Table of Contents

Foreword

Preface

Chapter 1 Dinosaur Mysteries 11

Two dinosaur puzzles 13
- Were dinosaurs warm-blooded? 13
- Dinosaur graveyards 15

Two views on dinosaur fossils 15
- Evolutionary dinosaur challenges 18
- Creationist dinosaur challenges 19

Questions about evolution and time 20

IN-DEPTH SECTION
- Is evolution a fact? 21
- Is the earth billions or thousands of years old? 22
- 'Slow processes' accelerated by the Genesis Flood 23
- Radiometric dating greatly flawed 24
- The starlight/time problem 26
- Some dating methods give young ages 26
- Summary 27

Chapter 2 Dinosaurs Challenge Evolution 31

Dinosaurs ate grass 31
Plate tectonics conundrums 32
Where did dinosaurs come from? 32
Missing transitions between types of dinosaurs 33
Polar dinosaurs? 37
- Northern Hemisphere polar dinosaurs 37
- Southern Hemisphere polar dinosaurs 37
- Uniformitarian puzzles 38

Desert dinosaurs? 39
- The example of the Coconino sandstone 40
- Summary 40

Unfossilized dinosaurs 41
The gastroliths that aren't 43
How did dinosaurs go extinct? 43

IN-DEPTH SECTION
- Problems with the meteorite extinction hypothesis 45

Chapter 3 Did Dinosaurs Die in the Flood? 51

The Genesis Flood not proven wrong by the Enlightenment 51
Overwhelming scriptural evidence for a global flood 54
Belief in a local flood unscriptural and a misunderstanding of science 54
Is there evidence for the Flood outside the Bible? 55
- Dinosaurs died early in the Flood 56
- Dinosaurs sometimes found in marine strata 57
- Catastrophic burial of dinosaurs 58
- Dinosaurs often asphyxiated and buried rapidly 60
- Dinosaurs rapidly fossilized 61

The Flood can solve all the evolutionary dinosaur challenges 61

Chapter 4 The Challenge of Dinosaur Graveyards, Tracks, Eggs, and Nests 65

The challenge of dinosaur bonebeds 65
Dinosaur tracks made during the early Flood? 65
How could dinosaurs lay eggs early in the Flood? 65
Anti-creationists certain they have a contradiction 66
Faith devastated 68
Creationist confusion 69
How should creationists approach the challenge? 69

Chapter 5 Unusual Dinosaur Graveyards 73

Numerous dinosaur graveyards—some huge 74
Graveyards scavenged 75
Bones often disassembled 77
Some dinosaur graveyards re-eroded 77
Bones little weathered 78
Dinosaur bones either in thin layers or small channels 78
Some graveyards contain only one type of dinosaur 79
Babies and young juveniles rare in bonebeds 79
Headless sauropods 80
Some dinosaurs ate wood 80
Summary 81

Chapter 6 Dinosaur Tracks Imply an Unnatural Environment 85

Dinosaur tracks impressed on firm ground 85
The type of dinosaur rarely can be identified from the track 86
Running dinosaur tracks rare 86
Tracks 20 million years older than the bones 87
Billions of tracks discovered 87
Megatracksites 88
Preservation potential: how tracks are preserved 88
Dinosaur tracks in coal 91
Multiple track layers—sometimes with similar tracks 92
Dinosaur tracks in marine strata 92
Tracks of likely poor swimmers rare 93
Tracks of babies and young juveniles rare 93
Trackways almost always straight 93
Dinosaur tracks always on single, flat bedding planes 94
Tracksites lack vegetation 95
Associated features of tracksites 95
Summary 96

Chapter 7 Were Dinosaur Eggs Laid Normally? 99

Many unknowns 99
Mistaken interpretations 99
Millions of dinosaur eggs discovered 100
Eggs found on multiple levels 101
How were eggs and embryos fossilized? 102
Eggs buried by flooding or watery sediment flows 102
Eggs found in marine strata 103
Pathological eggs 104
Embryos rare 104
Broken-topped eggs 104
Duckbill dinosaur nests with hatchlings 105
Unusual egg clutch patterns 105
Very few nest structures 106
Eggs laid on flat bedding planes 106
Little or no vegetation associated with eggs 107
Summary 108

