



2003

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Recommended Citation

Mortensen, Terry (2003) "The Early 19th Century British “Scriptural Geologists”: Opponents of the Emerging Old- Earth Theories of Geology," *The Proceedings of the International Conference on Creationism*: Vol. 5 , Article 45.

Available at: https://digitalcommons.cedarville.edu/icc_proceedings/vol5/iss1/45

THE EARLY 19TH CENTURY BRITISH “SCRIPTURAL GEOLOGISTS”: OPPONENTS OF THE EMERGING OLD-EARTH THEORIES OF GEOLOGY

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KEYWORDS:

Scripture, geology, worldview, history, philosophy, deism, atheism, naturalism, Scriptural geologist, old-earth, young-earth, nineteenth century, day-age theory, gap theory, local flood, tranquil flood, global flood, catastrophism, uniformitarianism

ABSTRACT

The geological theories of an earth millions of years old were developed in the late 18th and early 19th centuries. This paper describes that development and focuses on a group of writers, known as the “Scriptural geologists,” who opposed these geological theories. These scientists and non-scientists wrote short pamphlets and massive books raising Biblical, geological and philosophical arguments against the idea of an old earth. They also refuted the reinterpretations of Genesis that arose in an attempt to harmonize the Bible with old-earth geological theory (such as the gap, day-age and local Noachian flood theories). Four of the geologically most competent Scriptural geologists are introduced to the reader before giving a summary of some of their shared Biblical and geological objections to the idea of an old earth. The paper concludes with an analysis of the real nature of the 19th century Genesis-geology debate and how it relates to the age-of-the-earth debate in the church today.

INTRODUCTION

A little known controversy in the early 19th century centered on the age of the earth. The participants were, on the one hand, the leading geologists of the day and on the other hand a group of scientists and non-scientists, primarily in Britain, who collectively became known as the “Scriptural geologists.”

Like contemporary young-earth creationists, the Scriptural geologists held to the dominant Christian view within church history [1, ch. 3-5] and at the beginning of their own time, namely, that Genesis 1-11 is inspired, inerrant Scripture which should be interpreted literally as a reliable, fully historical account. This conviction led them to believe that Noah’s flood was a unique global catastrophe, which produced most of the geological record, and that the earth was roughly 6000 years old, having been created and furnished with all kinds of life in six literal days. From this young-earth creationist position they opposed with equal vigor both the “uniformitarian” and “catastrophist” old-earth geological theories. They also opposed all the old-earth reinterpretations of Genesis, such as the gap and day-age theories, the tranquil and local flood theories, and the “Genesis is myth” theory, all of which were developed and popularized in the church at this time.

This early 19th 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. The Scriptural geologists have been greatly misrepresented, both by their contemporary old-earth opponents and by nearly all later historians, whether secular or Evangelical [2, pp. 3-8], all of whom have given them superficial analysis. But the battle the Scriptural geologists fought in the 19th century is also very relevant for understanding the current growing debate about evolution and creation and especially the debate among Christians about the age of the earth. To understand both the 19th century debate and the current one, we need first to consider briefly the historical context.

THE RELATION OF SCIENCE AND SCRIPTURE

Two important people in the 16th century greatly influenced the Genesis-geology debate of the early 19th century. Those two men were Galileo and Francis Bacon. As is well known, Galileo (1564-1642) was a proponent of Copernicus’s theory that the earth revolves around the sun, not vice versa. Initially the Roman

Catholic Church leadership had no problem with this idea, but for various academic, political and ecclesiastical reasons in 1633 the Pope changed his mind and forced Galileo to recant his belief in heliocentricity on threat of excommunication [3; 4]. But eventually heliocentricity became generally accepted and with that many Christians absorbed two lessons from the so-called “Galileo affair.” One was from a statement of Galileo himself. He said that the Bible tells us how to go to heaven, but it does not tell us how the heavens go [5, p. 34]. In other words, it was reasoned, the Bible teaches us theology and morality, but not astronomy or science. The other closely related lesson was that the church will make serious mistakes if it tries to tell scientists what to believe about the world.

Galileo’s contemporary in England, Francis Bacon (1561-1626), was a politician and philosopher who significantly influenced the development of modern science. He emphasized observation and experimentation as the best method of gaining true knowledge about the world. He also insisted that theory should only be built on the foundation of a wealth of carefully collected data. But although Bacon wrote explicitly of his belief in a recent literal 6-day creation [6], he, like Galileo, insisted on not mixing the study of what he called the two books of God: creation and the Scriptures [7].

