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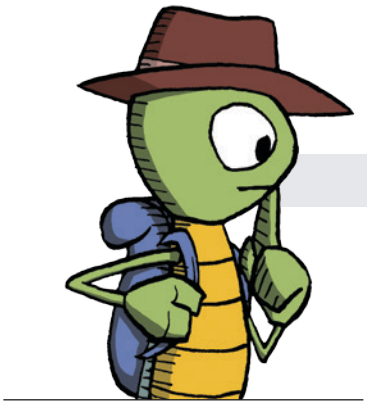


By Michael J. Oard and Gary Bates

People, both young and old, love dinosaurs. But, probably more than any other topic, the secular worldview of dinosaurs hooks people into believing in evolution and its millions of years as a scientific fact. This causes many to doubt the Bible's early chapters and results in loss of faith for many. However, the true facts about dinosaurs tell a different story—facts we can use to show the Bible is true.

This second book in the popular Mr Hibb series is a fun way for people of all ages to look through the eyes of the inquisitive character Mr Hibb—an intelligent, imaginary grasshopper. In a previous book, *Exploring Geology with Mr Hibb*, the groundwork was laid showing how the concept of millions of years came about. It was a reinterpretation of the facts of geology through the assumption of slow processes over millions of years—uniformitarianism. This caused the shift from the biblical 'young' world with a global Flood to an old world with no catastrophes forming the geological layers. Biological evolution soon resulted from this major shift in thinking.

So, the billions of fossils found in the sedimentary record were placed then viewed as evidence for millions of years of slow gradual process and the evolution of life on Earth. But with a correct biblical worldview a totally different picture emerges. In this book we focus on how to interpret dinosaur fossils biblically.

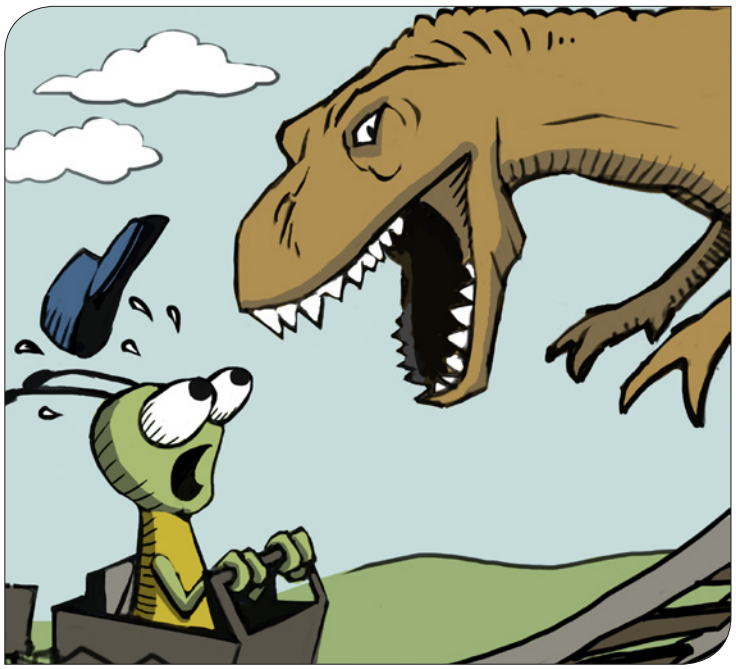
We will demonstrate that dinosaurs did not live millions of years ago and the vast majority of dinosaurs were perished and were buried in Noah's Flood. A correct understanding of the great Flood of Noah's time helps us solve many of the long-age time challenges presented by the secular world. We can them demonstrate how the various biblical 'kinds' of dinosaurs could have survived that great Flood by being occupants on Noah's Ark. There is incredible evidence to suggest that some dinosaurs may have lived to quite recently.

In addition the millions of dinosaur tracks, eggs, and scavenged bonebeds found all over the world are great evidence resulting from the chaos early in the Flood when dinosaurs tried to escape rising floodwaters.

It is important for all Christians to know what the Bible really says. And a well-grounded biblical worldview can help young and old alike see the world around us as it should be—that is, in the light of true biblical history.

Chapter 1

Those Terrible Lizards



Mr Hibb is not just any insect. He is a unique, very curious grasshopper. He doesn't mean to get into trouble or find himself in dangerous situations, it just seems to happen. He is fascinated by the world around him and thankful to his Creator, God.

Mr Hibb has a new interest: dinosaurs. It started when he went on a dinosaur roller coaster at a theme park. The mechanical *T. rex* fascinated him, and frightened him a little, too. It had such big teeth.

It seems just about everyone is fascinated by dinosaurs, but why? It could be because some of them were the largest land creatures that ever lived, and our imaginations can run wild thinking what it would be like if we could see them alive today. To this end, there have been lots of movies and television shows made that draw millions of people to dinosaurs every year. Museums even have models of these amazing creatures. Like many others, you might even have a dinosaur toy or two. But do the movies, models, and even science books truthfully show what dinosaurs were really like, and when they actually lived? While some aspects of these may be truthful, they are often accompanied by a lot of make-believe storytelling. We'll talk more about that later.

Dinosaurs were very different from creatures alive today. Although they look a little bit like some of the lizards that exist today, many dinosaurs were massive in size and had huge, fearsome-looking teeth. Mr Hibb looked up the name 'dinosaur'. *It is a Greek word which literally means 'fearsome or terrible lizard'.* We'll tell you how they came to be called terrible lizards a bit later.

