

And so the ultimate example of order will be the resurrection, when the wisdom and power of God will be used to recreate order from this chaotic world of sin and death: "Death is swal-

lowed up in victory. O death, where is thy sting? O grave, where is thy victory? . . . But thanks be to God, Which giveth us the victory through our Lord Jesus Christ" (vv. 54-57).

What happened to the dinosaurs?

John Nicholls

THE INTENTION of this article is to set before readers the evidence available about dinosaurs and to let them make up their own minds. No new theory or evidence will be produced, and the three broadly different viewpoints that believers in the Biblical account of Creation hold about dinosaurs will be presented. There are many questions about Creation that Bible believers would like answers to, and the significance and fate of the dinosaurs is one of them. We have to admit that there are many things we do not know about dinosaurs. We should therefore be prepared to think about such evidence as there is, and be content to wait for the day when, perhaps in discussion with one of the angels, we will be given the answers to our questions. Our God, and His angels, are witnesses to the whole story of the dinosaurs, and they alone can give the accurate, scientific answers that we seek.

Dinosaur fossils were found way back in the seventeenth century, but it was not until the nineteenth century that scholars publicly declared their belief that large reptiles once lived on the earth but were now extinct. By 1841 so many large fossilised reptilian bones had been found that Richard Owen proposed to the British Association for the Advancement of Science meeting at Plymouth that a new group of reptiles should be recognised, which he named 'dinosaurs' (meaning 'terrible lizards'). Since that time, dinosaur fossils have been found in all the continents of the world, and more than 800 species have been described, ranging from quite small ones, like *Compsognatus*, only sixty-five centimetres long, to the huge *Diplodocus*, twenty-seven metres long.

The evidence for dinosaurs¹

Where does information about dinosaurs come from? It comes from two sources, the first of which is fossils. These are traces of past life preserved in the rocks. Fossils are found in sedimentary rocks, and they are formed by the animal

being covered with some sort of sediment before the carcase is set upon by scavengers, or disintegrates. Once it had died, and the sediment had covered it, the flesh and other soft parts of the dinosaur rotted away, leaving the hard bones and teeth behind. Sediment would build up on top of the bones, compacting into rocklike limestone or sandstone. Minerals from water percolating through the surrounding rocks would seep into the bone structure, impregnating the tiny spaces and often altering the original mineral in the bone. These fossils, part original bone, and part rock, are described as 'petrified'.

Natural mould fossils develop where acidic water in the ground dissolved the bone away and left a hollow mould where it used to be. Rubber latex or plaster of Paris can be poured in to create the precise shape of the bone that used to be there. In some cases, these natural moulds fill up with sediments to build up a 'natural cast' fossil.

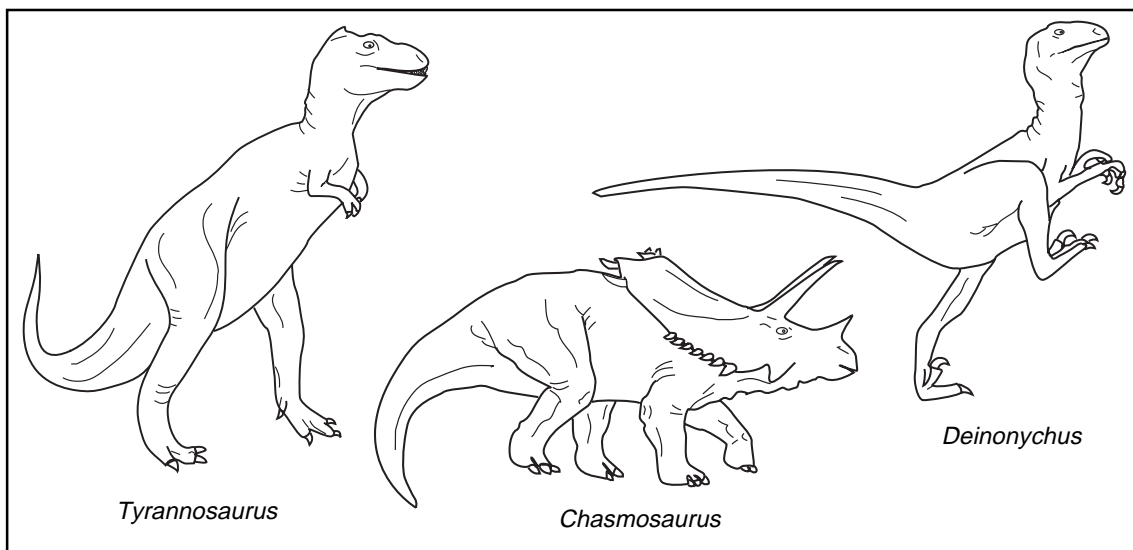
Very rarely, a dinosaur's body was covered in a dry environment, and some of the parts became mummified and then fossilised. The texture of the skin, and folds in it, can be clearly seen in these fossils. In addition to these fossilised remains, there are fossilised footprints ('trackways'), fossilised nests and eggs, scratches, tooth marks, fossilised dung and stomach stones.