So as a result of the powerful influence of Galileo and Bacon a strong bifurcation developed between the interpretation of creation (which became the task of scientists) and the interpretation of Scripture (which is the work of theologians and pastors). When we come to the 19th century we find that often the old-earth geologists, whether Christian or not, referred to Bacon and Galileo’s dictums to silence the objections of the Scriptural geologists. The warning was obvious and powerful on the minds of the public, namely, that defenders of a literal interpretation of Genesis regarding creation and Noah’s flood were repeating the same mistake the Roman Catholic Church made two centuries earlier in relation to the nature of the solar system, and just look at how that retarded the progress of science.

NEW THEORIES ABOUT THE HISTORY OF CREATION

In contrast to the long-standing young-earth creationist view, different histories of the earth began to be developed in the late 18th century, which were evolutionary in character. Three French scientists were prominent. In *Epochs of Nature* (1778) Comte de Buffon (1708-88), 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 19th 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 19th 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 elegantly simple oceanic theory was quickly rejected because it did not fit the facts, but the idea of an old-earth remained with his students [8].

The Scotsman, James Hutton (1726-97), 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 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 [9, 10]. An advocate of a catastrophist theory similar to Cuvier’s, he too imagined that the earth was much older than the Bible taught [11].

The Frenchman, Georges Cuvier (1768-1832), was a comparative anatomist who popularized the catastrophist *Theory of the Earth* (French original in 1812, first English edition in 1813). By studying fossils

found largely 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, the last of which probably was about 5000 years ago. This obviously coincided with the date of Noah's Flood, but Cuvier never explicitly made this identification in his published theory.

Finally, Charles Lyell (1797-1875), a trained lawyer turned 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 1840's his view became the ruling paradigm in geology.

So, in summary, in the early decades of the 19th century there were three views of earth history. The catastrophists (e.g., Smith and Cuvier) believed that since a supernatural beginning there had been at least 4 regional or global floods during the course of long ages before man was created, which were responsible for most of the geological record. The uniformitarians (e.g., Hutton, Lyell) rejected the idea of such great catastrophies and insisted that all present day processes have continued in the past, even untold ages before man, at essentially the same rate since a possible supernatural beginning. The traditional/Biblical view of a recent six-day creation and geologically significant global flood was articulated and defended by the Scriptural geologists.

It should be noted that two very influential geologists in England (and in the world) at this time were William Buckland (1784-1856) and Adam Sedgwick (1785-1873). Buckland became the head professor of geology at Oxford University in 1813 and Sedgwick gained the same position at Cambridge in 1818. Both were ordained Anglican clergy and both initially promoted old-earth catastrophism. But under the influence of Lyell they both converted to uniformitarianism with public recantations in the early 1830s. Buckland is often viewed as a defender of Noah's flood because of his 1823 book, *Reliquiae Diluvianae*. But this apparent defense of the flood was actually a subtle attack on it, as Scriptural geologists accurately perceived. Because of their powerful positions in academia and in the church Sedgwick and Buckland led many Christians in the 1820's to abandon their faith in the literal interpretation of Genesis and in the unique and geologically significant Noachian Flood.

One more fact needs to be mentioned about geology at this time. The world's first scientific society devoted exclusively to geology was the London Geological Society, founded in 1807 by thirteen wealthy men who were amateur geologists. From its inception, which was at a time when very little was known about the geological formations and fossils in them, the London Geological Society was controlled by the assumption that earth history is much older and different from that presented in Genesis. And a few of its most powerful members in the early decades of its existence were Anglican clergymen.

CHRISTIAN COMPROMISES WITH OLD-EARTH GEOLOGICAL THEORIES

During the early 19th century many Christians made various attempts to harmonize these old-earth geological theories with the Bible. Thomas Chalmers (1780-1847), who later became one of the leading Scottish evangelicals, started preaching in 1804 that the age of the earth did not matter and by at least 1814 he was advocating the gap theory [12]. This became the most popular reinterpretation of Genesis among Christians for about the next half-century. The respected evangelical Anglican clergyman, George Stanley Faber (1773-1854), began advocating the day-age theory in 1823 [13]. This was not widely accepted by Christians until Hugh Miller (1802-56), the prominent Scottish geologist and evangelical friend of Chalmers, revived it in the 1850s [14].

