

# Fossil arthropod went on the hunt for its prey

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A new species of carnivorous crustacean has been identified, which roamed the seas 435 million years ago, grasping its prey with spiny limbs before devouring it. The fossil is described and details of its lifestyle are published in the open access journal *BMC Evolutionary Biology*.

The fossils were discovered near Waukesha, Wisconsin, with the new species, *Thylacares brandonesis*, named after the Brandon Bridge Formation where it was found. It is the oldest known example of the Thylacocephala group - shrimp-like creatures, mostly from the Jurassic period, known for their bulbous eyes and multiple limbs. The muscle structure and leg morphology of the new species suggests that it used its long, claw-like appendages to catch prey in a similar way to modern remipedes, blind crustaceans still found in salt water-filled caves.

Derek Briggs, Yale University, says: "This new research extends the range of this enigmatic group of fossil arthropods back to the Silurian, some 435 million years ago, and provides evidence that they belong among the crustaceans, the modern group that includes lobsters, shrimps and crabs."

Carolyn Haug, LMU Munich, said: "*T. brandonensis* was probably an actively hunting predator, which caught the prey with its front claws and crushed it into smaller pieces with the protrusions nearer its mouthparts."

"This early, Silurian, example of Thylacocephala is in many ways much less extreme than the more recent Jurassic species. It still has normal-sized eyes in contrast to the very enlarged ones that came later, and

shorter front claws in *T. brandonensis* compared to the extremely elongated ones in more recent Jurassic representatives."

The description of the new Silurian [species](#) was part of a wider investigation into this group of fossils, including several new Jurassic specimens. Modern imaging techniques allowed the scientists to visualise new features, such as the tiny details of the *T. brandonensis* [muscle structure](#). Based on these images, they created 3D models of the [new species](#), which help us to understand the creature's life habits.

Carolyn Haug says that [open access](#) publication of the paper means that the donors of several of the specimens can see the results of their generosity.

"Several of the Jurassic specimens that were used for comparison to the newly described Silurian *T. brandonensis* were donated by private collectors, who usually have no affiliation to any university and thus no access to most normal publications. By being open access, we really bring our results to the public."

**More information:** The implications of a Silurian and other thylacocephalan crustaceans for the functional morphology and systematic affinities of the group, Carolyn Haug, Derek EG Briggs, Donald G Mikulic, Joanne Kluessendorf and Joachim T Haug, *BMC Evolutionary Biology* 2014, 14:159, [www.biomedcentral.com/1471-2148/14/159/](http://www.biomedcentral.com/1471-2148/14/159/)

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