The second source of information about dinosaurs comes from observations of animals alive today. Comparative anatomists are scientists who study animal structure to determine relationships between species. By comparing them with reptiles living today, such scientists suggest how dinosaurs stood and walked, how they behaved, communicated and hunted.

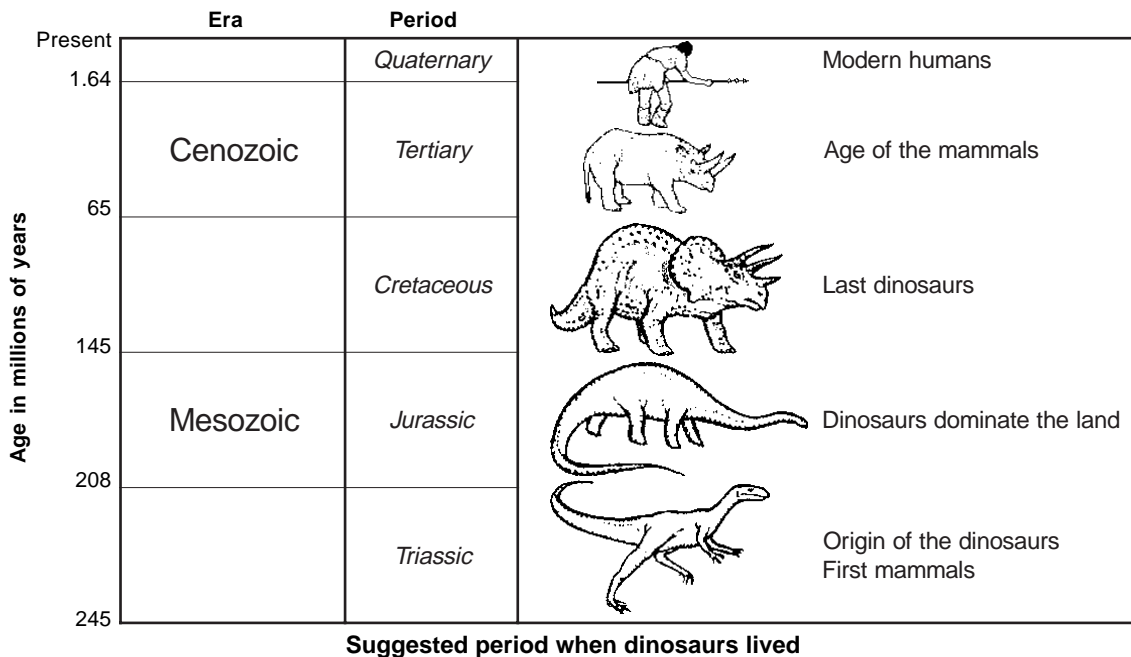
1. The following publications have been used for this section: T. Gardom and A. Milner (2000), *The Natural History Museum Book of Dinosaurs*, Carlton; A. Charig (1979), *A New Look at the Dinosaurs*, Heinemann; L. R. Croft (1982), *The Last Dinosaurs*, Elmwood Books.



Dinosaur discoveries have been made on every continent. Some of the fossil sites are very remote indeed, such as northern Alaska and Antarctica.



Some dinosaur reconstructions



How dinosaurs lived

The evidence from these sources tells us quite a lot about how dinosaurs lived. They had what is called a 'fully improved stance', with legs held straight under the body at all times, unlike crocodiles and lizards. The absence of tail-drag marks in the fossilised trackways suggests that most dinosaurs kept their tails up off the ground when they walked. Some of the smaller dinosaurs could have moved swiftly, but a gentle amble was probably all that the larger ones could manage.

As far as food was concerned, the fossilised jaws and teeth tell us that some dinosaur species were plant-eaters while others were meat-eaters. By comparing it with the elephant, it seems probable that a thirty-ton *Brachiosaurus* would have needed a ton of vegetation per day. Other types of dinosaur would have eaten eggs, hard fruit or shellfish. *Allosaurus* and *Tyrannosaurus* were hunters, as shown by their teeth, and many of the meat-eaters were probably scavengers. Fossils of dinosaur eggs have been found, including some with young inside. They had fully formed leg bones and joints, and would have been able to carry their own weight.

