Upper Jurassic Solnhofen Lithographic Limestone near Wintershof, Germany. *Ichnos: An International Journal for Plant and Animal Traces*, vol. 19, issue 3; doi: 10.1080/10420940.2012.702704