Chapter 8 The BEDS Hypothesis 113

Briefly exposed diluvial sediments (BEDS) 114
Mechanisms for relative changes in sea level 116
- Tectonic uplift or subsidence of a particular area 116
- Tsunamis 117
- Lunar tides 118
- Slow crustal shifts far away 118
- Flood current dynamics 119
- Hundreds of sea level oscillations 120

How BEDS explains the dinosaur observations 121
- Dinosaur tracks 121
- Dinosaurs eggs on BEDS 123
- Bonebeds and BEDS 124

Multiple layers explained 126
BEDS explain all the associated features 127
Conclusion 128

IN-DEPTH SECTION

Confusion with duckbill dinosaur nests and hatchlings 129
How can 300 tracklayers in South Korea be explained? 130

Chapter 9 Solving Problems for a Global Flood 135

Summary 135
Example of how to solve other challenges 137
The Flood was global 138
The rest of the story 138

Appendix 1 The Geological Column 140

The development of the column 140
Creationist views of the column 142

Appendix 2 Did Birds Evolve from Dinosaurs? 144

Claimed feathered dinosaurs from China 145
Problems with 'feathered dinosaurs' 145
Bird evolution from a lizard-hipped dinosaur 146
Integumentary structures likely not protofeathers 146
The temporal paradox 146
Same type of dinosaur, but no feathers 147
Dinosaur lungs more like those of reptiles 147
The different development of bird and limb digits 148
'Dinosaurs' with true feathers are birds 148
Archaeopteryx was a unique bird—so no missing link 149
Claws like those of modern perching birds 150
Brain and inner ear like those of a bird 150
It could fly well 150
Why believe in the dino-bird link? 150
Summary 152

Appendix 3 Circular Reasoning in Dating Dinosaurs 156

Circular reasoning in the supposed evolution of dinosaurs 156
The case of the 'old' bird tracks 157
Circular reasoning in the timing of dinosaur extinction 158
Early Cenozoic dinosaurs from northwest New Mexico 159
The iridium anomaly and the end of the Mesozoic 160
Getting rid of 'advanced' mammals from the Mesozoic 161

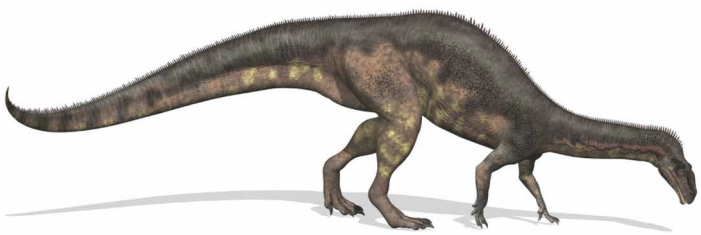
Appendix 4 Did the Flood Peak in 40 or 150 Days? 163