Also in the 1820s the evangelical Scottish zoologist, Rev. John Fleming (1785-1857), began arguing for a tranquil Noachian deluge [15], and in the late 1830s the prominent evangelical Congregationalist theologian, John Pye Smith (1774-1851), advocated a local creation and a local Flood, both of which supposedly occurred in Mesopotamia [16]. Then, as German liberal theology was beginning to spread in Britain in the 1820s, the view that Genesis is a myth, which conveys only theological and moral truths, started to become popular.

So it is clear that by 1830, when Lyell published his uniformitarian theory, most geologists and much of the church already believed that 1) the earth was much older than 6000 years and 2) the Noachian Flood was not the cause of most of the geological record. Lyell is often given too much credit (or blame) for the church's loss of faith in Genesis. In reality, most of the damage was done before Lyell, often by Christians,

who were otherwise quite Biblical, and this compromise was made at a time when geologists knew very little about the rocks and fossils of the earth.

Nevertheless, many Evangelicals and High Churchmen still clung to the literal view of Genesis. In fact, up until about 1845 the majority of Bible commentaries on Genesis taught a recent six-day creation and a global catastrophic flood [2, pp. 53-67]. So in the early 19th century there were competing old-earth geological theories of the earth and competing interpretations of the early chapters of Genesis. And the Scriptural geologists fought against all these ideas.

PHILOSOPHICAL DEVELOPMENTS

As a prelude to this Genesis-geology controversy, the 18th century also witnessed the spread of two competing worldviews: deism and atheism. These two worldviews flowed out of the Enlightenment, in which human reason was elevated to the place of supreme authority for determining truth. Apart from the Deists' belief in a Creator God and a supernatural beginning to the creation, they were indistinguishable from atheists in their views of Scripture and the physical reality. In Deism, the Bible is merely a human book, containing errors, and not the inspired Word of God, and the history and function of the creation can be totally explained by the properties of matter and the "inviolable laws of nature." Deists and atheists often disguised their true views, especially in England where they were not culturally acceptable. Many of them gained influential positions in the scientific establishment of Europe where they subtly promoted what is today called "philosophical naturalism." But the effects of deistic and atheistic philosophy on Biblical studies and Christian theology also became widespread on the continent in the late 18th century and in Britain and America by the middle of the 19th century. As Reventlow concluded in his thorough study,

we cannot overestimate the influence exercised by Deistic thought, and by the principles of the Humanist world-view which the Deists made the criterion of their biblical criticism, on the historical-critical exegesis of the nineteenth century; the consequences extend right down to the present. At that time a series of almost unshakeable presuppositions were decisively shifted in a different direction [17].

So the Biblical worldview, which had dominated the Western nations for centuries, was rapidly being replaced by a naturalistic worldview.

THE SCRIPTURAL GEOLOGISTS

It was in the midst of these revolutions in worldview and the reinterpretation of the phenomena of nature and the Bible that the Scriptural geologists expressed their opposition to old-earth geology. Well, who were these men? The Scriptural geologists were a very diverse group of individuals. I discovered over 30 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 ranged from short pamphlets to massive well-documented books and they raised Biblical, philosophical and geological objections against old-earth theories.

What was most interesting for me as a historian was the fact that the old-earth opponents of the Scriptural geologists, including fellow Christians, generally misrepresented them as being opposed to science and being ignorant of geological facts. None of the old-earth geologists responded to the arguments of the geologically most competent Scriptural geologists, even though it was clear that in at least a couple of cases old-earth geologists personally knew one or more of these Scriptural geologists. In my Ph.D. thesis, I wrote individual chapters on each of thirteen Scriptural geologists [2, pp. 84-390], giving a biographical sketch and a detailed summary of their arguments against the old-earth theories. Here I am limited to briefly introducing you to four of the most geologically competent Scriptural geologists.

To set the context, it is helpful to see what Lyell had to say about the opponents of old-earth geological theories. Lyell described them as "wholly destitute of geological knowledge" and unacquainted "with the elements of any one branch of natural history which bears on the science." He said that they were "incapable of appreciating the force of objections, or of discerning the weight of inductions from numerous physical facts." Instead, he complained, "they endeavour to point out the accordance of the Mosaic history with phenomena which they have never studied" and "every page of their writings proves their consummate incompetence" [18]. As will be clear, these men were far from being the anti-geology, scientific ignoramus that Lyell, most of their other contemporary critics and nearly all historians have portrayed them.