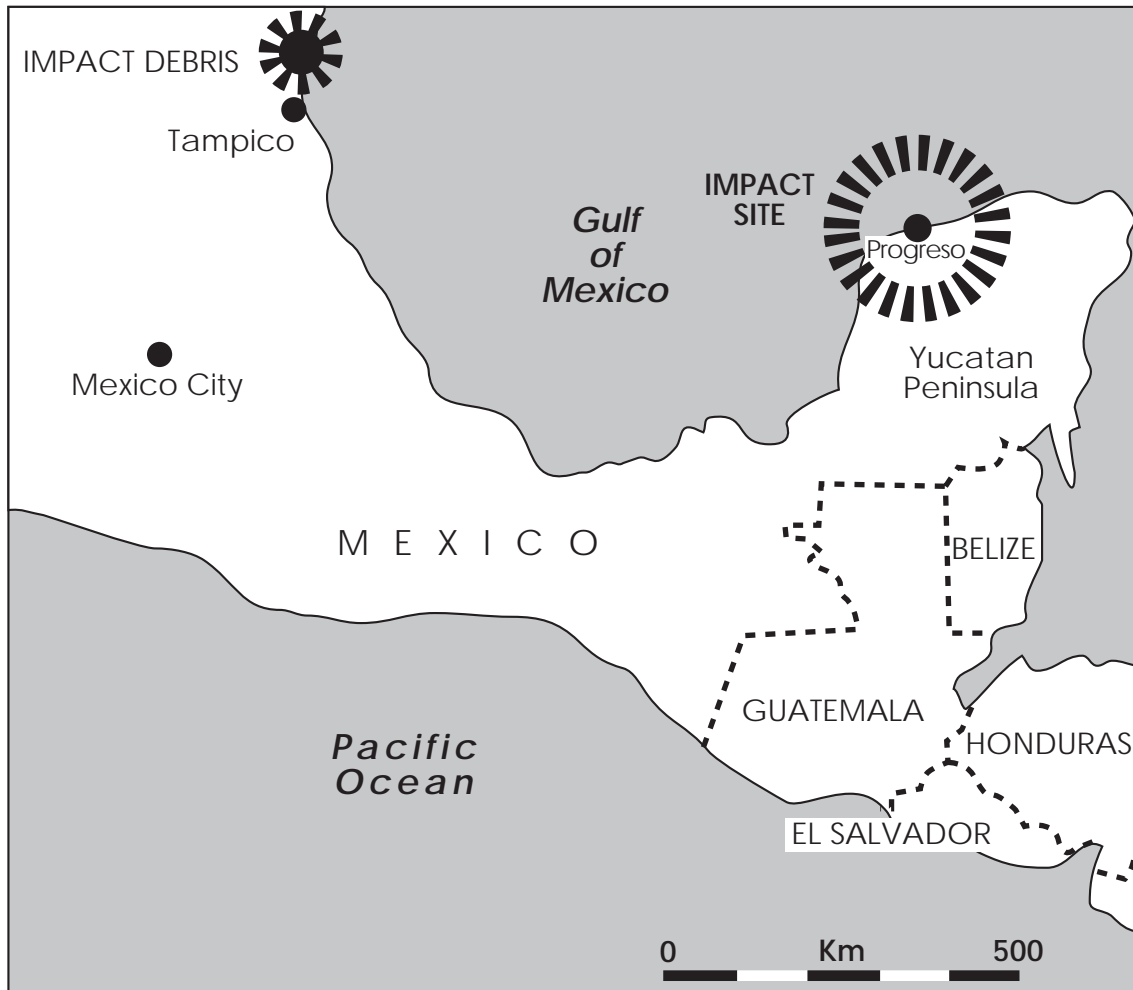
What happened to the dinosaurs?

The main purpose of this article is to consider within a Biblical framework why the dinosaurs suddenly disappeared, as revealed in the fossil record. Although there are reservations about

the dating methods,² many scientists think that dinosaurs first appeared 245-235 million years ago, at the beginning of what is called the Mesozoic era. This era is divided into three parts, called the Triassic, Jurassic and Cretaceous periods. In the Jurassic period dinosaurs are reckoned to have spread to every habitable part of the land surface.

During the Cretaceous period, it is thought that the outlines of the continents were roughly those that we recognise today. The varieties of dinosaurs and the numbers of dinosaurs in this period were at their greatest. These huge populations were then wiped out, about 65 million years ago, at the end of the Cretaceous period. The fossil record shows that other fossil groups such as ammonites (shellfish), belemnites (octopus and squid-like animals), many flowering plants, and pterosaurs (but not birds) also perished. In addition, all marine reptiles except turtles were wiped out, but, on the land, mammals and all other reptile groups (crocodiles, lizards, snakes, tortoises and turtles) survived.