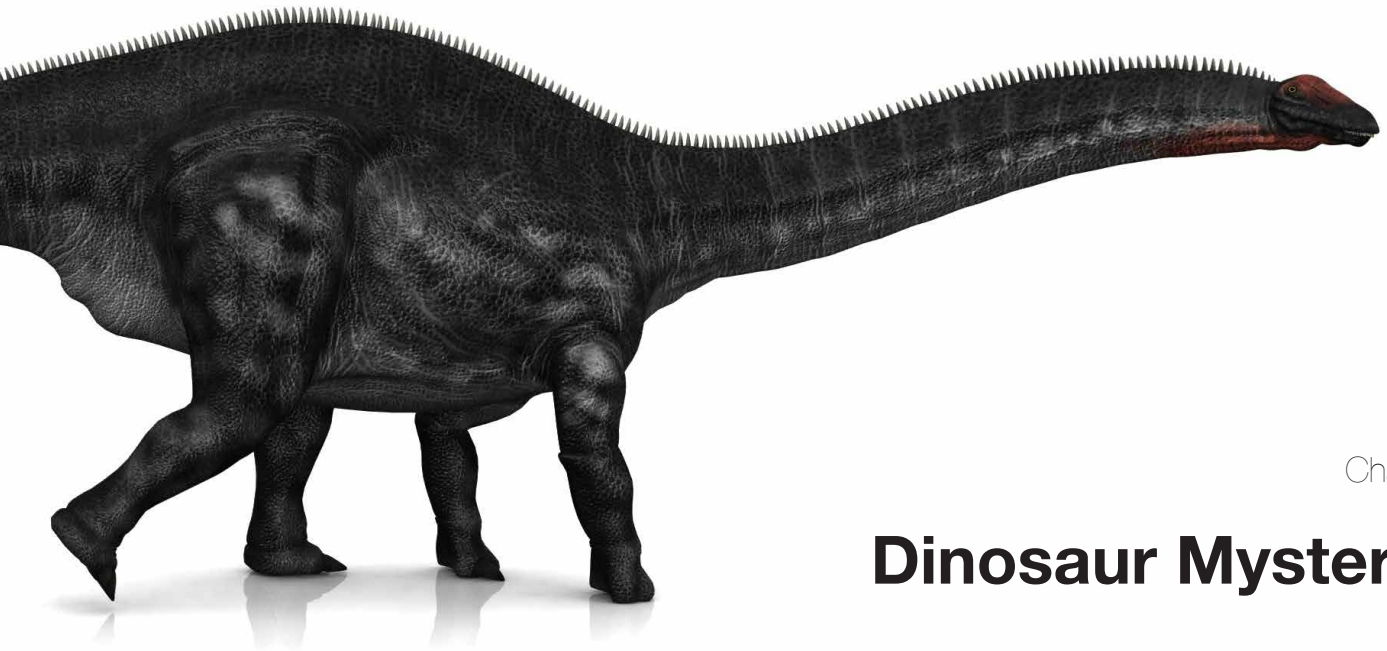
Did the Flood peak in 40 days? 163
Scriptural problems with the Flood peaking in 40 days 163
A Hebrew scholar comments 165

Glossary 167

Index 171

About the Author 175





Chapter 1

Dinosaur Mysteries

Dinosaurs have an almost magical appeal to our imagination. Boys of all ages are especially curious and addicted to the creatures, as seen by the billions of dollars spent on dinosaur toys each year. Dinosaur specials are a staple of the Discovery and Science channels, as well as feature motion pictures, like the Jurassic Park series. A similar curiosity drives scientists; millions of dollars are spent each year excavating dinosaur fossils, searching for one more elusive clue that will tell us more about these extinct beasts.

The word *dinosaur* means 'terrible lizard'. It was coined by Sir Richard Owen in 1841. A dinosaur is essentially a unique reptile with its legs positioned directly beneath its body, distinct from other lizards whose legs flare out from their bodies (figure 1.1). In fact, we are not even certain if dinosaurs were reptiles in the modern sense.

Dinosaurs have been divided into two groups based on the shape of the hipbone: (1) the lizard-hipped dinosaurs, and (2) the bird-hipped dinosaurs.[1] The ferocious upright predators, like *T. rex*, are a part of the lizard-hipped group and are called theropods. The long-necked, long-tailed sauropods were also lizard-hipped dinosaurs. Bird-hipped dinosaurs included the 'duck-billed' dinosaurs, armored dinosaurs like *Ankylosaurus*, and the tank-like beast called *Triceratops*.

Dinosaur fossil bones are found all over the earth, even near the poles—from Antarctica to northern Canada. Apparently, they thrived on every continent.

Ancient dinosaurs and dinosaur-like creatures lived on land, in the sea, and even in the air. Swimming animals that are similar to dinosaurs, such as plesiosaurs, are common.[2] These are not classified as dinosaurs but are called marine reptiles (figure 1.2). Other dinosaur-like creatures included those that flew, such as the pterodactyl. Again, these are not strictly classified as dinosaurs, but as flying reptiles (figure 1.3).

Even so, there appear to be almost a thousand dinosaur species (claimed). 'New' dinosaur types seem to pop up with great regularity. Of course, many of these species may well result from the enthusiasm of paleontologists for registering any difference as indicative of another

Figure 1.1 Illustration contrasting a lizard versus a dinosaur with legs directly beneath.

