

Dinosaurs! Just the name triggers vivid images of either *Tyrannosaurus rex* (Figure 1), a gigantic carnivore,¹ or the enormous herbivores² like *Diplodocus* (Figure 2). *Supersaurus*,³ similar to *Diplodocus*, had a total length of up to 140 feet (42.67 meters) and weighed almost 80 metric tons (about the weight of eleven African elephants).⁴ Even the smallest long-necked herbivores were approximately 30 feet (9.14 meters) in length.

The herbivorous dinosaurs must have required a lush plant population to survive. However, the plant material preserved in the rocks associated with their remains seems to be insufficient. Resolution of this problem is difficult for most scientists.⁵ Biblical creationists are not surprised that the necessary food supply can be found in other rock layers because they assume these layers were deposited during a worldwide Flood.

Given the dissociation of dinosaur and human bones, it is no wonder some individuals doubt that people and dinosaurs could have ever coexisted. As Christians who accept the Genesis account, it is important to realize that considerable scientific evidence corroborates the biblical story of Creation and the Flood. It is within this context that biblical creationists believe humans and dinosaurs coexisted.

Before the Genesis Flood

The role that dinosaurs may have played in earth's history has aroused the curiosity of the Christian community. In the past, some who were frustrated with the sketchy dinosaur fossil record simply refused to believe that God would have created such creatures. Within the past 15 years, however, our knowledge of dinosaurs has increased substantially. In 1990, Dodson gave a conservative count of 285 genera of dinosaurs that had been identified worldwide.⁶

These identifications by paleontologists are based on more than just one or two bones from more than half of these large dinosaurs. In addition to bone fragments, isolated bones, bone-beds and articulated skeletons, paleontologists have discovered trackways,⁷ skin impressions,⁸ gastroliths (gizzard stones),⁹ juvenile dinosaurs,¹⁰ hatchlings,¹¹ embryos, eggs, and nests.¹² Furthermore, the first appearance of at least 20 genera of dinosaurs in the geologic column (rock record) occurs

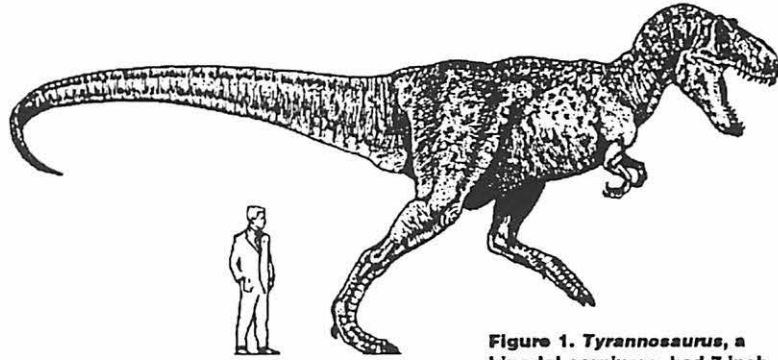


Figure 1. *Tyrannosaurus*, a bipedal carnivore, had 7-inch (17 cm) long teeth.

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The Intriguing Dinosaur

by
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in the same unit of the Triassic deposits on four continents.¹³ (It should be noted that this diverse and sudden, widespread appearance of dinosaurs in the geologic record is difficult to explain according to current evolutionary theory.) The evidence listed above strongly supports the position that dinosaurs were living, breathing organisms.

