

14th November

Memory Verse:

Nevertheless we,
according to his promise,
look for new heavens and a new earth,
wherein dwelleth righteousness.

2 Peter 3:13

Something to read from history



Charles Lyell (1797-1875), a Scottish geologist whose book *Principles of Geology* was widely influential, was born on 14th November. His book's subtitle was *Being an Attempt to Explain the Former Changes of the Earth's Surface by Reference to Causes Now in Operation*. This means, “an attempt to explain what happened to the surface of the earth in the past by reference to the things we see happening now.” Charles Darwin¹ took the book with him on his voyage on the *Beagle*, and what he read on that voyage was very useful to him in putting together his theory of evolution. For Charles Lyell thought that in geology, “the present is the key to the past.” That is, the geological layers which we observe today were brought into being by geological

events like those we see happening now – *Causes Now in Operation*. Since we do not see worldwide violent or cataclysmic events today, he argued, these also did not happen in the past. Instead, everything we see was formed by slow gradual processes. This should ring an alarm bell with you at once. I'm sure you know that the earth was created in six days in the beginning by God. Its geology was further shaped by the violence of the cataclysmic flood which happened in Noah's day.

Lyell's idea was very useful to Charles Darwin. Lyell was saying that the earth took millions of years to form since everything happened at this slow rate. Darwin's idea was that life itself evolved from simple creatures to complex. This, he thought, would need a great deal of time, far more than the few thousand years marked out in the genealogical tables in the Book of Genesis in the Bible.

In Lyell's day this “slow and gradual” theory was a new idea. Most geologists believed that the geological features we see today were the result of catastrophes. Some, though by no means all, even considered, correctly as it turns out, that the worldwide flood of Noah's day was responsible. These men were known as “Scriptural Geologists.” Lyell called them “physico-theologians” and was sarcastic about them in his letters.

Like many of the geologists of his day, Lyell was a deist. We learned about deists and their beliefs in March.² We also covered the problems that their idea raises. Lyell thought that some, “Creative intelligence” was responsible for making the world but it was not the personal God of the Bible. Instead, he believed in a deity (god) that had set the world in motion and then stood back, as it were, taking no further part in the proceedings.

Lyell was clear in his mind that the Bible was an obstruction to his ideas of how the earth was formed. People would have to be led to abandon their belief in the Bible, at least as far as geology was concerned. But in nineteenth century Britain this would be a difficult idea to put forward. How should it be done without causing an outcry? In 1830 the first volume of his *Principles of Geology*

1 See the lesson for 19th April.

2 See the lessons for 3rd and 23rd March.

was to be reviewed in the influential and religiously conservative periodical *The Quarterly Review*. Lyell knew the reviewer and he wrote to him with hints and tips on how to get the readers to accept criticism of the Bible without too much trouble, explaining how he had deliberately gone slowly to avoid giving offence. The time was right, he thought, if done carefully to get rid of “Moses” – that is the Genesis account of creation and the flood – in geology. The best plan, he says, would be to lay out what he regarded as the facts and let the readers draw their own conclusions:

I am sure you may get into [The] Q.[uarterly] R.[eview] what will free the science [i.e. geology³] from Moses, for if treated seriously, the [religious] party are quite prepared for it....

I was afraid to point [out] the moral, as much as you can do in Q. R., about Moses.... If we don't irritate, which I fear that we may (though [it is about] mere history), we shall carry all with us. If you don't triumph over them, but compliment the **liberality** and **candour** of the present age, the bishops and **enlightened** saints will join us in despising both the ancient and modern physico-theologians [i.e. those trying to accommodate geology to the teaching of the Bible]. It is just the time to strike, so rejoice that, sinner as you are, the Q. R. is open to you.

If I have said more than some will like, yet I give you my word that full half of my history and comments was cut out, and even many facts; because... I... felt that it was anticipating twenty or thirty years of the march of honest feeling to declare it **undisguisedly**.... Point out to the general reader that my floods, earthquakes, &c., are all very modern, also **waste** of cliffs; and that I request that people will multiply, by whatever time they think man has been on the earth, the sum of this modern observed change, and not form an opinion from what history has recorded...

PS. ...I conceived the idea five or six years ago, that if ever the **Mosaic** geology could be set down [i.e. discarded] without giving offence, it would be in an historical sketch, and you must abstract [i.e. summarise] mine, in order to have as little to say as possible yourself. Let them feel it, and point the moral.

This is quite difficult to understand so I have put in some words to help you in square brackets. I have also highlighted some words that you may have to look up in your dictionary. It is good for the mind to try to understand hard writing! In today's optional resources files you will find a version of the extract from this letter which I have simplified. When you have tackled the extract above, read the simple version and see if you have got the gist of it right.

Readers of *The Quarterly Review* presumably expected the reviewers to be impartial and balanced. At very least they must have thought they were hearing the reviewer's own opinions and ideas. But here is Lyell, the author, instructing the reviewer how to review his book! I think this is cheating. But then *The Quarterly Review* did not have a very good track record in such matters. It even allowed Sir Walter Scott to review one of *his own* (anonymous) novels, although he gave it a bad review so as not to give the game away! This is like asking a mechanic to report on a car you are thinking of buying from a garage but, although you are not aware of it, the seller and the mechanic are the same person!