HANDS-ON ACTIVITY

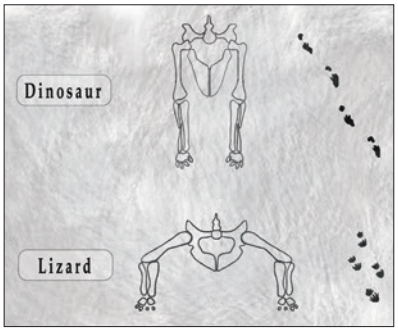
Make A Play-Doh Dinosaur

Obtain play-doh and make a dinosaur shown in this book. For skin or scale impressions, you can use a cheese grater (preferably a small one) and impress into play-doh. You can also use toothpicks to provide skin texture. For horns or spikes, you can use cashews, macaroni, bugle chips, etc. Be creative and have fun.

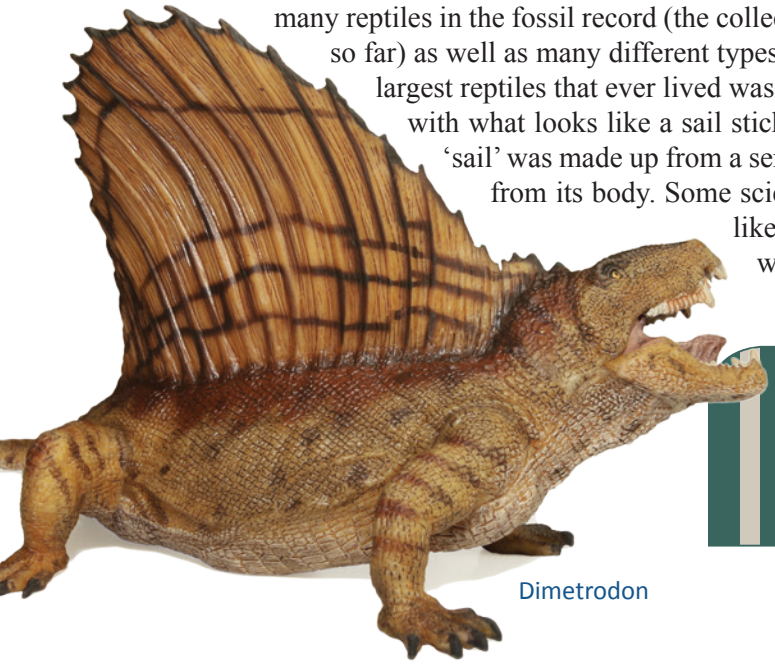
What you'll need
- play-doh
- textured objects

Looking at his lizard friend, Izzy, Mr Hibb could see they looked similar, well kind of. Because we don't see dinosaurs today, we face a lot of mysteries when studying them. For example, where did they come from and what happened to them?

What is a Dinosaur?



What exactly is a dinosaur and how is it different from reptiles living today? Classifying reptiles is sometimes difficult because they may have features that overlap into other groups such as birds and even mammals. One feature of dinosaurs is that they have legs that go beneath them to support their weight—almost like the columns we see on buildings that support a structure. Reptile limbs flare out to the sides. There are many reptiles in the fossil record (the collection of fossils so far) as well as many different types that live today. From the fossil record one of the largest reptiles that ever lived was *Dimetrodon*. It was about 10 feet (3 metres) long with what looks like a sail sticking up and running along its back. Actually, the 'sail' was made up from a series of long vertebrae or backbones that protruded from its body. Some scientists think the *Dimetrodon* was more mammal-like than reptilian because certain features of its skull were similar to those of a mammal.



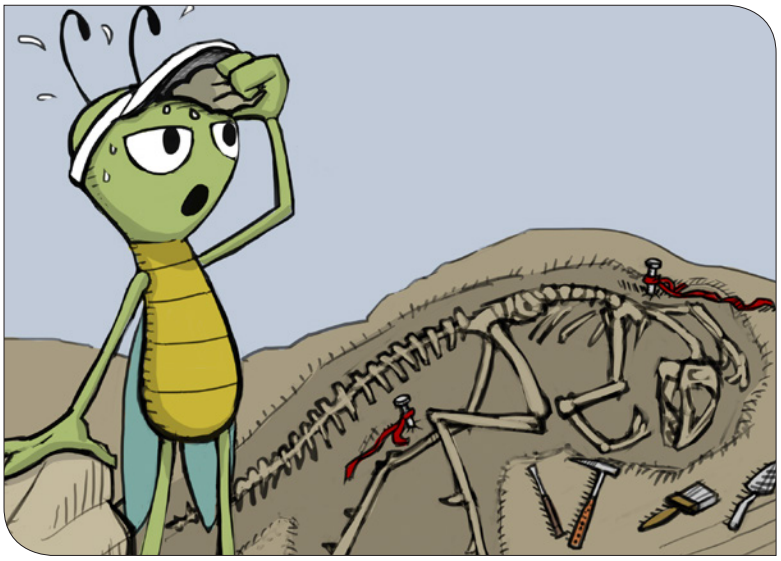
Dimetrodon

DEFINITION

Dinosaur — An extinct reptile-like creature with legs that extend straight below the body to support its weight.

How Do We Know Dinosaurs Actually Existed?