George Young (1777-1848)

Young was born into a poor, godly farming family in Scotland. Since he was born without a left hand, farming was ruled out as a profession. His parents therefore encouraged him into Christian ministry. He got his first degree from the University of Edinburgh, where he focused on mathematics and natural philosophy and was a favorite student of professor John Playfair, who at this time was in the process of becoming the articulate interpreter of James Hutton's uniformitarian theory. Young then studied theology for five years under a leading Scottish theologian. In 1805 he moved to the little port of Whitby in Yorkshire and became the pastor of a Presbyterian congregation, called Whitby Chapel, where he served faithfully until his death in 1848. After beginning his pastoral ministry he also received an M.A. and an honorary Doctor of Divinity. As a godly pastor, Young was respected for his concern for the poor and his generous, self-denying, Christian spirit, because of which he delighted to unite with Christians of other Protestant denominations in joint efforts of witness and service. His congregation fixed a monument over the pulpit of the church after his death, which honored Young for having "preached the Word of God within these walls with unabated zeal for 42 years, actuated and sustained throughout solely by a sense of duty, and an anxious desire for the salvation of souls" [19].

Beyond this, his scholarly attainments were also considerable. He had a more than common knowledge of Hebrew, Greek, Latin, French and Italian, as well as an acquaintance with Arabic, Chaldee and Syriac, and was considered quite an authority on the Anglo-Saxon language.

In 1823 he became a founding member and the first secretary of the Whitby Literary and Philosophical Society, a position he held until his death and which also included the establishment of the Whitby Museum. He was also a corresponding member of the Wernerian Natural History Society and an honorary member of several regional "philosophical societies" (which were very scientific in orientation since in those days science was often called "natural philosophy"). He served as an advisor to the Yorkshire Philosophical Society and as its coastal representative procuring fossil and rock samples. Young published 21 books, which included books of sermons, theology, history, a biography and scientific treatises.

Three of his books and six scientific journal articles dealt with geology and were based on wide reading and very thorough investigations of the strata of his home area of Yorkshire, where a great percentage of the so-called "geological column" was exposed in the mines and on the sea coast. He gave the most geologically competent and thorough analyses of the geological record done by any Scriptural geologist. He also sought to answer in a gracious and respectful, yet challenging way, the specific geological and theological arguments of the leading old-earth geologists. He contended that the rocks and fossils gave abundant evidence that most of the geological record was the result of Noah's Flood. His *Geological Survey of the Yorkshire Coast*, published in 1822 and revised and expanded in 1828, was praised by leading geologists of his day for its accurate observations, although they completely ignored his lengthy theoretical interpretations at the end of the book. In 1838 he published *Scriptural Geology* to defend Genesis against old-earth geology. This was followed two years later by *Appendix to Scriptural Geology* (1840), in which he responded to John Pye Smith's theory that Genesis described merely a local creation and local Noachian Flood.

George Fairholme (1789-1846)

Fairholme was born into a wealthy Scottish family. His early education probably resulted from home tutoring and self-education. There is no record of him attending any of the major universities of the UK, but he became well educated nonetheless. His wealth enabled him and his family to travel extensively to study geological formations in England, Scotland and Ireland as well as on the European continent, especially in Belgium, France and Germany. His devout Christian faith was expressed in his writings on geology, and also in his will, which I discovered among the possessions of one of his living relatives.

Besides being well read in the leading British and foreign geological and scientific literature of his day, Fairholme also did considerable geological fieldwork and studied other aspects of nature during his extensive travels. He personally visited or corresponded with other naturalists, developed his own small collection of rocks and fossils, did investigations at leading museums and zoos, performed scientific experiments and attended some of the meetings of both the German and British associations of science.

On this basis, he published seven scientific journal articles on such diverse topics as coal, Niagara Falls, human fossils, spiders, elephants, woodcocks and microscopic animals. His most significant writings, however, were his two 400-page books on geology: *The Geology of Scripture* (1833) and *Physical Demonstrations of the Mosaic Deluge* (1837). In these he sought to correlate the geological record with the

order of events described in the Biblical accounts of creation and the Flood. In his second book, his best work, he carefully argued from the present state of the valley systems of the continents and the erosion rates of the seacoasts and several prominent waterfalls in Germany and America that the Flood must have occurred about 5,000 years ago.

