

THE SCIENCE OF THE  
BIBLICAL ACCOUNT

DR. TIM CLAREY

# DINOSAURS

MARVELS OF GOD'S DESIGN



*Triceratops* taken at the American Museum of Natural History in New York City, New York.

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## CHAPTER 1: BIBLICAL BEGINNINGS AND THE ARK

## DINOSAURS CREATED ON DAY 6

Why study about dinosaurs? Dinosaurs fascinate everybody, from young children to great-grandparents, and everyone in between. Dinosaurs have the ability to transport even the oldest person back to their childhood when they saw their first dinosaur book, read a magazine article about prehistoric creatures, or visited a museum and saw a huge skeleton. Seeing them brings out feelings of awe and wonder at their magnificence that sparks the imagination.

But this is more than a science book about dinosaurs. This is a story of discovery. However, each discovery is judged on presuppositions, or a particular starting worldview, if you prefer. How factual data, like dinosaur fossils and rocks are interpreted, depends on which presupposition you start with. If you believe the earth is about 4.6 billion years old, and life appeared on earth through some evolutionary progression over millions of years, and that there was no worldwide Flood, and that dinosaurs went extinct around 65–66 million years ago, then you hold the uniformitarian worldview. Uniformitarianists (those who believe the earth has had the same processes, unchanged for eons of time) believe life somehow began from nonlife without help of a Creator, and humans are at the end of a long progression of evolution. Unfortunately, this is the dominant worldview in science today.

If, however, you believe God's Word, that man was created in the image of God just thousands of years ago, and man's sin caused the destruction of the former world, and that God sent His Son Jesus to redeem the world, you'll interpret factual data, like dinosaur fossils, much differently. This view holds that God made everything in six days and that there was a Flood that destroyed the original world just thousands of years ago. This is the presupposition used throughout this book. Dinosaurs are examined from the worldview that God's Word is true and God willingly created dinosaurs. And this worldview completely fits with the factual evidence. The study of dinosaurs, and science in general, does not conflict with the Bible; rather, they complement one another. Dinosaurs are a great way to learn about the science of God's marvelous creation. Welcome to the science and history of dinosaurs.

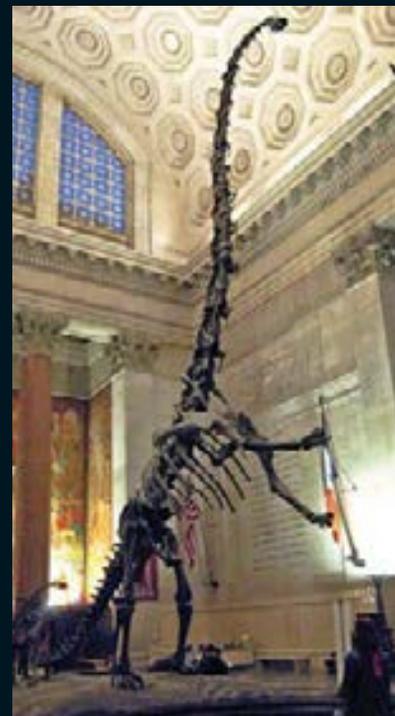
But, you may think, don't dinosaurs disprove the Bible? Aren't dinosaurs millions of years old? Did humans ever live with dinosaurs? Questions like these abound when it comes to dinosaurs, especially from Christians. Sadly, many young people lose their faith when they study science in high school and/or college, when they are bombarded by the evolutionary worldview, even at most Christian colleges. I saw these effects firsthand when I taught college geology classes. This book leads you to the answers to these questions, and will hopefully keep people from losing their faith in God's Word.

Were dinosaurs on the ark? And how could they all fit on the ark? When did God create them? These biblical questions are also addressed in this book and answers provided on the journey of discovery.

Didn't an asteroid kill all the dinosaurs? How did dinosaurs go extinct? Didn't they just evolve into birds? They had feathers, didn't they? These are more great questions I have been asked again and again. Yes, these too are addressed in this book, and the scientific evidence to support the answers is examined in detail.