We know dinosaurs existed because we find their fossils buried in sedimentary rocks. Sedimentary rock is a type of rock formed when particles of minerals (like sand or mud) and other broken pieces of rock were laid down by water or wind and cemented together. Dissolved chemicals, such as silica (silicon dioxide) are carried by water. Silica is the same mineral found in quartz and the glass used in windows. This very special water goes through the spaces (pores) in the sediment and joins the particles together like concrete to become rock.[1]



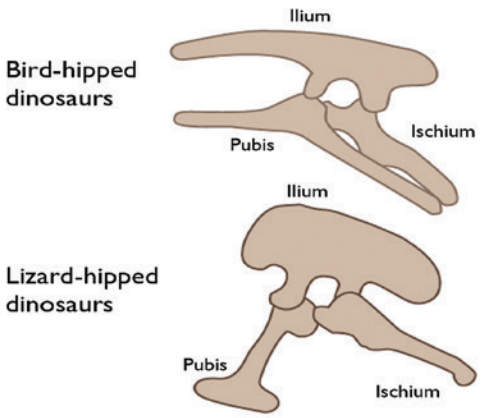
A fossil is any evidence of life preserved in a rock. It could be a creature, plant, or any object from the past. Dinosaur fossils can include bones, impressions of their skin, their eggs, or even their footprints or tracks. Many fossil bones have become rock hard because chemicals were absorbed into them from the surrounding water or mud before they rotted. (This process is called *permineralization.*) Sometimes we find dinosaur bones that have not hardened into stone.

DEFINITION

Permineralization — A process of preservation whereby the original hard parts of an animal have additional mineral material deposited in their pore spaces.

Two Types of Dinosaurs

Scientists that study fossils are called *paleontologists*. They group or split dinosaurs into two basic types, depending upon the shape of the dinosaur's hip. These types can be described as the lizard-hipped and the bird-hipped dinosaurs. The hips of bird-like dinosaurs are similar to the hips of birds because the two long bones, the ischium and pubis, that spread out from the top of the hip bend sharply toward the tail. The bird-hipped dinosaurs include those that were described as ducked-billed dinosaurs. These included



Mr Hibb's Dinosaur Facts

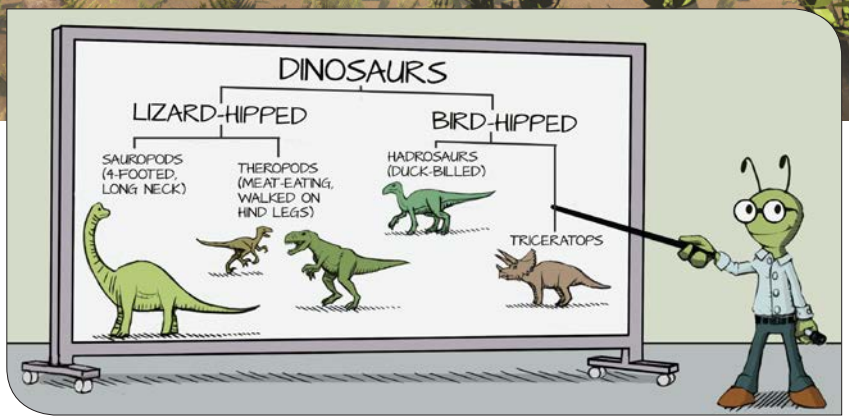
Triceratops
(try-sair-a-tops)

Meaning
Three-horned face

Length
30 feet (9 metres)

Weight
10 US tons (9 tonnes)

Distribution
North America



families of dinosaurs called hadrosaurs, and *ceratopsia*. The *ceratopsia* included the famous three-horned dinosaur called *Triceratops*.

There are two subtypes of lizard-hipped dinosaurs and it is easy to understand the difference. The first group is the large four-footed dinosaurs with long necks and long tails. These are called sauropods and include the huge beasts called *Diplodocus* and *Brachiosaurus*. This group once included the famous *Brontosaurus*. But would you believe *Brontosaurus* was rejected as a real dinosaur in the 1970s, but many paleontologists want to bring it back? We will explain why, later.

DEFINITION

Sauropod	A group of dinosaurs that had a long neck and tail, five-toed limbs, and a small head.
Theropod	A group of often large dinosaurs that walked on their hind legs, and had large jaws and short arms.

Mr Hibb's Dinosaur Facts

Brachiosaurus
(brack-ee-uh-sore-us)

