

Fossilized feces found to be infested with parasites from more than 200 million years ago

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Coprolites collected in Nong Yakong village, Chaiyaphum Province, Thailand.
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Fossilized feces preserve evidence of ancient parasites that infected an

aquatic predator over 200 million years ago, according to a study published August 9, 2023, in the open-access journal *PLOS ONE* by Thanit Nonsrirach of Mahasarakham University, Thailand, and colleagues.

Parasites are a common and important component of ecosystems, but ancient [parasites](#) are difficult to study due to a poor fossil record. Parasites often inhabit the soft tissues of their host, which rarely preserve as fossils. There are, however, cases where traces of parasites can be identified within fossilized feces (coprolites). In this study, Nonsrirach and colleagues describe evidence of parasites in a Late Triassic [coprolite](#) from the Huai Hin Lat Formation of Thailand, which is more than 200 million years old.

The coprolite is cylindrical in [shape](#) and more than 7cm long. Based on its shape and contents, the researchers suggest it was likely produced by some species of phytosaur, crocodile-like predators which are also known from this fossil locality. Microscopic analysis of thin sections of the coprolite revealed six small, round, organic structures between 50 and 150 micrometers long. One of these, an oval-shaped structure with a thick shell, is identified as the egg of a parasitic nematode worm, while the others appear to represent additional worm eggs or protozoan cysts of unclear identity.

This is the first record of parasites in a terrestrial vertebrate host from the Late Triassic of Asia, and a rare glimpse into the life of an ancient animal that was apparently infected by multiple parasitic species. This discovery also adds to the few known examples of nematode eggs preserved within the coprolites of Mesozoic animals. These findings are therefore a significant contribution to scientific understanding of the distribution and ecology of parasites of the distant past.

The authors add, "Coprolite is a significant paleontological treasure

trove, containing several undiscovered fossils and expanding our understanding of ancient ecosystems and food chains."

More information: First discovery of parasite eggs in a vertebrate coprolite of the Late Triassic in Thailand, *PLoS ONE* (2023). [DOI: 10.1371/journal.pone.0287891](https://doi.org/10.1371/journal.pone.0287891)

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