

Paleontologists Establish First Age Distribution of Non-Avian Dinosaur Population

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For the first time, scientists have established the age structure of a non-avian dinosaur population. Using this information, they inferred which factors led to survival or death of group members.

Did these animals show survival patterns akin to extant living dinosaurs, the birds, as did like their crocodilian cousins? Or, did they mirror that of more distantly related dinosaurs that lived in a similar environment? A pile of bones from the North American tyrannosaur *Albertosaurus sarcophagus* may hold the answer.

These animals "showed exceptional survivorship once they passed the hatchling stage," said Gregory Erickson of Florida State University, co-author of a paper reporting the results in this week's issue of the journal *Science*.

"Factors such as predation and [timing of] entrance into the breeding population may have influenced survivorship," the researchers say. Such patterns are common today in wild populations of long-lived birds and mammals.

Why increased survivorship as juveniles? "In living populations it occurs because animals reach threshold sizes, and predation pressures decrease," said Erickson. "By age two, most tyrannosaurs were as large or larger than nearly all other predators in their realm."

"Because most species of non-avian dinosaurs are known from just one or a few specimens, very little is understood about the population biology of these animals," said Richard Lane, program director in the National Science Foundation (NSF)'s Division of Earth Sciences, which funded the research. "We now have a breakthrough in unraveling these dinosaurs' life cycles."

The burial site was first found and partially excavated in 1910 by famed dinosaur hunter Barnum Brown of the American Museum of Natural History, who discovered it along the Red Deer River in Alberta, Canada. The site was recently reopened by scientists from the Royal Tyrrell Museum of Palaeontology in Alberta, Canada, on an expedition led by co-author Philip Currie of the University of Alberta, Edmonton.

Erickson, Currie, Brian Inouye of the University of Alberta, and Alice Winn of Florida State University, established how many dinosaurs had died at the site. They concluded that at least 22 individuals ranging from 2 to 28 years old were buried there, and found considerably more adult specimens than juveniles.

They then studied and aged other North American tyrannosaurs. "These specimens had been found individually throughout various formations in the United States and Canada," said Erickson. "We found the same situation--very few young animals--again."

Source: NSF

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