John Murray (1786?-1851)

Murray was born in Stranraer, Scotland, and from an early age he demonstrated a great interest in science. Eventually he attained the M.A. and Ph.D. degrees in science. He became well known throughout Great Britain as a traveling lecturer on physics and chemistry for much of his life, and was described by a prominent contemporary as one of the best lecturers in the world. Although he was a loyal member of the Church of Scotland and a strong Calvinist all his life, the local paper said of him at his death, "His benevolent heart was a stranger to bigotry and sectarianism. He loved all who loved the Lord Jesus Christ. In the hours of sickness and of death he manifested the same meek, patient, and amiable spirit which had characterized his deportment through life." [20]

With great industry he developed an impressive breadth of knowledge in many subject areas of both science and literature. He did not gain great eminence in any single field, though he contributed much to chemistry and to mining. Between 1816 and 1835 he wrote several scientific papers, conducted many experiments and lectured often on the subject of the safety lamps used by miners; a miner's lamp was one of Murray's many inventions. Because of this expertise, he was invited in 1835 to testify on safety lamps and mine ventilation before a committee of Parliament.

His knowledge and experience qualified him to become a Fellow of the Linnaean Society in 1819, the Society of Antiquities in 1822, the London Geological Society in 1823 (his membership continued through his career) and the London Horticultural Society in 1824. He was almost appointed in 1831 to the chemistry chair of King's College, London. Additionally, he was a member of the Meteorological Society of London, the Wernerian Natural History Society of Edinburgh and many other regional scientific or medical societies as well as the mechanics institutes in several cities. Besides lecturing and doing experimental research he also traveled extensively to do his own first-hand archaeological and geological fieldwork, some of which was done at great physical risk, for example, exploring the top of an active volcano. Additionally, he was a prolific writer, publishing 28 books and at least 60 articles in scientific journals, plus frequent correspondence over many years to the *Mechanics' Magazine* and the *Mining Journal*. He had nearly 20 inventions, which came into practical use. His journal articles addressed subjects in chemistry, physics, medicine, geology, natural history, and manufacturing. His books, some of which went through two or more editions, covered such diverse topics as the cultivation of the silkworm, modern paper, atmospheric electricity, ventilation, disinfection and other sanitation measures, poisons, diamonds, a method for forming an instantaneous contact with shore during a shipwreck, and plant physiology. He also wrote a passionate pamphlet calling for the end of slavery in the colonies, a book of minor poems, and a scientific/historical travel memoir of his three-month journey through Switzerland in 1825.

Murray wrote two books which directly related to geology and the Bible. *The Truth of Revelation* was published in 1831, with an expanded second edition appearing in 1840. In this book he endeavored to demonstrate the truth and inspiration of the Bible by an appeal to the existing monuments, sculptures, gems, coins and medals from ancient peoples of the Near East and elsewhere. His *Portrait of Geology* (1838) was written primarily to give proofs from geology of divine design in creation, and secondarily to add verification of the truth of Scripture by presenting his geological and Biblical reasons for rejecting old-earth theories.

William Rhind (1797-1874)

Finally, Rhind was yet another Scotsman who was a geologically competent Scriptural geologist. His university studies at Marischal College, Aberdeen, were devoted to medicine and he became a Licentiate of the Royal College of Surgeons of Edinburgh in 1818. Shortly thereafter he began his medical practice in London but soon reestablished it back in Scotland. Although he became quite successful as a doctor, his real love was literature and scientific research and so in the mid-1820s he moved to Edinburgh, where he spent nearly forty years of his life writing and lecturing on various subjects of natural science, primarily botany, zoology and geology. In 1854, he became a lecturer in botany for a few years in the medical faculty at Marischal College and then spent the last decade of his life in poor health living with his older brother near Newport, Fife. Rhind was likely a member of the Church of Scotland and his writings reflect a strong commitment to the Scriptures. According to one biographer, "he was universally loved for his character and bearing, and a most amiable man. He was unassuming and retiring in his manner, but a most agreeable and interesting member of society" [21].

In addition to his early membership in the Royal College of Surgeons of Edinburgh, by 1830 he also had become a member of the Royal Medical Society and Royal Physical Society of Edinburgh, and some time before 1858 he became an honorary member of the Natural History Society of Manchester. Rhind also was a voluminous writer on many subjects. His non-scientific books included a historical work on his home county and three tourist guides of Scotland. Of his scientific writings, a number reflected his strong commitment to see good textbooks available for the education of children, aged 10-18 years. Many of these books went through several editions and included class books on the natural history of the earth, botany, geology, zoology, meteorology, physical geography, and elementary geography. In 1829 he published the first thorough work on the nature and cure of intestinal worms in the human body. His magnum opus discussing living and fossil plants was his 700-page *History of the Vegetable Kingdom*, which first appeared in about 1841 and went through eight editions up to 1877. In addition to his books, Rhind published several scientific journal articles on various topics: a species of worm in sheep (1830), the idea of spontaneous generation of living creatures (1830, an idea Rhind rejected), the geological arrangement of the strata (1844), the hydrology of the British Isles (1855), and coal found in Seil Island, Argyleshire (1858).