Dinosaurs were discovered by Bible-believing scientists in the early 19th century. It wasn't until the mid-late 19th century that uniformitarian thought began to dominate science, as predicted in 2 Peter 3:3–4. Scientific thought was soon taken over by the uniformitarianists, naturalists and evolutionists who claimed the world was millions of years old (now even billions) and that all life evolved. And they set out to find the "facts"

The official postcard of the American Museum of Natural History says this is a *Barosaurus*, and that "this unique freestanding mount is the only *Barosaurus* on view in the world"



to prove it, corrupting the science of dinosaurs in the process. They actively twist the truth to convince people that dinosaurs are “proof” of evolution. This book rejects that notion and shows that dinosaurs, instead, are wonders of God’s creation, and their fossils are found in rapidly deposited sediment laid down in a global catastrophic Flood.

The Book of Genesis lists the order of creation week quite clearly. All the wild animals that moved along the ground, and presumably the dinosaurs, are included in the verses from Genesis 1:24–25.

In the subsequent verse (Gen. 1:26), God describes the creation of man and that He gave him (us) dominion over the dinosaurs and all the animals that had previously been created, including the birds of the air and the fish of the sea.

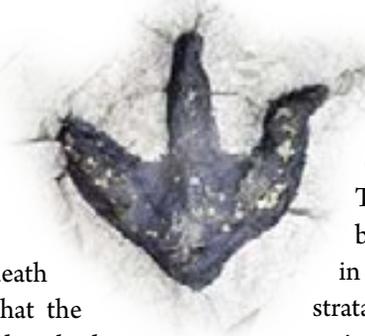
The Bible also indicates that there was no death (of animal kinds) before the first sin and that the dinosaurs and all other animals were created as herbivores or vegetarians (Gen. 1:29–30). It wasn’t until man’s sin that animals began to eat one another. Whether this happened gradually or suddenly after the first sin is unclear. Even today, paleontologists have to speculate from dinosaur teeth and jaw structure and fossil dung as to what dinosaurs ate. Teeth shape alone does not guarantee diet. Many “meat-eating” dinosaurs may have remained herbivores.

Everything was declared “good” at the end of God’s creation week. Animals lived in harmony with one another and with no fear. It wasn’t until after the Fall that animals began to “prey” on one another. After Adam and Eve were driven from the Garden of Eden they, and their descendants, probably lived far away from the dinosaurs, as we have found no confirmed human remains mixed in with the dinosaur fossils.

Most secular textbooks state that dinosaurs lived only from the Upper Triassic Period through the end of the Cretaceous Period, during a collection of time known as the Mesozoic

Era, claimed by evolutionists to be from 225 to 65 (or 66) million years ago. However, a recent discovery in Tanzania identified dinosaur bones from rocks even deeper and deposited earlier, in units identified as Middle Triassic strata.<sup>1</sup> And small dinosaur footprints have been reported in Poland that go back even further in evolutionary time, to rocks from Lower Triassic strata (claimed to be 250 million years old).<sup>2</sup> However, creation scientists interpret these rock layers as all having

been deposited during the year-long Flood that occurred just a few thousand years ago. They explain that dinosaurs are found in upper Flood rocks that were deposited later in the Flood, as they were more mobile and likely lived at higher elevations compared to many sea creatures. The energy level of the Flood also seems to have abruptly changed at the point dinosaurs and large swimming reptiles became buried in the rock strata.