Although skepticism with respect to the existence of dinosaurs in the past is understandable, it is difficult today to deny that they did exist. The mass mortality sites and bone beds that have been discovered have yielded specimens for museum collections around the world. An example of one of these mass mortality sites is found in the badlands of Alberta, Canada. Approximately 80 centrosaurs¹⁴ were

found with *Tyrannosaurus rex* (*T-rex*) bite marks on their bones. *T-rex* "shed teeth," normally lost during feeding, were associated with the bones as well. Interpretation of the sedimentology suggests that the centrosaurs unsuccessfully attempted to cross a flooded river. The resulting mass mortality would naturally attract carnivores like *T-rex*.¹⁵ In 1984, Jack Horner's¹⁶ team uncovered a bone bed containing "at least 10,000" maiasaurs. The "herd" of maiasaurs found in the bone bed were entombed in volcanic sediments, apparently having died during a volcanic eruption.¹⁷

The task of identifying and reassembling the dinosaur bones is challenging. However, these skeletons are not just a poorly constructed hodge-podge of bones, as some have suggested. Aspects of the skulls, hips, thighs, legs, and feet are used to identify dinosaurs.¹⁸ Taxonomically, there are two orders of dinosaurs: Saurischia ("lizard hip") and Ornithischia ("bird hip") with three and six suborders, respectively. By 1990, complete skeletons of 197 genera had been reconstructed. The existence of so much dinosaur diversity before the Genesis flood suggests that there may have been a "kind" of dinosaurs that formed a part of God's original creation. Although there are a number of giant genera, 31 of the 58 dinosaur families have no members exceeding 20 feet (6.09 meters) in length,¹⁹ the size of a contemporary African elephant.²⁰ With this in mind, perhaps it is not so difficult to envision a pre- or postflood world that included these smaller carnivorous and herbivorous dinosaurs.

The giant genera seem to pose a problem for some people. Many Christians are uncomfortable with the idea that God might have created large carnivores such as *T-rex* and *Allosaurus*, or even some of the "smaller" meat-eaters like *Velociraptor*. One possible explanation is that during the time between Creation week and the Flood, the effects of sin altered many organisms, including the dinosaurs.

Dinosaur Survival

Some Christians have used the Bible texts speaking of an animal called "leviathan" (Job chapter 41) as biblical support

for the existence of dinosaurs both before and after the Flood. Other individuals have suggested that various legends about dragons represent historical evidence for the coexistence of dinosaurs and people. It would not be difficult to find evidence for the existence of dinosaurs after the Genesis flood if we could find the articulated skeleton of a *Velociraptor* impaled on the tusk of a fully articulated woolly mammoth, an animal commonly associated with human history. In reality, dinosaur remains have not been found in deposits above the Cretaceous rocks. This fact, however, does not necessarily rule out the possibility of some dinosaur survival via Noah's ark.

It seems reasonable to assume that not all of the earth's surface was exposed simultaneously as the Flood waters receded. In other words, rocks that are visible today may represent material deposited either (1) during the Flood, (2) as Flood waters receded, or (3) after the close of the Flood year. Within the context of a short chronology for the history of life on earth, postflood deposition of dinosaur remains would need evidence of passing time after the period of deposition postulated during the one-year Flood. In addition, the remains should occur at or near the top of the rock record of the region in which it was deposited so that no Flood-deposited material overlies it. There is the possibility that such a scenario was recorded in the Cretaceous deposits in the state of Montana, U.S.A.

Evidence from "Egg Mountain"

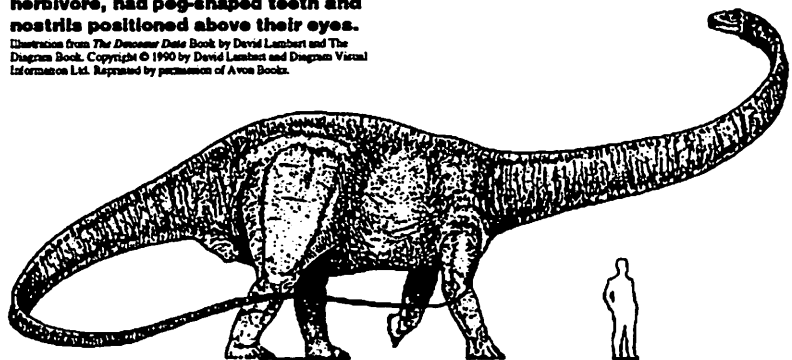
When attempting to determine whether dinosaurs survived the Genesis flood with the other land animals preserved

in Noah's ark, biblical creationists may find some evidence by studying dinosaur nests. The Willow Creek Anticline, Montana, may have served as a nesting area for *Orodromeus*, *Maiasaura*, and *Troodon*.²¹ The nests may have been made either during or after the Genesis flood.