His books dealing directly with geology at an adult level were three. In 1833 he produced a book of excursions around Edinburgh, which illustrated the geology and natural history of the area and received high scientific reviews, especially for its accurate geological information. In 1842 he published *The Geology of Scotland and Its Islands*, a purely descriptive work, which he hoped would stimulate further geological research by local geologists. But the work in which Rhind discussed geological theory was *The Age of the Earth*, published in 1838. In it he presented his Biblical and geological reasons for rejecting the old-earth theories.

The Scriptural geologists' BIBLICAL arguments against old-earth geology

As would be expected they did not write identical works. But there were a number of Biblical and geological objections that were shared by many, and sometimes all, of the Scriptural geologists. With regard to Biblical objections, some of them gave quite detailed refutations of the various old-earth re-interpretations of Genesis. But two important general criticisms commonly appeared. First, they contended that these old-earth compromise views were only possible if Christians superficially read Genesis 1-11 and ignored other relevant Scriptures. Nearly all old-earth proponents *ignored* two critically important passages, even though they insisted that their views did not contradict Scripture. Those passages were the account of Noah's Flood in Genesis 6-9 and the Fourth commandment in Exodus 20:11. These passages were *referred to* by nearly all the Scriptural geologists, who saw them as fatal to the old-earth theories. So the Scriptural geologists insisted that one could not legitimately speak of the harmony between the Bible and old-earth geological theory, if one paid scant attention to what the Bible actually says.

A second major Biblical objection of the Scriptural geologists was related to the Biblical teaching about death. The old-earth theories postulated long ages of violence, death and destruction in the creation before the creation and fall of man. But the Scriptural geologists argued that the Bible says that God brought death into the world when He judged man and the whole creation because of man's sin. So the vast geological ages proposed by the old-earth geologists could not possibly have taken place. Rather the geological evidence of death and extinction pointed primarily (but not exclusively) to Noah's flood.

The Scriptural geologists' GEOLOGICAL arguments against old-earth geology

With respect to geological evidence the Scriptural geologists raised five important objections, though the geologically competent Scriptural geologists also gave many different detailed objections to old-earth theories. The Scriptural geologists believed that the old-earth geologists were closing their minds to evidence that was contrary to their theories and that there were logical errors in their old-earth interpretations of their otherwise accurately described geological evidence.

One important geological objection related to the gradual transitions between different mineralogical formations. Several Scriptural geologists [e.g., 22, pp. 22-23; 23, pp. 12, 80, 285, 395-98] and many old-earth geologists [e.g., 9, pp. 1, 9-11, 13, 15, 21, 27, 32; 24; 25] observed that it was quite common in the geological record to find one kind of mineral deposit gradually changed into another kind, for example, sandstone blending into limestone. Furthermore, the Scriptural geologists noted that, at this transition boundary, there was no evidence of soil or erosion, as would be expected if the lower layer had been exposed to water or air for a long period of time. The theoretical implications of this observation were almost universally ignored by old-earth geologists when they accurately described this phenomenon, but it indicated to the Scriptural geologists that the strata were deposited in rather rapid succession (as expected during a year-long global flood).

A second important geological objection related to certain polystrate fossils, which were often found in an upright position and cutting through two or more strata of rock [22, pp. 12-14; 23, pp. 392-94; 26, pp. 36-37]. Two theories to explain such fossils were proposed and debated by leading geologists well into the 1840's. They were 1) that the trees had been gradually buried where they grew, or 2) that the trees had been uprooted, transported and deposited by flood waters, which rapidly buried them in sediments. Since a dead tree would rot and disintegrate over hundreds or thousands of years, the Scriptural geologists, along with some old-earth geologists [e.g., 27; 28, pp. I:160], believed that these trees had been transported and buried catastrophically. And since the formations where these trees were found were analogous in their mineralogical characteristics to other formations where no trees were found, the Scriptural geologists saw them as an important piece of evidence that most of the strata were deposited rapidly by Noah's flood.

A third important geological objection related to shell creatures. Since these made up the majority of fossils, they had a great, if not singular, importance for old-earth geologists in working out their history of the earth. William Smith, the "Father of English Stratigraphy," based his depiction and relative dating of the geological record primarily on shell creatures [10, p. vi and "Geological table" after p. xi]. In 1828 Lyell worked out his interpretation of the Tertiary formation (or Cenozoic, as it is called today) solely on the basis of shells [29, pp. 3-5]. Buckland stated that fossil shells were "of vast importance in investigating the records of the changes that have occurred upon the surface of our globe" and that "in fact without these [organic remains], the proofs of the lapse of such long periods as Geology shows to have been occupied in the formation of the strata of the earth, would have been comparatively few and indecisive" [30, pp. I:110, 112]. Geologist James Smith said in 1838 that judging the age of a deposit purely on the basis of shells was a sound rule of geological reasoning [31, pp. 84-85].

