

# The origin of old-earth geology and its ramifications for life in the 21<sup>st</sup> century

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The Genesis-geology debate, which began in the early 19<sup>th</sup> century, is a conflict of worldviews. A person's worldview not only affects the interpretation of the facts but even the observation of the facts. This is evident from the lack of scientific refutation of the views of the scriptural geologists of the 19<sup>th</sup> century, who were ignored or misrepresented. Darwin's theory of evolution was predicated on the long ages of geology which became mainstream thought during this period. However, just as the theory of evolution is losing ground, history is confirming that the scriptural geologists were right. Modern creationist research is providing solid answers to the difficult geological questions and neo-catastrophism is becoming more widely accepted in secular geological thinking. The predictions of the scriptural geologists, who warned of the negative effect that the rejection of the veracity of biblical history would have on society, are coming true. What we believe about the past, especially the origin and history of the physical creation, affects significantly our purpose in life, our values, our moral behaviour and our relationships to other people. Naturalism fails as a worldview, not only because of the strong scientific evidence against evolution and millions of years, but also because naturalism provides no philosophical basis for a moral and just society or for purpose in life.

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Almost everyone living today takes for granted that the universe and earth are billions of years old. But that has not always been true and the number of people rejecting that idea today is increasing rapidly. The idea of a very old earth developed in the early 19<sup>th</sup> century, through geology and it was opposed by a group of Christian scientists and non-scientists, primarily in Britain, who collectively became known as the 'scriptural geologists.' This so-called Genesis-geology debate is fully discussed in my doctoral thesis, some chapters of which are available on the web,<sup>1</sup> and in a 16-page paper summarizing my thesis.<sup>2</sup>

This early 19<sup>th</sup> century debate is an interesting and important one for students of the history of science,

especially the history of the relationship of science to Christianity. But it is also very relevant for understanding the current growing debate about evolution and creation and the social, moral and spiritual implications thereof.

## New theories about the history of creation

Prior to the 19<sup>th</sup> century the dominant view in the Christian world of Eastern and Western Europe and North America was that God created the world in six, 24-hour days about 4000 BC and that about 1,600 years later the earth had been judged with a global catastrophic Flood at the time of Noah.<sup>3</sup> In the late 18<sup>th</sup> century different histories of the earth began to be developed and popularized which were evolutionary and naturalistic in character. By this I mean that these theories sought to explain the origin and history of physical reality by appealing only to time, chance and the laws of nature working on matter. God was denied or at least left out of the picture in constructing a history of the earth.

Three French scientists were prominent in this development. In *Epochs of Nature* (1778), Comte de Buffon (1708–1788), postulated that the earth was the result of a collision between a comet and the sun and had gradually cooled from a molten lava state over at least 78,000 years. Pierre Laplace (1749–1827) published his nebular hypothesis in *Exposition of the System of the Universe* (1796). He imagined that the solar system had naturally and gradually condensed from a gas cloud during an indefinite but very long period of time. Jean Lamarck (1744–1829), in his *Zoological Philosophy* (1809), proposed a theory of biological evolution over long ages by means of the inheritance of acquired characteristics.

New theories in geology were also being advocated at the turn of the 19<sup>th</sup> century as geology began to develop into a disciplined field of scientific study. Abraham Werner (1749–1817) was a German mineralogist. Although he published very little, his impact on geology was enormous because many of the 19<sup>th</sup> century's greatest geologists had been his students. He theorized that the strata of the earth had been precipitated chemically and mechanically from a slowly receding universal ocean. In his mind the earth was at least one million years old. His oceanic theory was quickly rejected, but the idea of an old earth remained with his students.

The Scotsman, James Hutton (1726–1797), was trained in medicine but turned to farming for many years before eventually becoming interested in geology. In his *Theory of the Earth* (1795), he proposed that the continents were gradually and continually being eroded into the ocean basins. These sediments were then gradually hardened and catastrophically<sup>4</sup> raised by the internal heat of the earth to form new continents, which would be gradually eroded into the ocean again. With this slow cyclical process in mind, Hutton said that he could see no evidence of a beginning to the earth, which brought the charge of atheism by some.