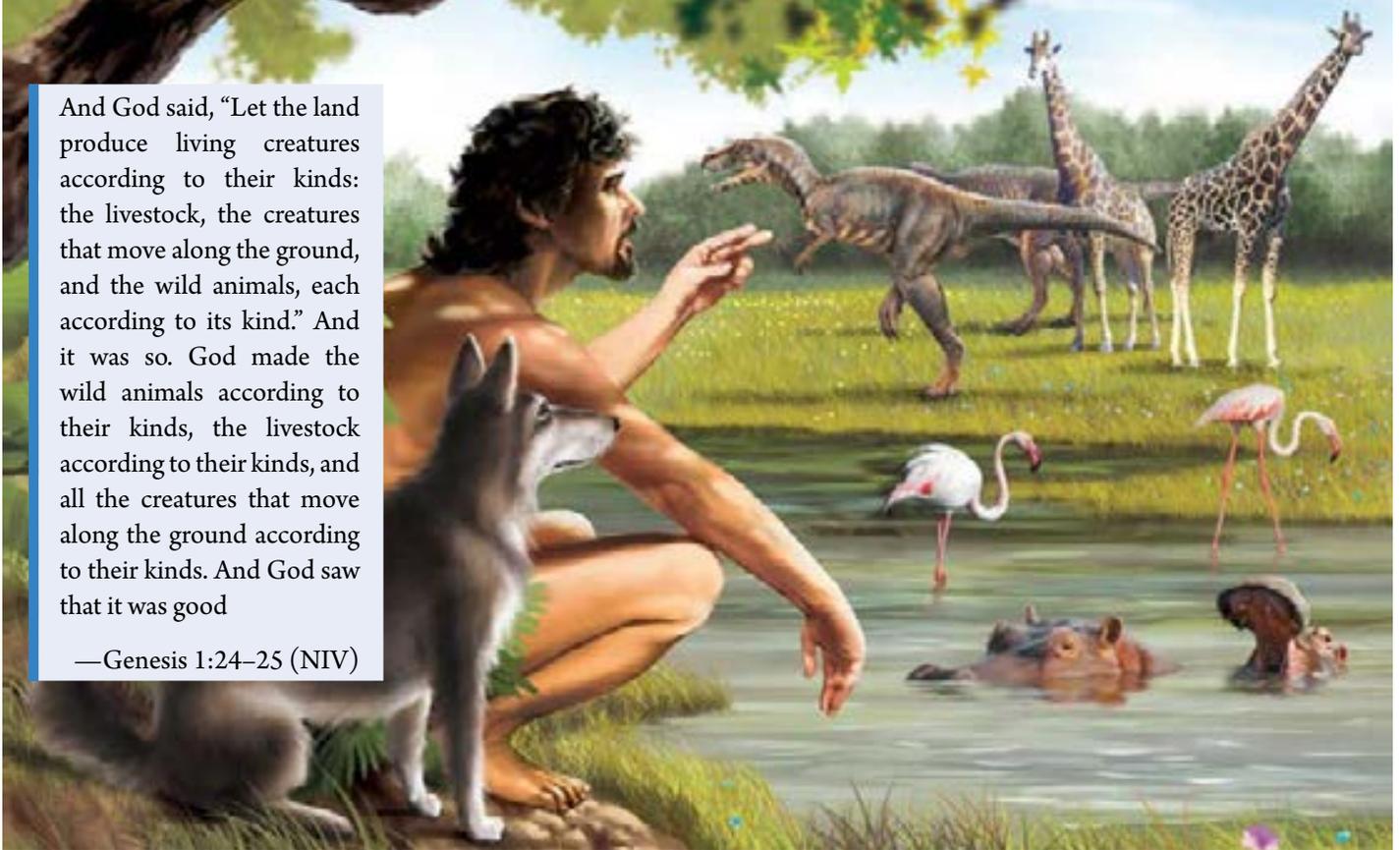
It’s not just an interpretation that dinosaurs are thousands of years old. It is based on mounting factual evidence. In 2005, Mary Schweitzer published an article claiming she found preserved dinosaur soft tissue in the bone of a *T. rex* while conducting a histologic investigation (microscopic study of bone structure).<sup>3</sup> She was not able to extract the complete DNA sequences by any means, but has partially extracted some protein, red blood cells, and

collagen. Other scientists have continued to find preserved organic remains in even dinosaur embryos. Evolutionists struggle to explain how this organic material could have survived for 70 and even 150 million years. Some nondinosaur soft tissue discoveries are even claimed to be over 500 million years old! Finding preserved organic material in dinosaur bones and other fossils fits perfectly within an age range of thousands of years ago.

Creation scientists are also finding detectable levels of carbon-14 in dinosaur bone that should have decayed to undetectable levels if the bones are truly millions of years old. These bone samples consistently show an age range of only thousands of years and not millions. In spite of these findings, evolutionists still won’t admit their old dates for dinosaurs are wrong. They now think their ideas of organic preservation must be wrong. They just can’t admit that dinosaurs were alive until very recently.