2. See the following: D. B. Gower, *Radiometric Dating Methods* (Pamphlet 207, Evolution Protest Movement); A. J. Monty White, *How Old is the Earth?* (Pamphlet 279, Creation Science Movement, 1991); R. Milton, *The Facts of Life* (Corgi Books, 1992). See also "[Calibrated radiocarbon dating](#)" in this Special Issue, p. 206.



Suggested site of asteroid impact

The asteroid theory

In America, studies on the numbers of dinosaur fossils at the very end of the Cretaceous period suggest that dinosaurs were already in decline while mammals were increasing. Other studies of the K-T boundary (the point where Cretaceous rocks are overlaid by Tertiary rocks) have led to new ideas about the dinosaur extinction. Luis and Walter Alvarez found a layer of red clay, two centimetres thick, at the K-T boundary. Tests showed that the clay layer contained a level of the element iridium over thirty times higher than the average. Iridium is a very rare element in the earth's crust. It usually arrives in the cosmic dust from space that is constantly showering the planet, or more unusually from the earth's core when some types of volcano erupt.

The Alvarezes suggested that a huge asteroid ten kilometres across hit the earth 65 million years ago, leaving the iridium in the K-T boundary. Tidal waves and volcanic eruptions would have resulted, and the asteroid would have vaporised, sending up a huge cloud of dust, gases and water vapour into the atmosphere. The iridium spike that the Alvarezes found first in Italy has since been found in the K-T boundaries of fifty other places around the world, confirming that some global catastrophic event did take place at this time. Plant fossils at the K-T boundary also show evidence of a catastrophic change, because, just above the boundary, a large increase in fern spores has been found in the sediments. This is interpreted as the ferns being amongst the first plants to colonise bare soil and rock, and follows the pattern observed today

when volcanoes erupt, cutting back surrounding plants and allowing hardy ferns to dominate.

The volcanic theory

Other scientists argue that, as there seem to be several iridium 'spikes' above and below the K-T boundary (between Cretaceous and Tertiary periods), it would have been unlikely that a succession of asteroids would have struck the earth around this time. They believe that the iridium could have come from the earth's core by a series of volcanoes. These massive volcanic eruptions would have caused all the effects that an asteroid impact would have done. Evidence of volcanic activity at this time, about 66 million years ago, comes from the Deccan region of India, where thick layers of basalt lava have formed.

The volcanoes could have brought iridium-rich lava to the surface and pumped out huge amounts of carbon dioxide, which could have acidified the seas and altered weather patterns. This, it is argued, made it impossible for dinosaurs to adapt and survive. In particular, it is believed that the eggshells of dinosaurs could have been adversely affected by the volcanic activity because increased selenium levels are found in dinosaur egg nests from the Cretaceous era. Selenium is very poisonous and might have killed the growing dinosaur embryos.

Other theories and problems

There have been many other theories about the dinosaur extinction. One is that some small mammals were able to crack open and eat the dinosaur eggs, just as a mongoose eats bird and reptile eggs today. This is discounted by scientists today because it is unlikely that *all* of the dinosaurs would have been wiped out, but rather that their numbers would only have been reduced.

Another theory concerns egg temperature. In many reptiles today the temperature of their eggs during incubation determines whether the hatchling will be male or female. If there was a climate change, as it is believed there was at this time in the Cretaceous period, then it is possible that dinosaurs started to produce far more of one sex than the other, leading to an imbalance that finally caused extinction.

Scientists are unable to tell us for certain what happened. Equally they cannot explain many problems that surround their theories of dino-

saur extinction. Why did not crocodiles become extinct too? They are reptiles like the dinosaurs, and yet they survived whatever wiped out the dinosaurs. Why did flying reptiles like pterosaurs perish, but not birds? Why were so many marine mammals extinguished in the oceans, but not turtles, and the sensitive coral reefs? How was it that *all* of the dinosaurs, regardless of size and mode of eating, were wiped out? The demise of the dinosaurs poses many, many intriguing questions.

Biblical approaches to the problem

How can we, accepting the supreme authority of the Word of God, fit in the fossil record of the sudden disappearance of the dinosaurs? It seems to this writer that there are three ways in which we can do this.

Firstly, we can accept the dates given to the fossils by geologists and agree that they are much more than 6,000 years old. In this case, as Brother Thomas argued in the early pages of *Elpis Israel*, the extinction of the dinosaurs would belong to a previous creation on the earth. Scripture has nothing clear-cut to say about any creation prior to the Adamic one, but clearly, whatever our personal beliefs, pre-Adamic creations are a possibility.