Neither Werner nor Hutton paid attention to the fossils in rocks. But another key person in the development of old-earth geological theories, who did, was the Englishman, William Smith (1769–1839). He was a drainage engineer and surveyor and helped build canals all over England and Wales, which gave him much exposure to the strata and fossils. He is called the ‘Father of English Stratigraphy,’ because he produced the first geological maps of England and Wales and he developed the method of using fossils to assign relative dates to the strata.<sup>5</sup> An advocate of a catastrophist theory similar to Cuvier’s, he too imagined that the earth was much older than the Bible taught.<sup>6</sup>

The Frenchman, Georges Cuvier (1768–1832), was a comparative anatomist who popularized the catastrophist *Theory of the Earth* (1812, first English edition in 1813). By studying fossils found primarily in the Paris Basin he believed that over the course of untold ages there had been at least four regional or nearly global catastrophic floods,<sup>5</sup> the last of which was probably about 5,000 years ago. After each catastrophe, Cuvier apparently believed, God supernaturally created new forms of life.

Finally, Charles Lyell (1797–1875), a trained lawyer who became a geologist, began publishing his three-volume *Principles of Geology* in 1830. Building on Hutton’s uniformitarian ideas, Lyell insisted that the geological features of the earth can, and indeed must, be explained by slow gradual processes of erosion, sedimentation, earthquakes and volcanism operating at essentially the same rate and power as we observe today. He rejected any notion of regional or global catastrophism; earthquakes, volcanoes and floods in the past were no more frequent or powerful on average compared to those in the present. By the 1840s his view became the ruling paradigm in geology.

So, in the early 19<sup>th</sup> century there were three views of earth history. Catastrophists believed that the creation was ‘untold ages’ old and that from time to time over those ages before man there had been a number of major catastrophic floods that destroyed a large percentage of living creatures, which God then replaced with new, supernaturally created species. Uniformitarians believed that all present-day processes of geological change operated at the same rate and intensity and power throughout history and tended to ignore the question of the origin of life forms. The scriptural geologists and their followers believed in the biblical account of a literal six-day creation of all things a

few thousand years ago followed a little later by a unique global Flood which produced most of the geological record. Christians who opposed the scriptural geologists were either uniformitarians or catastrophists and developed various reinterpretations of Genesis to try to harmonize it with the idea of millions of years.

### The scriptural geologists

The scriptural geologists were a very diverse group of individuals. I discovered over 30 such authors writing between about 1815–1855. Although some of them knew of each other and appreciated each other’s writings, they never formally organized themselves into a group. Most of them were from Great Britain, although I found a few in America also and maybe there were some in continental Europe.

Some of the scriptural geologists were clergymen and some were not. Some were highly trained scientists, and others had no such training. A few were very competent in geology, both as a result of extensive reading and field study of geological formations and fossils in Britain and on the European continent. Their writings, which raised biblical, philosophical and geological objections against old-earth theories, ranged from short pamphlets to massive well-documented books. In my Ph.D. thesis I wrote individual chapters on each of thirteen scriptural geologists, giving a biographical sketch and a detailed summary of their arguments against the old-earth theories.<sup>7</sup>

Four of the most geologically competent scriptural geologists were George Young, George Fairholme, John Murray and William Rhind.<sup>8</sup> Their writings demonstrated extensive reading in the scientific (especially geological) literature of their day as well as considerable investigations of geological formations. They were men of strong Christian faith and respected character. Coincidentally these four were all Scottish.

After his training in science and theology, Young<sup>9</sup> (1777–1848) faithfully served for 42 years as pastor of a Presbyterian church in Whitby, Yorkshire (England), where a great percentage of the so-called ‘geological column’ was exposed in the mines and on the sea coast. He helped found the Whitby museum and was the coastal representative of the Yorkshire Philosophical Society (which focused on natural science), collecting rock and fossil samples. Three of his 21 books and six scientific journal articles dealt with geology.<sup>10</sup> He gave the most thorough analysis of the



**Figure 1.** George Young (1777–1848) raised biblical, philosophical and geological objections against emerging old-earth theories.

geological record done by any scriptural geologist.