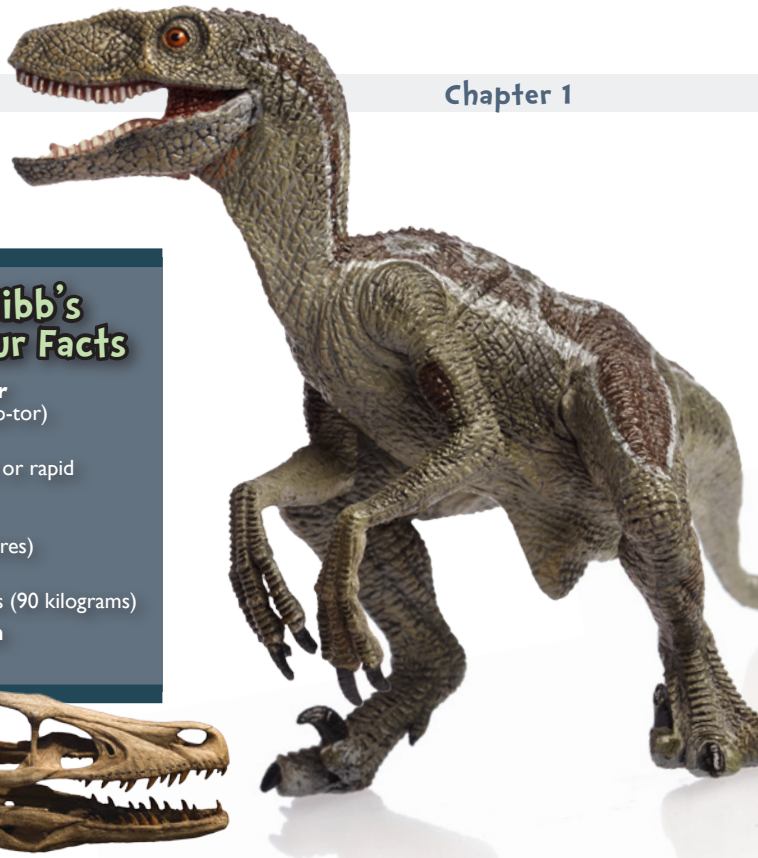
Meaning
Arm lizard

Length
100 feet (30.5 metres)

Weight
60 US tons (54 tonnes)

Distribution
Africa, North America, and Europe

The second subtype of lizard-hipped dinosaurs are called *theropods*. These are dinosaurs that walked on two hind legs and generally had short arms. They varied in size from large to small (just like the *sauropods)*. This group included probably the most famous dinosaurs of all, the ferocious looking *Tyrannosaurus rex* (*T. rex* for short) and *Velociraptor*, who was the 'nasty' star in the movie *Jurassic Park.*



Mr Hibb's Dinosaur Facts

Velociraptor
(veh-loss-ih-rap-tor)

Meaning
Quick plunder or rapid robber

Length
6 feet (1.8 metres)

Weight
200 US pounds (90 kilograms)

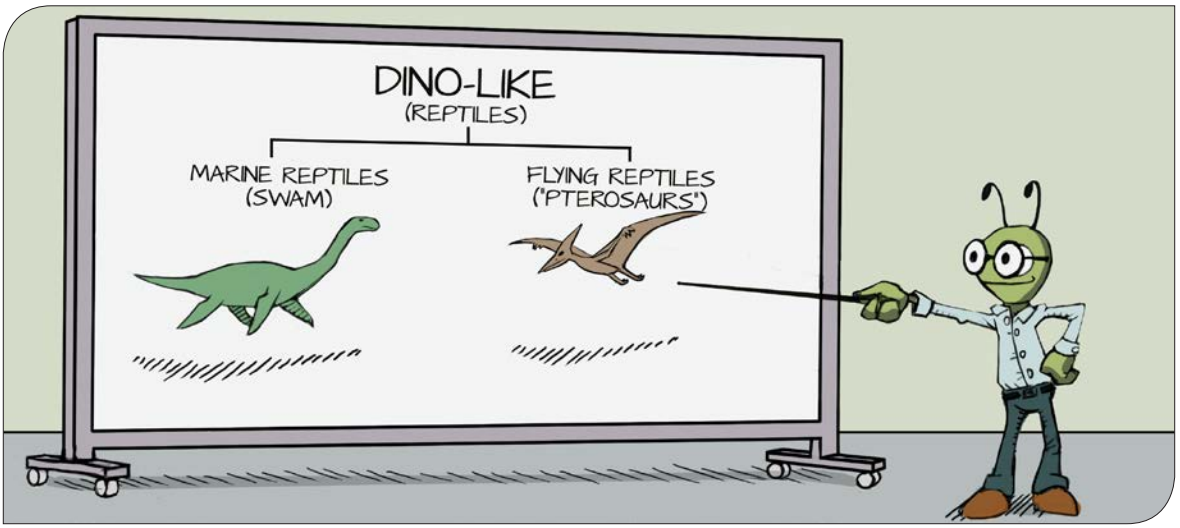
Distribution
Asia

Velociraptor skull

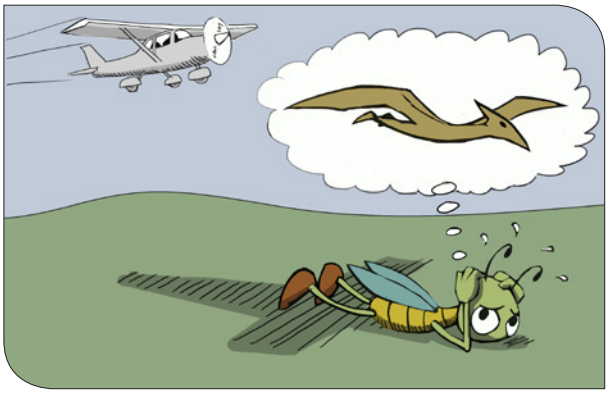
Marine and Flying Reptiles

Dinosaurs lived on land, but we also find dinosaur-like creatures that could either swim or fly.

Those that swam are called *marine reptiles* and many were large and fierce looking.[2] One of the most familiar groups of marine reptiles is the plesiosaurs. They had a long neck and huge flippers. The ichthyosaur is another familiar marine reptile that had large round eyes and looked a bit like today's porpoises or dolphins (which are classified as mammals) but much larger. Probably the fiercest looking of all the marine reptiles was mighty *Mosasaurus*,



which grew up to 50 feet (15 metres) long. With fearsome-looking teeth it was often considered the *T. rex* of the deep.