And God said, “Let the land produce living creatures according to their kinds: the livestock, the creatures that move along the ground, and the wild animals, each according to its kind.” And it was so. God made the wild animals according to their kinds, the livestock according to their kinds, and all the creatures that move along the ground according to their kinds. And God saw that it was good

—Genesis 1:24–25 (NIV)



The “deepest” dinosaur ever discovered was found in an oil well core taken from 1.4 miles below the base of the North Sea, between Norway and Greenland (Snorre field).<sup>4</sup> The core contained the knucklebone of a *Plateosaurus*, a common prosauropod dinosaur found in Upper Triassic rocks of Europe. Scientists were amazed to find a terrestrial dinosaur in an area

containing so many marine sediments and out in the deep ocean. Creation scientists don’t find this as surprising, as many terrestrial and marine animals were often mixed together during the great Flood. It’s not a mystery that some of these dinosaurs were also swept out to sea by the unimaginable violence of the Flood waters and deposited in ocean sediments.

## DINOSAURS ON THE ARK

According to the Bible, dinosaurs were included on the ark. Genesis 6:20 states, “Of the birds after their kind, of animals after their kind, and of every creeping thing of the earth after its kind, two of every kind will come to you to keep them alive.” All of the various kinds of dinosaurs were included in this act of God’s divine providence.



**Noah’s ark:** The ark was very large — 300 cubits long, 50 cubits wide, and 30 cubits high (Gen. 6:15). If we use the most conservative length for the ancient cubit of 17.5 inches, the ark would have had dimensions of 437.5 feet by 73 feet by 43.75 feet. Dr. Henry Morris Jr. has pointed out that these dimensions were ideally designed for maximum capacity and stability. He further pointed out that a vessel of these dimensions would have been practically impossible to capsize even in the extreme violence of the Flood waters.

Dr. Morris calculated that the dimensions of the ark would have provided room for as many as 125,000 sheep-sized animals (155 lbs. or 70 kg.). Because many extinct and extant animals are smaller than sheep, Dr. Morris concluded that only about half the capacity of the ark would have been needed for animal storage. The other half could have been filled with water and food. God designed all animals as herbivores (Gen. 1:29) and fully capable of subsisting on plants alone. The food stored on the ark, and required to feed the dinosaurs and all animals, would have been only varieties of plants.<sup>5</sup>



John Woodmorappe has estimated that 139 pairs of Ornithischia (bird-hipped) dinosaurs and 195 pairs of Saurischia (lizard-hipped) dinosaurs would have been needed on the ark.<sup>6</sup> However, if the biblical “kind” is closer to the *family*, then this number would have been much smaller, requiring at most 60 pairs total for all dinosaurs. As you will see below, there are only 60 dinosaur families recognized by evolutionary paleontologists.

youthful and at the onset of maturity, and not the largest and oldest dinosaurs so often seen in museums. The dinosaurs taken on the ark might have only averaged 150–220 pounds (70–100 kg), or about sheep-sized.

Nonetheless, many dinosaurs were much larger than a sheep, so how did they fit? In fact, the median weight of a fully grown, adult dinosaur was closer to the weight of an American bison (1,386 pounds or 630 kg), based on a study of 350 dinosaur species.<sup>7</sup> This may be less than most people think, considering that some adult dinosaurs were nearly half the length of a football field. But just because the median size of an adult dinosaur was fairly large, it doesn’t mean there was a room problem on the ark. Most dinosaur pairs on the ark would likely have been smaller,

All dinosaurs went through a year or two when they grew very rapidly, a growth spurt if you will, similar to teenage humans (see the section on dinosaur biology).<sup>8</sup> Dinosaurs were possibly taken on the ark about a year prior to this growth spurt, thereby needing less to eat over the course of the year-long Flood. After the Flood, upon their release to the land, the dinosaurs would have experienced their growth spurt, rapidly maturing to adult size, and presumably sexual maturity, and therefore, able to fulfill God’s command to repopulate and fill the earth (Gen. 9:7). In order to fulfill this command, the so-called meat-eating dinosaurs (theropods) probably ate only plants after the Flood, at least for some time, before returning to their meat-eating ways.



Animals of all kinds came to the ark on God’s command, including about 60 kinds of dinosaurs.