Fairholme<sup>11</sup> (1789–1846) was a self-educated wealthy landowner who traveled extensively in Britain and Europe studying geology, geography, fossils and living creatures. His two books on geology<sup>12</sup> and several science journal articles, based on reading, experimentation and field investigations, showed him to be a careful observer and thoughtful interpreter of nature. His study of the valley systems of England and Europe along with the erosion of sea coasts and some major waterfalls in Germany and America led to his conclusion that Noah’s flood had occurred about 5,000 years ago.

Murray<sup>13</sup> (1786?–1851), who attained M.A. and Ph.D. degrees in science, became well known and highly regarded throughout Great Britain as a travelling lecturer on physics and chemistry. He developed an impressive breadth of knowledge in many subject areas of both science and literature, but he contributed much to chemistry and mining. He had nearly 20 scientific inventions (including a miner’s safety lamp), which came into practical use. His 28 books and 60 science journal articles addressed subjects in chemistry, physics, medicine, geology, natural history, and manufacturing. He also wrote a passionate pamphlet calling for the end of slavery in the colonies. He wrote two books which directly related to geology and the Bible.<sup>14</sup>

Finally, Rhind<sup>15</sup> (1797–1874) was trained to be a surgeon and practiced medicine for several years before devoting the rest of his life (most of it spent in Edinburgh) to scientific research, lecturing and writing, primarily in the areas of botany, zoology and geology. He published 6 scientific journal articles in the areas of biology, medicine and geology. Many of his books reflected his strong

commitment to see good science textbooks available for the education of children, aged 10–18 years. His *magnum opus* discussing living and fossil plants was his 700–page *History of the Vegetable Kingdom* (1841), which went through eight editions up to 1877. Three of his adult-level books dealt with geology. Two were purely descriptive and praised by geologists for their accuracy. *The Age of the Earth* (1838) presented his biblical and geological reasons for rejecting the old-earth theories.

### The true nature of the 19<sup>th</sup> century debate

In spite of significant and well informed biblical, geological and philosophical objections against the theories of both the catastrophists and the uniformitarians, the writings of the most geologically competent scriptural geologists were ignored or misrepresented, but never refuted. Why? I believe the reason is that they were in a conflict of philosophical (i.e. religious) worldviews.

The scriptural geologists were not opposed to geological facts, but to the old-earth interpretations of those facts. And they argued that old-earth interpretations were based on anti-biblical philosophical assumptions, and in this they were correct. Buffon was a deist or secret atheist,<sup>16</sup> as were Lamarck<sup>17</sup> and Hutton.<sup>18</sup> Laplace was an open atheist.<sup>19</sup> Werner,<sup>20</sup> Cuvier,<sup>21</sup> Smith<sup>22</sup> and Lyell<sup>23</sup> were probably deists or some sort of vague theists. These developers of old-earth theory were hardly objective, unbiased, let-the-facts-speak-for-themselves observers of the physical evidence, as is so often supposed. They were in fact just as biased as the scriptural geologists. While these old-earth proponents had varied opinions about the existence

of God, they all rejected the God who is revealed in Scripture and operated with the assumptions of philosophical naturalism in their interpretation of the astronomical and geological evidence. A leading historian of geology has noted,

‘Most significantly, recent work in cultural anthropology and the sociology of knowledge has shown that the conceptual framework that brings the natural world into a comprehensible form becomes especially evident when a scientist constructs a classification [of rock strata]. Previous experience, early training, institutional loyalties, personal temperament, and theoretical outlook are all brought to bear in defining particular boundaries as “natural”.’<sup>24</sup>

It would be misleading to think that all these factors influenced all scientists to the same degree. However, a major component of anyone’s theoretical outlook is his religious worldview (which could be atheism or agnosticism, as well as a traditional



**Figure 2.** This enormous tree trunk, cutting across many strata, was recovered in 1826 from Craighleith Quarry, near Edinburgh, Scotland. Scriptural geologists Young, Fairholme and Rhind realized the tree did not grow in situ. Rather, floodwaters must have washed it into place and deposited all the exposed strata rapidly.

religion). Worldview had a far more significant influence on the origin of old-earth geology than has often been perceived or acknowledged. A person's worldview not only affects the interpretation of the facts but even the observation of the facts. Another prominent historian of science rightly comments about scientists and non-scientists: 'men often perceive what they expect, and overlook what they do not wish to see.'<sup>25</sup>