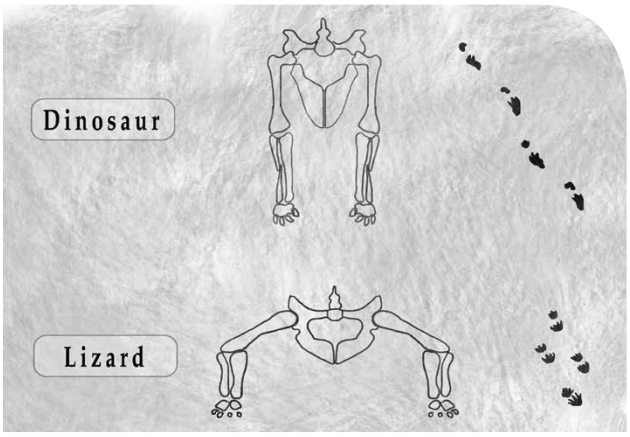


Figure 1.2 Plesiosaurs are marine reptiles.

species. At present, there are over 800 named dinosaur species, but many of these are probably not valid.[3] When we look at the true distinctions between different types, we see that there are really only about 50 main kinds of dinosaurs. Many species exhibit only very slight variations from others of that kind. This proliferation of names causes confusion in any taxonomic classification of dinosaurs:

> "On these matters—the definition of the dinosaurs and their classification—there were considerable differences of opinion among paleontologists. Even today, there has not been established an exact definition of the dinosaurs that satisfies every scientist. Moreover, there continues to be disagreements among paleontologists on how to precisely subdivide these reptiles in small groups of similar and related animals."[4]

One book on dinosaurs describes fifty-three main types of dinosaurs,[5] but even some of these, like the sauropods (figure 1.4) and duck-billed dinosaurs, are fairly similar to each other. It is interesting that the giant sauropods were denizens of the Jurassic (see figure A1.1 for the location of the Jurassic within the geological column), then they disappear in the Cretaceous, before re-appearing in the late Cretaceous.[6] At present, we are left to conclude that sauropods evolved, went extinct, and then evolved once more!

One large group of dinosaurs—the ceratopsians (figure 2.2)—perhaps corresponds to one of the Genesis 'kinds'. Although there is variation, there are also striking similarities. *Triceratops* is the best known of the ceratopsians. Other ceratopsians vary from it mainly in the number and types of horns and in the nature of their bony 'shield' or head plate. Otherwise, they are so similar that it is hard to distinguish different species

below the neck from fossil remains. It is even difficult to distinguish male from female and young from old.[7]

Two dinosaur puzzles

Despite exciting reconstructions in movies and television shows, dinosaurs are known only by their fossil remains, found in sedimentary rocks (figure 1.5). And despite 150 years of intense study, these bones present many puzzles to paleontologists:

> "Even though paleontologists have been studying dinosaurs for more than 150 years, there are still many lingering questions and nagging uncertainties about the animals."[8]

One of these puzzles is whether dinosaurs were warm-blooded, like mammals, or cold-blooded, like modern reptiles. Another is why dinosaur fossils are often found in 'dinosaur graveyards'.

Were dinosaurs warm-blooded?

Modern lizards are cold-blooded, and depend on the air temperature to regulate their metabolism. This is in contrast to warm-blooded mammals, which regulate their own temperature, keeping it constant despite the surroundings. One way they do this is by insulation, often by hair or fur. But some paleontologists believe that dinosaurs were also warm-blooded. In fact, that question was considered one of the top eighteen mysteries of science by *U.S. News and World Report*.[9]

Until the later decades of the 20th century, dinosaurs were assumed to be cold-blooded reptiles, like the crocodile. But paleontologists began to challenge that belief, starting with the influence of Robert Bakker.[10] The discovery of dinosaur remains near the poles (see chapter 2) reinforced this new idea. How could cold-blooded lizards live in high latitudes, unless they were warm-blooded?

After several decades of study, the question remains open because the evidence is not conclusive either way.[11,12] The idea they were warm blooded has been well received by the public, but many observations seem to point the other way.[13,14] One is the size of the nostrils and the breathing apparatus; very different in birds and dinosaurs. Warm-blooded mammals and birds have small noses and turbinates that control the relative humidity of the air that they inhale, while cold-blooded animals lack these features. Dinosaurs had small noses but did not possess turbinates, suggesting that they were cold-blooded.[14]

Another consideration is the difficulty that large sauropods would have in keeping their extreme mass from overheating.[15]

For a time, scientists thought that the microscopic examination of the inside of dinosaur bones, in search of abundant blood vessels, would provide the answer.[16] But these analyses have proven of little use.[17] That is because the density and character of blood vessels in both cold-blooded reptiles and warm-blooded mammals depend especially on the animal's activity level.[14] Scientists have found that the density of blood vessels depends more on the amount of exercise; both warm- and cold-blooded sedentary creatures have fewer blood vessels.[14] These studies only confirmed what was long known. Dinosaur physiology—just like their growth rates and behavior—is still a poorly-understood and controversial area.[18,19] Feduccia *et al.* asserted there

Figure 1.3 The pterodactyl is a dinosaur-like creature described as a flying reptile.