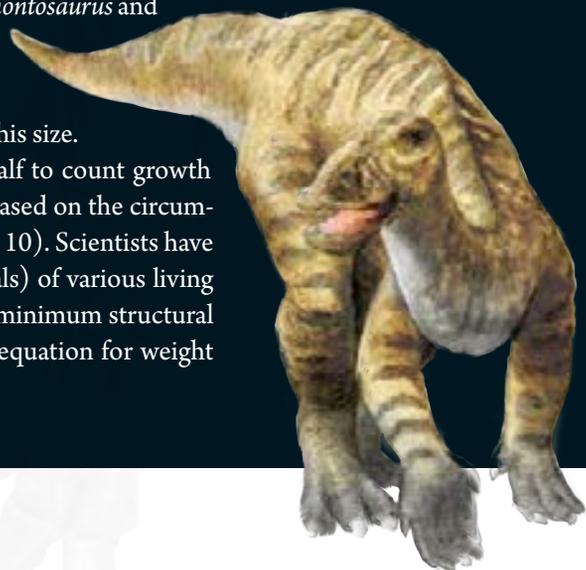


## ICR'S JUVENILE DINOSAUR "EDDIE"

In 2008, the Institute for Creation Research in Dallas, Texas, acquired "Eddie," a rare juvenile *Edmontosaurus* (duck-billed hadrosaur). This "little" dinosaur is about 10 feet long and 5.5 feet tall. He was discovered in 1990 in Montana's Upper Cretaceous Two Medicine Formation, which is famous for its dinosaur discoveries, including thousands of bones from the *Maiasaura* — a type of large, duck-billed dinosaur.

Because juvenile dinosaurs are quite rare, little is known about the growth patterns of most dinosaurs. However, the Two Medicine Formation provides specimens from many stages of growth of the *Maiasaura* — enough to allow scientists to plot their growth history. *Edmontosaurus* and *Maiasaura* are very similar, falling into the same subfamily of Hadrosauridae, which likely places these two genera in the same biblical "kind."

Using the growth history of the *Maiasaura*, we can estimate Eddie's age from his size. Because we didn't want to damage the specimen by cutting a leg bone in half to count growth rings (similar to tree rings), we used an equation to estimate Eddie's weight based on the circumference of his femur (see section on "How Heavy Is That Dinosaur" in chapter 10). Scientists have measured the femur (the main weight-bearing leg bone of two-legged animals) of various living animals at the midpoint where the bones are the thinnest (to determine the minimum structural support necessary). Using these numbers, researchers have found a best-fit equation for weight versus femur circumference for all two-legged animals, including dinosaurs.



The beauty of the circumference method is its simplicity — all we need for a weight estimate of a given fossil specimen is a leg bone, and leg bone fossils are often well-preserved. So how does Eddie weigh in? The circumference of the thinnest point of his femur is 167 mm. By using the bipedal equation given in chapter 10, we arrive at a weight estimate of 412 pounds, or 187 kilograms (1 kg = 2.2 lb).



Given this weight, how old was Eddie when he died? If we use the published growth curve for the *Maiasaura*,<sup>9</sup> we see that duck-billed dinosaurs grew slowly for the first four years and then hit a rapid growth spurt between ages five and six. During that time, hadrosaurs could have been gaining as much as 2,292 pounds (1,042 kg)

*Brachiosaurus* femur, or rear thigh bone, and geologist Metrinah Ruzvido in Zimbabwe.

per year in body weight. By the time they reached six or seven years old they would have been nearly adult size at over 3,300 pounds (1,500 kg) and presumably becoming sexually mature. An adult *Edmontosaurus* could reach 37 feet in length and stand about 18 feet tall.

Eddie's 412-pound weight places him in the four-year-old range, just before the onset of the growth spurt. A hadrosaur dinosaur of this age and size would have been a perfect candidate for Noah's ark. Unfortunately, Eddie wasn't on the ark — he died by rapid and catastrophic burial in sediment during the Great Flood, only to be found by paleontologists later and put on display as a witness to this judgment event.

God may have placed a similar pair of four-year-old hadrosaurs on the ark, knowing these dinosaurs were the perfect age and size for the journey. They would not require much room or much to eat during the year-long Flood. Upon leaving the ark at age five, however, they would have required a lot of food as they hit their growth spurt. In addition, these dinosaurs would likely have become sexually mature soon after leaving the ark, able to quickly fulfill God's command to multiply upon the earth (Genesis 8:17).