Orodromeus was a bipedal plant-eating dinosaur about 8 feet (2.43 meters) long with a "horny beak, short arms, long agile legs and long stiffened tail."²² This ornithischian dinosaur built nests that consisted of up to 24 eggs laid in a spiral pattern, with points down. Some of the unhatched eggs contained identifiable embryos. Since researchers have found some eggshell material that is broken but not crushed, they have suggested that the young may have left the nest soon after hatching.

The second nest-building dinosaur at the Montana site was *Maiasaura*, a 30-foot (9.14 meters) long herbivore.²³ Several maiasaurs may have constructed as many as 11 nests on a single level. Four of the bowl-shaped nests consisted of only eggshells, but four others contained hatchlings. One of the nests had 11 hatchlings inside with 4 more babies nearby. Three partial clutches were found. In one nest, 10 eggs were found in a paired, linear arrangement with an 11th egg nearby. Unlike the *Orodromeus* young, baby *Maiasaura* may have remained at the nest site to be cared for by adults. This idea was suggested for two reasons: eggshells associated with the maiasaur hatchlings are crushed more than the *Orodromeus* shells and, in at least one nest, the teeth of the babies were worn, indicating that they were being fed at the nest site for some time after hatching.²⁴

Figure 2. *Diplodocus*, a quadrupedal herbivore, had peg-shaped teeth and nostrils positioned above their eyes.
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The third variety of dinosaur nest found in this region belonged to *Troodon*, a bipedal flesh-eater about 6 1/2 feet (1.98 meters) in length with large eyes and a retractable second toe.²⁵ The *Troodon* clutches contained paired eggs in linear rows.

The fact that these are eggs of dinosaurs seems to be well established. In addition, the patterns in which these eggs were found clearly suggest that these are indeed nests, and not merely eggs randomly transported by flood waters or other agencies. Egg Mountain, one of the nest sites of the Willow Creek Anticline, is characterized by several layers of nests.²⁵ It is possible the nests represent successive nesting activities of various groups of dinosaurs that entered the area at the height of the Flood or during its latter stages. Preservation of the nests required rapid burial of the eggs and young *in situ*. The Genesis flood could have provided the conditions necessary for this type of preservation. This scenario implies that dinosaurs did not survive the Flood.

An alternative model suggests that the nests may represent successive nesting seasons. While that view might well support a postflood interpretation for the nesting sites, such deposits provide limited evidence for any extended postflood dinosaur survival, since confirmed Cenozoic dinosaur remains have not yet been found. This rather tenuous and somewhat ambiguous evidence may imply that their survival was short-lived. If that is true, their demise is not too surprising. Extinctions were to be expected in the dramatically altered and unstable postflood world. The cataclysmic destruction of the earth by water had an impact on the marine systems, the structure of the earth, the climate and plant life, as well as on the animals released from the ark.

Questions Remain

The history of dinosaurs is fascinating, and many people have some strong opinions about these creatures. As Seventh-day Adventist Christians we need to be cautious because dinosaurs are not addressed by name in either the Scriptures or in the writings of Ellen G. White. Those descriptions usually attributed to the dinosaurs (e.g., "large animals"²⁷ and "amalgamation"²⁸) may also be applied to other organisms that are preserved in the fossil record.

Even though we may not fully understand the role of dinosaurs in earth's history,

With Regard to *Jurassic Park*²⁹...