A second view, held by some, is that the days of Creation were long periods, and that over these periods of many millions of years God created new organisms and allowed creatures in His creation to become extinct. This view has problems of Biblical interpretation which have been argued about at length in the pages of *The Testimony*. The Biblical problems are an apparent discounting of Bible chronologies and genealogies, which give the creation of the Adamic race as around 6,000 years ago. Further, this view requires a non-literal interpretation of the Scriptures about the reason for the sabbath law. There is also the problem that, according to the Genesis text, the land animals were created on the same day as Adam and Eve, again a few thousand years ago. For these reasons, the author does not accept this second viewpoint.

A third view—a literal six-day Creation

There is a third major explanation, which is to believe in the literal six-day Creation. This view would question the long time periods of the strata and the geological dating methods. This is not the place to go into the reasons for questioning these dating methods. Some references are given

which do so.³ Instead of the fossils being many millions of years old, they could be quite recent. In the literal six-day Creation framework, some fossils could be the remnants of the Flood that God brought in Noah's day. Instead of being the victims of an asteroid impact or volcanic activity, the dinosaurs could have been drowned in the Flood, and would have been buried in the sediments and changed rapidly into fossils. There is some evidence that fossils can form quickly, for example, after the eruption of the Mount St. Helens volcano.

This brings interesting possibilities. It would mean that men and dinosaurs could have lived at the same time. It also means that dinosaurs would have been taken into Noah's Ark, which would not have been difficult if small, young animals were selected. They could have been put into a dormant state like hibernation so that they did not need to eat much. God performed a miracle by making the animals come to Noah (Gen. 6:20), and it is entirely possible that other miracles were performed to enable Noah and his family to carry out the extraordinary task of caring for all the animals and keeping them alive in the Ark for a year.

After the Flood, dinosaurs would have again been in the earth and then become extinct, perhaps hunted to extinction by men. Job seems to describe a plant-eating dinosaur: "Behold now behemoth" (40:15). The description that follows is of a creature that would impress Job by its size and strength, much as we wonder at the size of the fossil dinosaur skeletons and the imaginative reconstructions that are made of them. Verse 17 is particularly worth noting: "he moveth his tail like a cedar". There is a similarity between a dinosaur's tail and the huge boughs of the cedar tree as they curve towards the ground. Surely such an animal would have impressed Job with the great strength and power of his Creator.

Apart from Scripture, is there any other indication that men and dinosaurs lived together? There are two pieces of evidence. First, in Texas there are sets of fossilised dinosaur trackways, by the side of which there appear to be human-like footprints. This evidence has been discussed in *The Testimony*,⁴ and is also cited in the recent *Natural History Museum Book of Dinosaurs*.⁵

The second piece of evidence comes from the many traditions of dragons and dinosaur-like creatures. The Babylonian *Epic of Gilgamesh* includes the story of the killing of a huge, vicious dragon. When Alexander the Great and his soldiers marched into India, they found that Indians worshipped huge, hissing reptiles that they kept in caves. China is renowned for its dragon stories. A pamphlet by Bill Cooper⁶ describes historical records and monuments of reptile-like monsters from the U.K. and Scandinavia. Such traditions are so widespread among the nations that it is difficult to dismiss the conclusion that men and dragon-like reptiles did coexist.

Conclusions

As stated at the beginning of this article, the only definite conclusion we can make is that dinosaurs once lived on the earth, and that they were created by our God. This author believes it is likely that they lived recently. Scripture seems to suggest that men such as Job lived alongside giant reptiles, and this is a most powerful reason for Bible believers to reject current dating methods for fossils as inaccurate. You, the reader, must make up your mind about what happened to the dinosaurs!

3. See [footnote 2](#).

4. *The Testimony*, Sept. 1999, p. 335.

5. *Op. cit.*, p. 103.

6. Bill Cooper, *Anglo-Saxon Dinosaurs* (Pamphlet 280, Creation Science Movement, 1992).

The Creator is the sole source of life, with the power to give and to take away. No living creature has a right to life. Life is a gift of the Creator. The fact that the Creator is ready and willing to share life, on certain conditions, is a wonderful testimony to His love for life. "This is life eternal, that they might know Thee the only true God, and Jesus Christ, whom Thou hast sent" (Jno.17:3) . . . The historical fact that the theory of evolution has led many to a denial of the Creator and to utter atheism should be a warning to believers not to toy with this theory. Theistic evolution is a compromise that satisfies neither faith in God nor human philosophy.