## WHAT IS A DINOSAUR?

People of many cultures had found dinosaur bones for many centuries before dinosaurs were recognized. They explained their finds as dragon bones, giant human bones, or other “beasts” of the field. The name “Dinosauria” was first used by Sir Richard Owen in 1841, in an address to the British Association for the Advancement of Science, subsequently publishing the term in 1842. He was the first to recognize that dinosaurs (from the Greek, meaning “fearfully great reptiles”) were a distinct group of reptiles, much different from today's lizards. Owen defined dinosaurs as reptiles that walked erect, having a posture similar to elephants and rhinos, where the legs come straight down from their bodies. He realized this after examining their hip structure and the holes in the hip sockets.

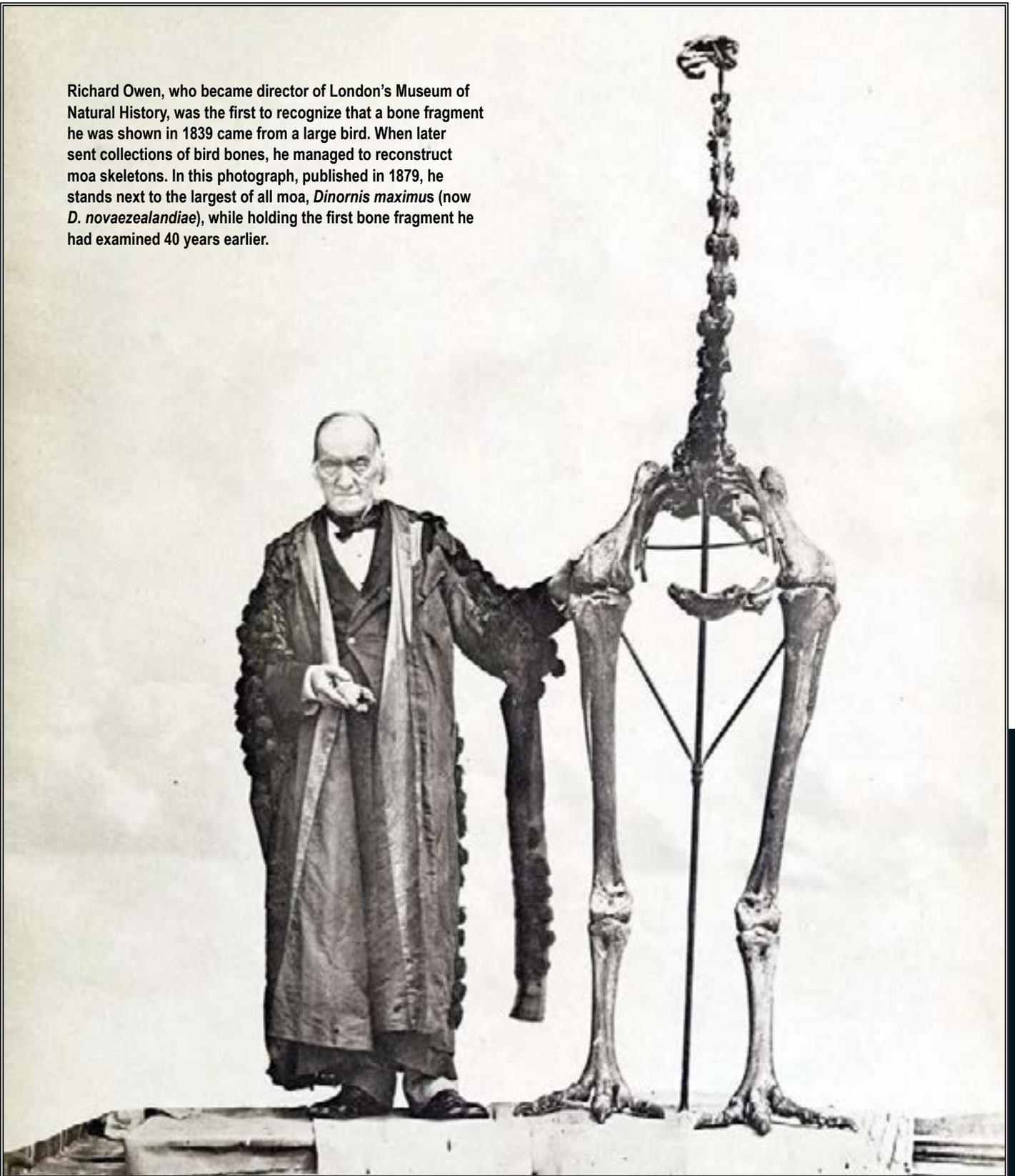
However, there were some early paleontologists who still thought dinosaurs walked in the sprawling, belly-dragging style of alligators and crocodiles. Around 1910, several German paleontologists, including Gustav Tornier, backed the sprawling leg style of lizards for their reconstructions of dinosaurs. The matter was eventually settled after examination of the large rib cages of dinosaurs that necessitated long, straight legs to elevate the body frame above the ground. Other paleontologists pointed out the sprawling posture would have forced the legs to be disjointed. Footprint data have also confirmed the upright posture. Thousands of dinosaur footprints show a pace angulation that places the feet close together (no sprawl) and no belly-dragging marks (with one possible exception where the dinosaurs