Lyell's idea still has some influence on evolutionary thinking today although almost every new fossil discovery seems to stretch the number of years required still further. (This makes it hard for the geologists and palaeontologists to make their times scales consistent.) However, some of his equally unlikely ideas were not taken up enthusiastically even in his own day. Lyell thought, for instance, that history was cyclical. That is, it repeats itself over and over again. He thought that one day dinosaurs would populate the earth again. The cartoon on the next page mocks this idea with a

3 Notice that it is “the” science. Some people quote this remark as if Lyell was talking about all science. “The” science he was discussing was geology.

AWFUL CHANGES.
MAN FOUND ONLY IN A FOSSIL STATE—REAPPEARANCE OF ICHTHYOSAURA.



A Lecture.—"You will at once perceive," continued PROFESSOR ICHTHYOSAURUS, "that the skull before us belonged to some of the lower order of animals; the teeth are very insignificant, the power of the jaws trifling, and altogether it seems wonderful how the creature could have procured food."

drawing of "Professor Ichthyosaurus" describing a human fossil to his class. You can see the professor pointing with his stick to the skull below his lectern.

This cartoon was, in its turn, supposed to have influenced one of John Tenniel's original drawings for Lewis Carroll's *Alice in Wonderland* published some thirty-five years later. Here another extinct creature, the Dodo, is involved. Compare the two illustrations closely. What do you think? Alice herself is the "human curiosity" here, not a fossil!



Something to make

Thomas Bruce, 7th Earl of Elgin (1766-1841) died on **November 14th**. It is thanks to him that the marble sculptures that once adorned the Parthenon in Athens are now one of the greatest treasures of the British Museum.

The Earl, got permission to remove the sculptures that once formed part of the Parthenon building in Athens. He then sold the sculptures to the British Museum where they are still on display.



As the director of the British Museum explained,⁴ before Lord Elgin removed the sculptures they were badly damaged. When the Parthenon became a church building in the 6th to 7th century many of the statues of pagan gods and goddesses were removed or defaced. Over time many had fallen, and some had been stolen so that about one third of the original frieze was missing. What remains are just fragments of a broken work of art. If you look at the picture above, which shows one of the better preserved parts, you can see how badly damaged it is. At one time the Parthenon itself was being used as a store for gun powder and an explosion occurred. This also did the sculptures no good. Later the Venetians tried to remove some of the sculptures but dropped them and they were shattered. Souvenir hunters also took away much of the statuary.

The Parthenon dates from 447–432 BC and the sculptures took the form of a frieze, high up around the building. Look at the picture of the Parthenon on the left. Can you see the space, a band near the top, where the sculptures came from?



In their original position it was very hard to see the sculptures, and no details was visible. Once they were put on display in the British Museum, people began to realise just how remarkable they were.

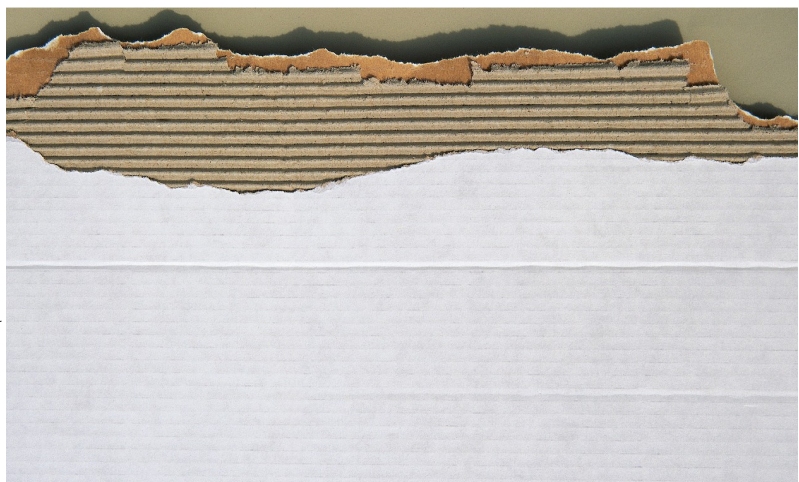


Phidias or Pheidias(c. 480 – 430 BC), a Greek sculptor, painter, and architect is believed to have made the frieze. His workshop at Olympus was discovered in the 1950s, enabling archaeologists to know something of his working methods.

The Elgan marbles are mostly relief sculptures. In a relief sculpture the image projects from the background but is not detached from it completely. You can make your own relief sculpture using corrugated cardboard – the type that is used in cardboard boxes and packaging.⁵

First cut a background piece of cardboard say about A4 in size. Then decide on your picture. It should be of simple elements, at least for your first attempt. Divide your elements up into background, middle ground and foreground. You might like mountains in the back ground, a river in the middle ground and a tree in the foreground. Or you could have a beach relief. Then you could have a sand background with various shell shapes, and seaweed on it. Would you prefer a house in the foreground? Then you could have hills in the background and a road in the middle ground. Use your imagination.

Draw your sculpture layers on a piece of paper in big bold lines. Then you can cut the paper up to provide templates for the cardboard layers. Or your cardboard itself might inspire you. Look at the torn cardboard opposite. Could you turn the existing shapes into mountains or waves? That might make an interesting background for your own foreground items to be added. Use glue to fix the raised cardboard shapes on the background. Small pieces of cardboard can be used to create more depth by gluing them on the back of the shapes before gluing the shapes to the background. You can colour your relief sculpture with paint or with broad felt tipped pens or oil pastels.



⁵ A good “how to” tutorial here https://www.youtube.com/watch?v=g_kPIK8-5KI listen with the sound off. There is no verbal instruction and the “music” is distracting!