There were also flying reptiles called *pterosaurs* that once filled the skies. These had long necks and tails and a greatly extended fourth 'finger' that spread out their canvas-like wings. They kind of looked like giant bats. The most well-known flying reptile was *Pteranodon* which had a wing span up to 30 feet (9 metres) and had a long backwards pointing skull. Scientists are still puzzled over the reason for such a weird-shaped head. One huge *pterosaur* was called *Quetzalcoatlus*. It had a wing span of up to 40 feet (12 metres) and was the size of a small airplane. It was probably the largest flying creature ever. Like airplanes today it would have cast a large shadow on the ground as it flew overhead. Mr Hibb hears a small plane and because he is studying dinosaurs, instantly thinks the plane is a flying reptile.

DEFINITION

Marine Reptile	A dinosaur-like reptile that lived in water, thought to be extinct.
Flying Reptile	A dinosaur-like reptile that could fly, thought to be extinct.

Mr Hibb's Dinosaur Facts

Plesiosaur
(plee-zee-uh-sore)

Meaning
Close to lizard

Length
50 feet (15 metres)

Weight
12 US tons (10.8 tonnes)

Distribution
Worldwide

Warm or Cold-Blooded?

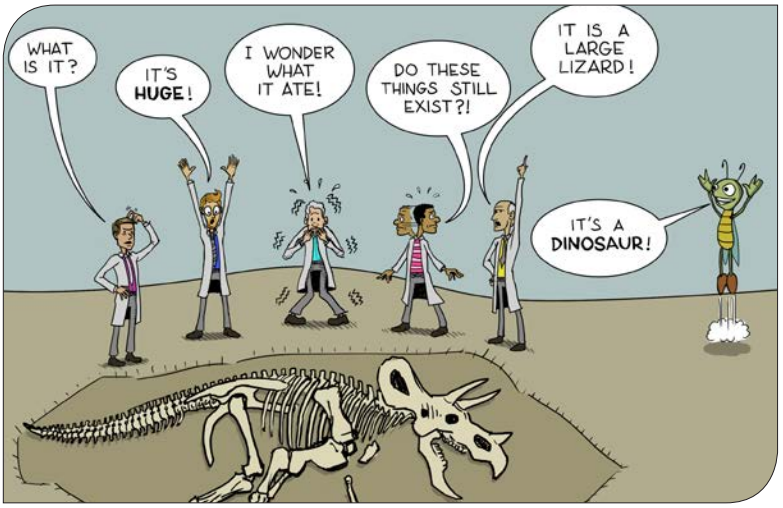
Reptiles are cold-blooded, unlike human beings who are warm-blooded. Reptiles need to be warmed by the sun or warm air. You may have seen lizards, for example, standing still in the sunlight. They survive best in warm climates, and that's why we often see lots of reptiles in deserts around the world. Some scientists believe that dinosaurs were cold-blooded, too. Others believe they were warm-blooded, and still others think they were neither. No one knows for sure.

Did They Live in Swamps?

You have probably seen lots of pictures of dinosaurs living in swamps. Some reptiles today, like alligators and crocodiles, live in swamps. Some dinosaurs probably lived in swamps, but many would be unsuited to that environment, particularly the bigger ones. They would probably get stuck in mud, for example. Many had bodies that were not suited for swimming, like *Triceratops* with its heavy spiked head and *Stegosaurus* with huge armour plates on its back.

Early Discoveries of Dinosaurs

Science is about observing and investigating. Just as in many areas of science, what we know about dinosaurs has changed over time. Dinosaur research is a relatively new area of science. Because people today have never viewed living dinosaurs, some scientists have put fossilized bones



together in the wrong order and sometimes on the wrong creatures. This led to all sorts of crazy claims about the first dinosaurs discovered.

The First Dinosaur Tooth Found

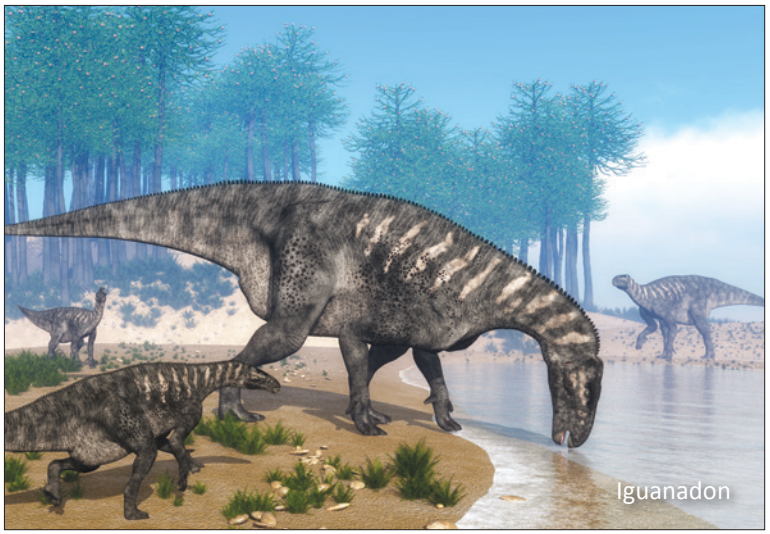
Scientists really knew very little about the dinosaurs of the past. There are many claims and different stories about who discovered the first dinosaur bones and when. People were probably finding bones and fossils for hundreds of years, but did not know what they were. Modern science seeks to understand our world. In the area of biology, it seeks to name and classify all living things on the earth—a study called *taxonomy*. Research into dinosaurs really took off in 1822 when the wife of a man named Gideon Mantell found several large fossilized teeth. Regardless of who first discovered dinosaurs, large bones were also found. The bones and teeth ended up belonging to the duck-billed dinosaur, *Iguanodon*. Mantell had difficulty convincing the scientific community of his time that he had discovered a unique creature.