So the Genesis-geology debate was really a conflict of worldviews—that is, deism, vague forms of theism and atheism joined together against biblical Christianity. Sadly, many Christians, even clergymen, absorbed many of the anti-biblical philosophical assumptions hidden in scientific writings in those days. By the publication of Darwin's theory in 1859, the scriptural geologists, as a 'species' of thinkers, had almost passed into extinction. Their thinking about both Scripture and the geological evidence resurfaced surprisingly, in the middle of the 20<sup>th</sup> century, with the modern young-earth creationist movement, which is now worldwide in extent.<sup>26</sup>

### The relevance for today

The early 19<sup>th</sup> century Genesis-geology debate is very relevant for today for at least two reasons. First, it shows us that, contrary to popular opinion (even among highly trained scientists), scientific facts are not self-interpreting. The evidence is interpreted based on the philosophical and religious assumptions of the scientist (or scientific community). The old-earth geologists rejected the biblical account of Creation and Noah's Flood and could see no evidence in the rocks for a 6,000-year-old earth and a global catastrophic flood. The scriptural geologists looked at the very same rocks and fossils and concluded that they were 'screaming' confirmation of the biblical record.

History is confirming that the scriptural geologists were right. Lyell's uniformitarianism was the ruling dogma of geology for almost 150 years until the late 1970s, when 'neocatastrophism' began to emerge, and with it came reinterpretations of the geological record.<sup>27</sup> Lyell's way of interpreting the rocks simply does not fit the facts, and evidence of catastrophism on a continental, even global scale is becoming increasingly obvious, even to many evolutionists.

We find a similar thing happening in biology. Old-earth geology paved the way for Darwinism. On his famous voyage around the world Darwin studied the first volume of Lyell's *Principles of Geology* and then applied the same naturalistic assumptions to his interpretation of the biological evidence. With the apparent triumph of Darwinism, naturalism gained control of every discipline within the university, not only in the West, but also in the former communist lands and every other nation on earth. But Darwinian evolution has come under considerable fire in the past four decades, not only from people who are committed to the Bible but also from others who are agnostic

regarding the existence of God.<sup>28</sup> These diverse writers have argued that evolution is a 'theory in crisis' because scientific research has increasingly shown that it simply does not fit the facts.

Secondly, several of the early 19<sup>th</sup> century scriptural geologists expressed their concerns that if the early chapters of Genesis were rejected as literal accurate history it would only be a matter of time before other parts of the Bible would be rejected as well, leading inevitably to the spiritual decline of the church and the moral decay of society. One scriptural geologist put it this way in 1834:

'Many reverend Geologists, however, would evince their reverence for the divine Revelation by making a distinction between its *historical* and its *moral* portions; and maintaining, that the latter only is inspired and absolute Truth; but that the former is not so; and therefore is open to any latitude of philosophic and scientific interpretation, modification or denial! ... What the consequences of such things must be to a revelation-possessing land, time will rapidly and awfully unfold in its opening pages of national scepticism, infidelity, and apostacy [*sic*], and of God's righteous vengeance on the same' [emphasis in original]!<sup>29</sup>

I would suggest that the last 170 years in the Western world has confirmed the scriptural geologists' worst fears. The West is in rapid moral and social decline (e.g. drug abuse, sexual immorality, abortion, epidemic divorce, school violence, suicide, etc.). This seems particularly obvious in Britain and America, where Christianity has previously had such a great moral influence on culture. And the same negative effects are seen wherever the West's influence is felt. What we believe about the past, especially the origin and history of the physical creation, affects significantly our purpose in life, our values, our moral behaviour and our relationships to other people. The impact is seen at the personal, community and national levels. Many churches also suffer from compromise with error.

Naturalism fails as a worldview, not only because of the strong scientific evidence against evolution and millions of years, but also because naturalism provides no philosophical basis for a moral and just society or for purpose in life. Evolution is not the cause of the moral and social chaos. But it has been the 'scientific' justification for the rejection of God and His Word and for much of the evil of the last 150 years (including exploitative capitalism, Nazism, racism, and communism).<sup>30</sup> The only hope for the halt and reversal of the increasing moral decadence and hopelessness in the West and in the East is the return of individuals to God and His Word, which gives us the true history of the world.

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