But a number of Scriptural geologists [e.g., 32, pp. 19 & 51; 33, pp. I:210-11; 34, pp. 329-32] along with several respected conchologists (experts on shell creatures) and even a few old-earth geologists objected that these shells were an unreliable means of dating the rock formations, for several reasons [e.g., 35; 36]. First, the taxonomic classification of shell creatures was very controversial and confusing at this time. Often different species or even genus names were given to what in reality was a single species. Secondly, there was experimental and observational evidence that the same creature could produce different shells depending on slight changes in such variables as the salinity or temperature of the water, or the surface to which the creature frequently attached itself. And thirdly, it was known that marine shell creatures could adapt to fresh water and that fresh water shell creatures could adjust to life in the sea, if the transition was gradual. This meant that the distinction of fresh-water and salt-water deposits solely on the basis of shells was questionable to say the least.

A fourth important geological objection related to human fossils. A primary reason that the majority of geologists at that time believed that most of the geological record was deposited long before the creation of man was that apparently no fossil human bones had been found with extinct animals in lower formations but only in recently formed deposits close to the earth's surface. But several Scriptural geologists [23, pp. 41-52; 37, pp. 82-96; 38, pp. II:124-34, 394-412], argued that there were several fossil discoveries which refuted this widespread opinion, but that this evidence had been misinterpreted due to superficial investigations or that the correctly interpreted evidence had been ignored or suppressed by old-earth geologists, which was a fact confirmed by Lyell many years later (after the old-earth view had completely triumphed) in his discussion of several examples [60, pp. 63-69, 96-105].

Finally, another important objection of the Scriptural geologists to the old-earth theories was that since geology was in its infancy as a science in the early 19th century, geological knowledge was far too limited to justify a theory of the whole earth based solely on the geological data [26, pp. 111-14; 32, p. 6; 33, pp. I:10-14, II:289, 343; 34, pp. 2-3, 8-9; 39, pp. 137-38, 142]. But again, the Scriptural geologists were not the only ones raising this objection [40; 41; 42].

It is important to know that Werner based his old-earth theory on his knowledge of the sedimentary rocks only around his home in Saxony, Germany [43]. Hutton first sketched his old-earth theory of the earth in a journal article *before* he had done hardly any fieldwork and he traveled very little inside or outside Scotland to look for confirmation of his theory [44]. Cuvier built his old-earth catastrophist theory exclusively on the fossils and formations of the Paris Basin, most of which he did not personally investigate in the field. But furthermore, in a candid and revealing admission, he stated that almost all of the fossils upon which he based his theory were found by people, who did not carefully observe or record the precise geological location where the bones were found [45]. And Lyell developed the essential points of his whole uniformitarian theory after only a few years of geological observations in England and before his first major geological tour on the European continent [46]. These theories were indeed based on a very limited

knowledge of the geology of Britain and Europe, to say nothing of the rest of the earth. The Scriptural geologists rightly concluded that this grand theorizing on skimpy data was contrary to the method taught by Bacon, whom the old-earth proponents so frequently claimed to follow.

So because of these and other biblical and geological objections the Scriptural geologists argued that the old-earth theories were false and that the acceptance of them would not only undermine the Christian faith and morality, but would also hamper the progress of geology in true knowledge.

SO WHAT WAS THE DEBATE REALLY ABOUT?

In spite of these significant 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? The historical evidence clearly shows that they were not rejected because their geological objections had no basis in the science of their day. They were not naïve, Bible students nor were they “wholly destitute of geological knowledge” [18] as their opponents and historical critics charged. Rather, I believe that the reason they were ignored is that they were in a conflict of philosophical or religious worldviews.