DEFINITION

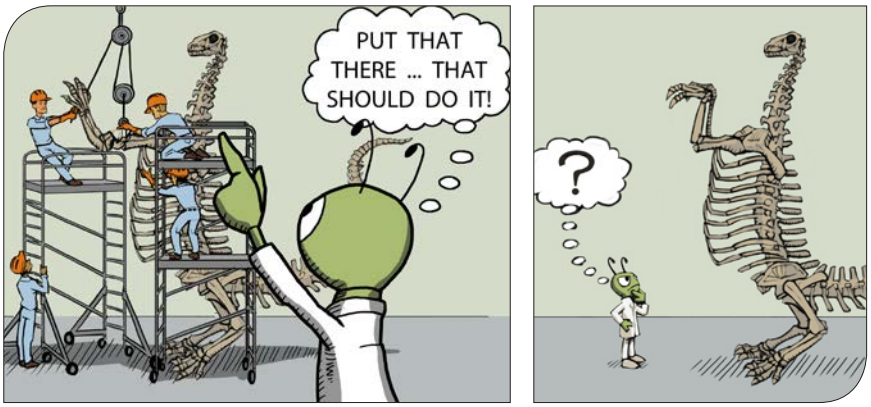
Taxonomy The science of classifying plants and animals into different categories, and describing them.

Strange Imaginary Beasts

At first, scientists did not know what kind of creatures they were looking at. All they had were fossilized bones, mainly just some parts of skeletons. It's not surprising that many of the early reconstructions, in which they tried to piece the dinosaur together, looked very different


Iguanadon

from the way dinosaurs would have actually been. Mantell's *Iguanodon* was made to look like a large iguana lizard, which is what inspired its name.



About the same time as Gideon Mantell's discovery, William Buckland pieced together some fossils and called the strange beast *Megalosaurus*. Again, these are Greek words. Mega means 'great' and saurus means 'reptile'. It was 30 feet (9 metres) long and weighed about two US tons (over 2,000 kilograms). Early reconstructions depicted it as a big lizard that walked on all four legs. Today, it is considered a meat-eating dinosaur that walked on two legs, a bit like a small *Tyrannosaurus rex*.

Sir Richard Owen Named Them in 1841

It was finally realized that these terrible lizard-like creatures once existed as a distinct group. Many more fossilized bones were unearthed and dinosaurs started

Mr Hibb's Dinosaur Facts

Megalosaurus
(meg-uh-lo-sore-us)

Meaning
Great lizard

Length
30 feet (9 metres)

Weight
2 US tons (1.8 tonnes)

Distribution
Europe

to be studied at many universities. The study of fossils is called paleontology. Scientists needed to give the bones a name or *classification*. Sir Richard Owen, a famous British scientist, named them dinosaurs (*dinosauria*) in 1841. Keep in mind that this was the very first time the name dinosaur was used. It is a modern word.

The Bone Wars

The fascination with dinosaurs really took off in the late 1800s when many new discoveries were made, especially in the United States. Two wealthy men, Othniel Marsh and Edward Cope, competed to see who could find the biggest and best dinosaurs in the states of Montana, Wyoming, and Colorado. They dug up such familiar dinosaurs as *Diplodocus*, *Apatosaurus*, *Stegosaurus*, *Triceratops*, and *Brontosaurus.* Because of the huge public interest in dinosaurs, and sadly, due

to their rivalry, Marsh and Cope also became bitter enemies. Their field workers often spied on each other's dig sites. They lied about where they were digging in an attempt to fool their rivals. Sometimes there were even fights.

This period in dinosaur discoveries is called the 'bone wars'. It is a sad reflection of what people will do to become famous, even in the area of science, and especially in the discovery and study of fossils.

What Happened to Brontosaurus?

Brontosaurus, which means 'thunder lizard', was one of the large sauropod dinosaurs discovered and named by Othniel Marsh. *Brontosaurus* went on to become one of the most famous dinosaurs of all time, but it was later thought to be a terrible mistake. Huge, nearly complete skeletons were found and mounted in museums. However, the fossilized skeleton first found by Marsh's crew was missing a head. So, they found a head at a different location and placed it on the skeleton of *Brontosaurus*. There was one problem, however. It was the wrong head! Scientists did not discover this mistake until the late 1900s, over 100 years later. Further research claimed that *Brontosaurus* was really an *Apatosaurus*. This mistake shows how a bitter rivalry and the rush to publish and become famous can cause problems with scientific claims. However, many paleontologists want to bring *Brontosaurus* back, based on a comparison of 81 skeletons that show it was different than *Apatosaurus*.[3]

Distribution All Over the Earth

Now that scientists have discovered millions of dinosaur bones, and often just fragments of bones, they are trying to unravel which animals they belonged to and how they lived. Dinosaur fossils are found on every continent, including Antarctica. They are also found in very remote places like Siberia, Greenland, northern Canada, and Alaska. Because they are found all over the earth, it poses some interesting questions when it comes to understanding these mysterious creatures.

