

World's first dinosaur preserved sitting on nest of eggs with fossilized babies

March 9 2021



An attentive oviraptorid theropod dinosaur broods its nest of blue-green eggs while its mate looks on in what is now Jiangxi Province of southern China some 70 million years ago. Artwork by Zhao Chuang. Credit: © Zhao Chuang

The fossil in question is that of an oviraptorosaur, a group of bird-like theropod dinosaurs that thrived during the Cretaceous Period, the third

and final time period of the Mesozoic Era (commonly known as the 'Age of Dinosaurs') that extended from 145 to 66 million years ago. The new specimen was recovered from uppermost Cretaceous-aged rocks, some 70 million years old, in Ganzhou City in southern China's Jiangxi Province.

"Dinosaurs preserved on their nests are rare, and so are fossil [embryos](#). This is the first time a non-avian dinosaur has been found, sitting on a [nest](#) of [eggs](#) that preserve embryos, in a single spectacular specimen," explains Dr. Shundong Bi.

The fossil consists of an incomplete skeleton of a large, presumably adult oviraptorid crouched in a bird-like brooding posture over a clutch of at least 24 eggs. At least seven of these eggs preserve bones or partial skeletons of unhatched oviraptorid embryos inside. The late stage of development of the embryos and the close proximity of the adult to the eggs strongly suggests that the latter died in the act of incubating its nest, like its modern bird cousins, rather than laying its eggs or simply guarding its nest crocodile-style, as has sometimes been proposed for the few other oviraptorid skeletons that have been found atop nests.

"This kind of discovery, in essence fossilized behavior, is the rarest of the rare in [dinosaurs](#)," explains Dr. Lamanna. "Though a few adult oviraptorids have been found on nests of their eggs before, no embryos have ever been found inside those eggs. In the new specimen, the babies were almost ready to hatch, which tells us beyond a doubt that this oviraptorid had tended its nest for quite a long time. This dinosaur was a caring parent that ultimately gave its life while nurturing its young."



The ~70-million-year-old fossil in question: an adult oviraptorid theropod dinosaur sitting atop a nest of its eggs. Multiple eggs (including at least three that contain embryos) are clearly visible, as are the forearms, pelvis, hind limbs, and partial tail of the adult. Photo by Shundong Bi, Indiana University of Pennsylvania. Credit: © Shundong Bi

The team also conducted oxygen isotope analyses that indicate that the eggs were incubated at high, bird-like temperatures, adding further support to the hypothesis that the adult perished in the act of brooding its nest. Moreover, although all embryos were well-developed, some appear to have been more mature than others, which in turn suggests that oviraptorid eggs in the same clutch might have hatched at slightly different times. This characteristic, known as asynchronous hatching, appears to have evolved independently in oviraptorids and some modern birds.

One other interesting aspect of the new oviraptorid specimen is that the adult preserves a cluster of pebbles in its abdominal region. These are almost certainly gastroliths, or "stomach stones," rocks that would have been deliberately swallowed to aid the dinosaur in digesting its food. This is the first time that undoubted gastroliths have been found in an oviraptorid, and as such, these stones may provide new insights into the diets of these animals.

Says Dr. Xu, "It's extraordinary to think how much biological information is captured in just this single fossil. We're going to be learning from this specimen for many years to come."

More information: Shundong Bi et al, An oviraptorid preserved atop an embryo-bearing egg clutch sheds light on the reproductive biology of non-avian theropod dinosaurs, *Science Bulletin* (2020). [DOI: 10.1016/j.scib.2020.12.018](https://doi.org/10.1016/j.scib.2020.12.018)

Provided by Science China Press

Citation: World's first dinosaur preserved sitting on nest of eggs with fossilized babies (2021, March 9) retrieved 25 April 2024 from <https://phys.org/news/2021-03-world-dinosaur-eggs->

[fossilized-babies.html](#)

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.