

Fossil of ancient spider attack only one of its type ever discovered

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This is the only fossil ever discovered that shows a spider attacking prey in its web. Preserved in amber, it's about 100 million years old. Credit: Oregon State University

(Phys.org)—Researchers have found what they say is the only fossil ever discovered of a spider attack on prey caught in its web – a 100 million-year-old snapshot of an engagement frozen in time.

The extraordinarily rare fossils are in a piece of amber that preserved this event in remarkable detail, an action that took place in the Hukawng Valley of Myanmar in the Early Cretaceous between 97-110 million years ago, almost certainly with dinosaurs wandering nearby.

Aside from showing the first and only [fossil evidence](#) of a spider attacking prey in its web, the piece of amber also contains the body of a male spider in the same web. This provides the oldest evidence of [social behavior](#) in spiders, which still exists in some species but is fairly rare. Most spiders have solitary, often cannibalistic lives, and males will not hesitate to attack immature species in the same web.

"This juvenile spider was going to make a meal out of a tiny [parasitic wasp](#), but never quite got to it," said George Poinar, Jr., a professor emeritus of [zoology](#) at Oregon State University and world expert on insects trapped in amber. He outlined the findings in a new publication in the journal *Historical Biology*.

"This was a male wasp that suddenly found itself trapped in a [spider web](#)," Poinar said. "This was the wasp's worst nightmare, and it never ended. The wasp was watching the spider just as it was about to be attacked, when [tree resin](#) flowed over and captured both of them."

Spiders are ancient invertebrates that researchers believe date back some 200 million years, but the oldest fossil evidence ever found of a spider web is only about 130 million years old. An actual attack such as this between a spider and its prey caught in the web has never before been documented as a fossil, the researchers said.

The tree resin that forms amber is renowned for its ability to flow over insects, small plants and other life forms, preserving them in near perfection before it later turns into a semi-precious stone. It often gives scientists a look into the biology of the distant past. This spider, which

may have been waiting patiently for hours to capture some prey, was smothered in resin just a split second before its attack.

This type of wasp, Poinar said, belongs to a group that is known today to parasitize spider and insect eggs. In that context, the attack by the spider, an orb-weaver, might be considered payback.

Both the spider and the wasp belong to extinct genera and are described in the paper. At least 15 unbroken strands of [spider](#) silk run through the amber piece, and on some of these the wasp was ensnared.

Its large and probably terrified eyes now stare for eternity at its attacker, moving in for the kill.

Provided by Oregon State University

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