Figure 1.4 Illustration of a sauropod.

really is no evidence for warm-blooded dinosaurs: "Yet there has never been, nor is there now, any clear evidence that dinosaurs were endothermic [warm-blooded] …"[20] Many paleontologists have resolved the conflicting evidence by believing that dinosaurs had a *unique* circulatory system; not necessarily cold- or warm-blooded.[19,21] Another belief that drives many away from the evidence that suggests a cold-blooded system in dinosaurs is their supposed evolutionary link to warm-blooded birds (see Appendix 2).

Dinosaur graveyards

Many dinosaur fossils are found in large accumulations called 'dinosaur graveyards' or 'dinosaur bonebeds'. These can contain the bones of thousands of creatures. One such graveyard in northeastern Wyoming (figure 1.6) probably contains thousands of mostly duck-billed dinosaurs.[22]

A bonebed about 70 miles (110 km) northwest of Great Falls, Montana stretches 1.25 miles (2 km) east to west and a 0.25 miles (0.4 km) north to south. It is approximately 3 feet (1 m) thick and is conservatively estimated to contain 30 million fossil fragments from 10,000 duck-billed dinosaurs.[23] These dinosaurs appear to be all from the same species! How would such a concentration of one species of dinosaur be buried and fossilized in this one place?

A new graveyard found in China appears to be even larger—it is said to be the largest in the world.[24] This extraordinary grouping of dinosaur fossils is one of the unsolved mysteries of paleontology, and will be discussed in depth in chapter 5.

Two views on dinosaur fossils

Questions about dinosaurs are questions of natural history.[25] Since history requires philosophy,[26] we must understand the philosophical options, which boil down to theism or atheism. In the former, different kinds of dinosaurs were created with a limited ability for variation in their offspring. In the latter they are merely another branch of the evolutionary tree of life. Furthermore, biblical history includes the catastrophic Flood, which would have killed all of the dinosaurs not on Noah's Ark. Ironically, cataclysmic scenarios are now included in the secular catastrophic theories.

Naturalism is the philosophy that posits nature is all that exists; there is no supernatural. Naturalism, or atheism, is the foundational platform of the dominant worldview opposed to Christianity, which asserts that dinosaurs appeared, evolved, and went extinct over millions of years, by purely natural processes.

Since the early 19th century, a corollary to the philosophy of naturalism has been historical uniformity or uniformitarianism.[27] Uniformitarianism is the principle that the geological processes that we observe today are much the same as the processes that have operated across time. Recent years have seen geologists turn away from classical uniformitarianism to what is called neocatastrophism, which accepts the slow-and-gradual uniform natural history, but punctuated by catastrophic events such as a large meteorite impact. However, most geologists, even catastrophists, still believe that 'the present is the key to the past' Merged with evolution, naturalism is the basis for the story of dinosaurs most familiar to the public.

Clearly, the conflict goes deeper than science. This is evident by the conclusions drawn by advocates of naturalism, who have long asserted that their view of history discredits the Bible and Christianity. That conclusion alone is sufficient to suggest the religious motivations of many 'objective' scientists.

A related problem is the scientific study of past events. People accept this as a scientific discipline—historical science. But at the same time they recognize that science is based on repeatable observation and experimentation. Clearly, past events are past and are not open to observation and experimentation. Why this schizophrenic view? It rose during the Enlightenment, when intellectuals wanted to use science (then called 'natural history') to discredit the Bible. Their chosen target was biblical history, and since the refutation had to be 'scientific', studying the history of the earth and life upon it was proclaimed to be a scientific enterprise, in much the same way as experimental or 'operational' science. But in reality, the study of past events (which I will refer to as 'natural history', even though that name was originally applied more broadly) is much more complex.[28,29] It is an area that requires cooperative efforts from a variety of disciplines, including theology and philosophy. Christians admit that necessity; most atheists refuse to do so.