The book written by Michael Crichton and the film produced by Steven Spielberg have generated a lot of interest in dinosaurs, so a few quick notes with regard to that material may be appropriate:

Of the 10 dinosaurs discussed in the book, five occur in Cretaceous deposits: *Velociraptor*, *Gallimimus*, *Tyrannosaurus rex*, *Triceratops*, *Parasaurolophus*. *Procompsognathus* occur in Triassic deposits. The rest are Jurassic.³⁰

Velociraptor as depicted in the film is about twice its actual size.³¹

Procompsognathus (Compys) and *Dilophosaurus* (Dilophs) are portrayed with poisonous features. The Compys supposedly had a poisonous bite and the Dilophs spit poison. The skulls of these dinosaurs apparently do not contain structures indicative of poison glands or sacs. The poisonous nature of these animals as portrayed in *Jurassic Park* is based on evolutionary theory as well as the proposed relationships among dinosaurs and birds that use nerve toxins, toads that numb their prey, and spitting cobras.³²

Dinosaur coloration for the film and book is based on evolutionary theory and the supposed relationships among dinosaurs, birds, and lizards.

The pack behavior attributed to *Velociraptor* (Raptors) does not seem to be well supported in the scientific literature. A death assemblage of a Raptor and a *Protoceratops* has been

found.³³ The articulated remains of the *Velociraptor* wrapped around the head of the *Protoceratops* would not be expected if a pack of the predators had been present at the kill. The Raptor apparently acted on its own.

The dinosaur named *Brontosaurus* is now identified as *Apatosaurus*.³⁴ The original animal had the head of a hadrosaur and the body of an apatosaur. When that error was corrected, the name was changed. The rearing of the dinosaur on its hind legs has been postulated from the anatomy of the hips and backbone.³⁵

Herd behavior of the duckbill dinosaur *Parasaurolophus*, the horned dinosaur *Triceratops*, and the very small *Othy* is based on bone bed deposits; whereas the herd behavior of the ostrich-like dinosaur *Gallimimus* and the Compys is postulated from the distribution of adult tracks.³⁶ Neither database should be used as strong evidence for herd behavior. Better evidence for herd behavior documented from trackways of the *Apatosaurus* contains both juvenile and adult tracks with the juvenile tracks occurring in the center of the trackways.³⁷

Tyrannosaurus rex is portrayed as shaking its prey. This behavior is based on the neck vertebrae and muscle attachment scars. The S-shaped curve of the neck would have enhanced the muscle power in the neck.³⁸

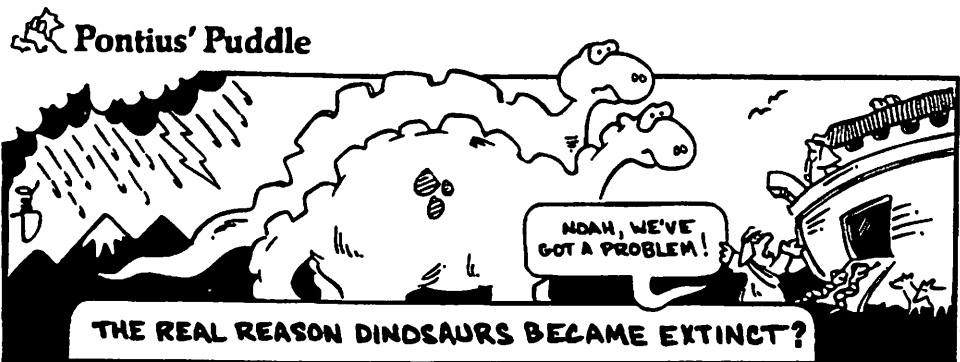
It is clear from the biblical record that the Genesis flood was a judgment against humanity's sin that largely destroyed the antediluvian plant and animal kingdoms. Dinosaurs also suffered in that destruction. It is equally clear from the Flood account that God directly intervened to save all of His creation that He could possibly save. Some of the dinosaurs may have been included in that effort. □

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Notes and References

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