were mired up to their hips in mud). There is no scientific dispute on dinosaur posture today.

Sir Richard Owen was the best known and most authoritative comparative anatomist and reptile expert in the mid-19th century. He picked up the scientific baton (so to speak) right where France's Baron Georges Cuvier left off as the “go-to guy” in animal anatomy. Cuvier was a wonderful scientist and broke significant barriers in his studies. He was the first to point out that some animals had gone extinct, startling the scientific world, in an announcement he made in 1796.

Amazingly, up until that time, no one had thought anything could go extinct. It was wrongly believed that God wouldn't allow it. But, the sin of man and the Curse

Richard Owen, who became director of London's Museum of Natural History, was the first to recognize that a bone fragment he was shown in 1839 came from a large bird. When later sent collections of bird bones, he managed to reconstruct moa skeletons. In this photograph, published in 1879, he stands next to the largest of all moa, *Dinornis maximus* (now *D. novaezealandiae*), while holding the first bone fragment he had examined 40 years earlier.

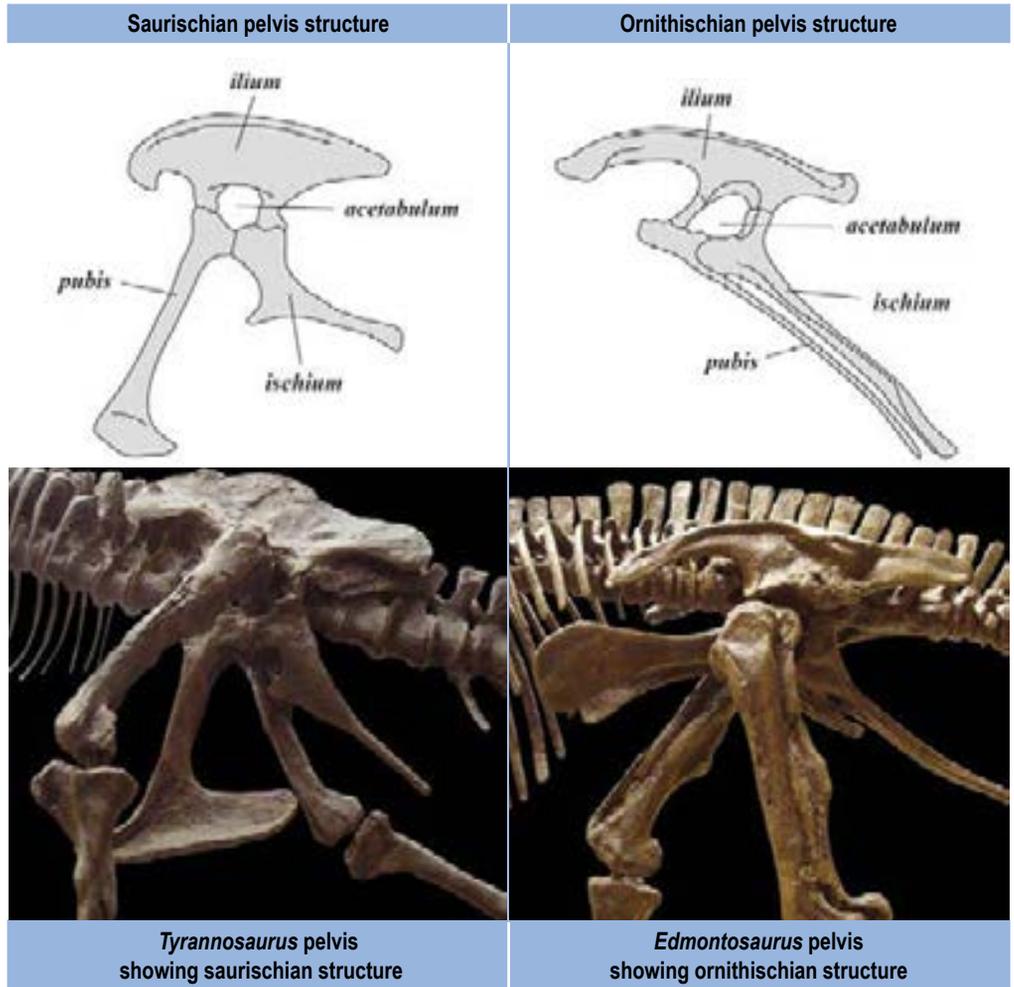


had caused many species to disappear after the Flood, and Sir Richard Owen had identified an entire group of now-extinct reptiles. Later in his life, Owen was also an outspoken anti-evolutionist and was critical of Charles Darwin's theory, arguing

extensively against evolution. This is no small point. Here was the 19th century's most knowledgeable anatomist and animal expert, and he didn't see any evidence to support evolution.



Another British paleontologist, Harry Seeley, later divided the dinosaurs into two categories based on more subtle hip differences. He called one group the Ornithischia, or bird-hipped style, and the other the Saurischia, or lizard-hipped style. All dinosaurs can be classified into one hip style or the other. Although the pelvic bones of the Saurischia resemble a lizard, these dinosaurs still had holes in their hip sockets for walking upright.