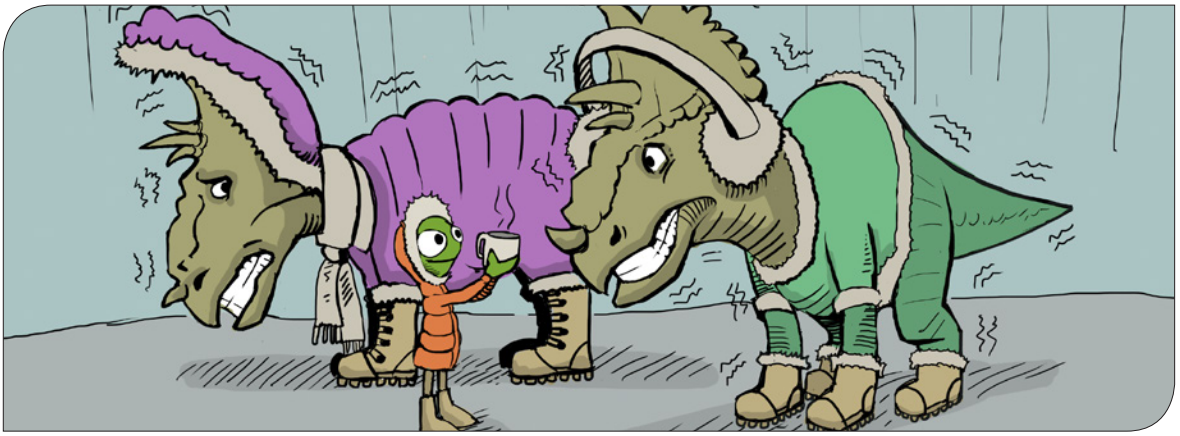
Polar Dinosaurs

Because dinosaur fossils have been found toward the north and south poles (that is, at high or polar latitudes) where the present climate is cold and snowy, scientists have changed their thinking about dinosaurs. Instead of living only in a warm climates, as previously thought, scientists now believe dinosaurs also lived in cold climates. This presents a puzzle about how dinosaurs can possibly live at high or polar latitudes, where it is dark for up to six months and cold for about nine months. Dinosaur expert Michael Benton expresses his frustration:

> "Should we now imagine dinosaurs as thermally insulated warm-blooded animals that ploughed through snowdrifts and scraped the ice off the ground to find food?"[4]

Two other evolutionary scientists are also mystified:

> "The picture of dinosaurs that were active in a country with permafrost, and that consequently experienced winter temperatures which only a few mammals tolerate today, is



a very different one than the popular perception of all dinosaurs as denizens [occupiers] of steaming, tropical swamps."[5]

Finding food in such frozen wastelands would be a problem for dinosaurs in polar areas, because they needed plenty of fuel to heat their large bodies. Soon we will explain how this puzzle is easily solved.

Desert Dinosaurs

Some scientists think that dinosaurs lived not only in very cold climates but also in hot deserts. This is because their fossils have been found in sandstone which is believed to have been deposited in a desert. For instance, millions of dinosaur tracks have been found in large sandstone formations in Utah in the United States. Some of these sandstones are thought to have been an ancient Sahara-type desert, but much bigger. The idea of dinosaurs living in such a desert brings up more questions than answers for scientists. Just as in polar regions, what would dinosaurs eat and drink in a desert? Maybe their ideas about the sandstone forming in an ancient desert is incorrect.

Although these beliefs about polar and desert dinosaurs create huge puzzles to secular scientists, the evidence can be easily explained when we begin with the Genesis Flood. (See chapter 5.)

Variation in Size

Dinosaurs were not always huge like the sauropods or *T. rex*. Some were as small as a chicken, like *Compsognathus*. From the fossils that have been found, many think that the average size of dinosaurs

might be about the size of a deer or an elk. Some dinosaur-like creatures swam and lived in the oceans, and some ruled the air—and they lived all over the earth. They certainly are fascinating. So, let's move on and find out what happened to these marvelous creatures.

★★★

1. Oard, M.J., Wolfe, T., and Turbuck, C., *Exploring Geology with Mr Hibb: Discovering Evidence for Creation and the Biblical Flood*, Creation Book Publishers, Powder Springs, GA, US, 2012.
2. Wieland, C., *Dragons of the Deep: Ocean Monsters Past and Present,* Master Books, Green Forest, AR, US, 2005.
3. Balter, M., Bully for Brontosaurus! *Science* **348**:168, 2015.
4. Benton, M.J., Polar dinosaurs and ancient climates, *Trends in Ecology and Evolution* **6**(1):28, 1991.
5. Rich, T.H. and Vickers-Rich, P., *Dinosaurs of Darkness*, Indiana University Press, Bloomington, IN, US, p. 165, 2000.

Chapter 2

Two Ways of Looking at Dinosaurs

Dinosaurs are amazing creatures that lived and died in the past. Because they are not alive today it is difficult to study them. We cannot use a time machine to go back and observe how dinosaurs lived. It is very important to remember that everyone, including scientists, can only make observations in thir own lifetime, that is, in the present. So, today we can only study the remains of dinosaurs by looking at their fossils and the rocks around them.