Dinosaurs did not have wings, flippers, or fins. Those are, instead, flying reptiles and swimming reptiles, respectively. Even though they are found in the same rock strata as dinosaurs, they were not dinosaurs as defined by Owen. Dinosaurs walked, and occasionally ran, on land. Some had “sails” on their backs like *Spinosaurus*, but the one famous sail-backed reptile was not a dinosaur at all. It was, instead, a lizard-like animal called *Dimetrodon*. Many fossil reptiles, like *Dimetrodon* (which grew to lengths of nearly 10 feet), are similar to lizards of today, as they have sprawling hips and legs that extend outward from their body.

All of the theropod dinosaurs (many of which became meat-eaters after the Fall) and the sauropodomorph dinosaurs (the long-necked herbivores) have similar,

lizard-style hips (Saurischia). All other types of dinosaurs had birdstyle hips (Ornithischia). It is rather ironic that the so-called, most bird-like dinosaurs (theropods) had lizard-style hips. This should be a “red warning flag” to the evolutionists who want to make dinosaurs birds and vice versa.

Swimming reptiles like Mosasaurs, Plesiosaurs, and Ichthyosaurs lived exclusively in the marine realm and did not walk on land, nor did they have the hip structure of dinosaurs. Origins of the Ichthyosaurs, and all marine reptiles for that matter, remain a problem for evolutionists, as they appear suddenly in the rock record perfectly designed for aquatic life. It appears that these reptiles may not have even laid eggs on land as the sea turtles do today. One spectacular fossil

has been found that shows an Ichthyosaur giving live birth in the water, just like dolphins and porpoises.

Pterosaurs and other flying reptiles are also not truly dinosaurs as defined by Owen. They are quite unique, however, and were designed to fly completely differently than birds or bats. Birds fly primarily with feathers, and bats support their wings with several long finger bones. Flying reptiles, by contrast, have a single finger made of extended bones, starting with the fourth metacarpal to which is attached four elongate phalanges. This one long finger makes the base support for the entire wing membrane. The remaining three fingers serve as short claws on the front of the wings.