Real Science vs. Interpretation

It is important to learn the difference between what science can *actually* tell us about the things we observe, as opposed to the way people interpret or draw conclusions from those observations. When you hear the word 'science', what do you think of? Most people think of doing experiments to test things, perhaps in a laboratory. Mr Hibb especially likes chemical experiments in the lab. Or, perhaps, you think of the inventions like the amazing rockets that can take us to the moon. This type of science can be described as 'operational science' because it deals with the way things operate. That's what we can actually *observe* in the *present.* We can also do experiments to *test* what happens and *repeat* the experiments. For example, if you wanted to see how gravity works you could drop a ball to the ground several times and you could measure the results every time.

DEFINITION

Science	It comes from Latin word *scientia*, which means knowledge. To conduct science means to organize information based upon testable explanations.
Operational Science	The science that deals with the way things work in the present.

Mr Hibb's Dinosaur Facts

Tyrannosaurus
(tye-ran-uh-sore-us)

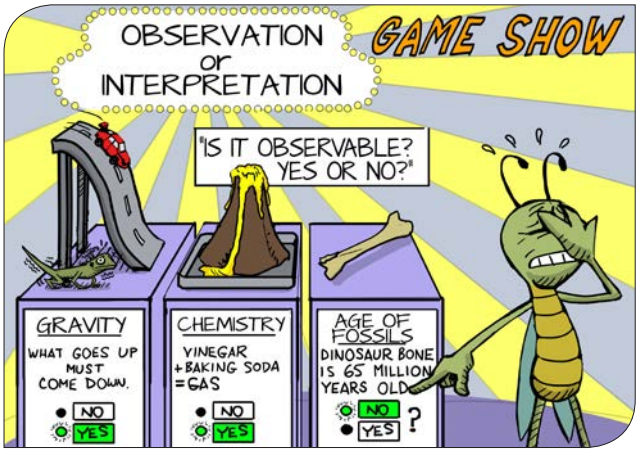
Meaning
Tyrant lizard

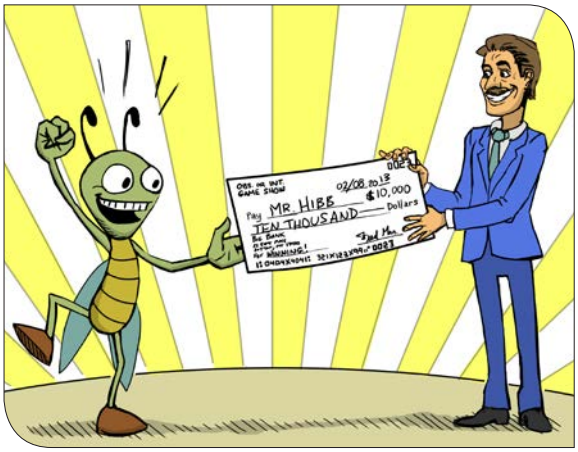
Length
50 feet (15 metres)

Weight
8 US tons (7.2 tonnes)

Distribution
North America and Asia

An interpretation arises when we look at facts we can see today (in the present) and make guesses about what happened to them in the past. For example, finding a dinosaur bone in some rock strata today would be a fact. But if you hear a scientist say that it lived 65 million years ago, or that it had a really loud growl, these would be guesses or interpretations of the 'fact', as Mr Hibb has discovered. We cannot do tests on the fossil to prove when it lived and died. The interpretation you hear depends on what people believe happened in history, and people



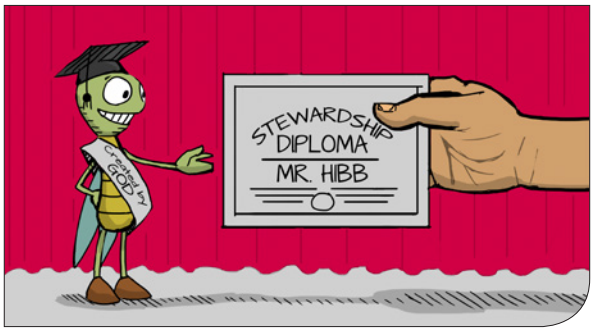


HANDS-ON ACTIVITY

Science Versus Interpretation

Science depends upon observations, but we must rely on assumptions when we try to reconstruct the past. Of the following statements, which ones are science that you observe, and which ones are interpretations?

A) The dinosaur bone was unearthed south of the city.
B) The dinosaur bone is 70 million years old.
C) Two dinosaur fossils found side by side were fighting.
D) The dinosaur skeleton was 80% complete and represents a ceratopsian.
E) Dinosaurs found in lower layers are less evolved.
F) Triceratops has three horns on his large bony head frill.
G) Dinosaurs evolved to birds.
H) There is unfossilized dinosaur material.



have different beliefs about this. It is worth remembering that rocks and fossils don't come with labels attached to tell us how old they are.

Because everyone has a belief about the past and how all life came to be on the earth, they will use their beliefs to draw conclusions about the fact. The interpretation is then claimed to be 'evidence' for their view.

Interpretations about events that occurred in the past—even what happened to the dinosaurs—depend upon the things we believe. This is also known as a worldview, and it acts like a filter or like a set of coloured glasses that causes each person to see the same facts differently.

Worldviews are ultra-important, because what you believe about where you came from will affect the way you act in the present. For example, evolutionists believe that humans evolved from apes and that we are nothing more than evolved animals. When people believe this they may begin to wonder why they should treat other humans any better than animals. They might even act like animals. Compare this with the idea that humans were made in the image of God like the Bible says. This means that all people are valuable because we are important to our Creator God. It