The Scriptural geologists were not opposed to geological facts, but to the interpretation of those facts. And they argued that old-earth interpretations were based on anti-Biblical philosophical assumptions. They did not label those assumptions with the modern term of “philosophical naturalism.” But they clearly perceived them as such. And their perceptions reflected the theological orientation of the architects of old-earth theory. Buffon was a deist or secret atheist [47, pp. 577-78], as were Lamarck [48, p. 243] and Hutton [49]. Laplace was an open atheist [50]. Werner [51, p. 257], Cuvier [48, pp. 247-48], Smith [52, p. 25] and Lyell [53, p. 136] were probably deists or some sort of vague theists. While these men had varied opinions about the existence of God, they all rejected the God revealed in Scripture and operated with the assumptions of philosophical naturalism in their interpretation of the astronomical and geological evidence and in the development of their old-earth theories of the history of the creation.

The Scriptural geologists also insisted that there was a difference between, on the one hand, the experimental scientific studies which use observations of presently occurring processes and repeatable experiments to determine how the present creation operates and, on the other hand, the historical scientific studies which use circumstantial evidence and any reliable written records to try to reconstruct the origin of the creation and its historical development to its present state. The Scriptural geologists insisted that in constructing a history of the earth geologists should not limit themselves to the circumstantial evidence of rocks and fossils, but should also carefully consult the more important eyewitness testimony of God’s Word.

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 clergy, absorbed many of the anti-biblical philosophical assumptions hidden in scientific writings in those days (and our days), and so they unconsciously became semi-deists, as society was enjoying the lush and seemingly boundless fruits of human reason at work in the Industrial Revolution. This is the ultimate reason, I believe, that the writings of the geologically competent Scriptural geologists were rejected without refutation by the leading geologists of their day. 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 surprisingly resurfaced in the middle of the 20th century with the modern young-earth creationist movement, which is now worldwide.

THE RELEVANCE FOR TODAY

The battle the Scriptural geologists fought is very relevant for today, for at least two reasons. First, their existence helps to expose the fallacy of the recent charge by evangelical church historian, Mark Noll [54], who follows the former Seventh Day Adventist and now agnostic historian of science, Ronald Numbers [55].

These two men have discredited modern young-earth creationism by attempting to root it in the teachings of Seventh Day Adventism and stating that young-earth geology began in the early 20th century with the Adventist George McCready Price. Certainly, Price’s geological writings influenced men such as Henry Morris. But Price and the earlier Scriptural geologists made many of the same observations and interpretations of the geological phenomena, which modern creationists have also observed. And the Scriptural geologists, the early Adventists and the modern creationists all obtained their young-earth ideas from a literal interpretation of Genesis, which freed their minds from anti-Biblical philosophical assumptions in geology and which is the way Genesis was almost universally interpreted in the church prior to the 19th century. So, Mark Noll is badly misinformed as a historian and greatly misleads his readers when he states in his influential book, *The Scandal of the Evangelical Mind*, that, young-earth creationists use “a fatally

flawed interpretive scheme of the sort that no responsible Christian teacher in the history of the church ever endorsed before this century” [54, p. 14].

A second lesson from the Scriptural geologists’ battle with old-earth Christians of their day is that the increasingly popular old-earth Intelligent Design Movement, lead by Phillip Johnson, is fatally flawed. I greatly appreciate what IDM writers are doing to expose the inadequacy of theories of biological evolution to explain the incredible design we see in living creatures and to challenge the philosophical naturalism that controls science. But they are leading many Christians astray regarding geological and astronomical (or cosmic) evolution, which most IDM people uncritically accept as proven fact. Like the early 19th century old-earth advocates, Phillip Johnson and the IDM are only focusing on design in creation and overlooking the obvious witness in creation to God’s wrath poured out at the fall and at the flood. Also, they apparently fail to see (or at least fail to explain), that philosophical naturalism controls geology and astronomy as much as, if not more than, it controls biology and that naturalism took control of science through old-earth geology and astronomy over fifty years before Darwin’s famous book.

Ultimately the age of the earth controversy is not just a philosophical argument; rather old-earth geology and old-universe astronomy, like evolutionary biology, are massive assaults on the authority and clarity of the Word of God. Like old-earth Christians in the 19th century, IDM proponents insist on keeping the Bible, or at least Genesis, out of the discussion or, when they do allow the Bible in, they give only a superficial attention to the text. In a recent book, Johnson encouraged Christian readers, “The place to begin is with the Biblical passage that is most relevant to the evolution controversy. It is not in Genesis; rather, it is the opening of the Gospel of John” [56, p. 151]. He then quotes and discusses Jn. 1:1-3 and Rom. 1:18-20. In an interview in 2001 he also stated, “I think that one of the secondary issues [in the creation-evolution debate] concerns the details of the chronology in Genesis. . . . So I say, in terms of biblical importance, that we should move from the Genesis chronology to the most important fact about creation, which is John 1:1. . . . It’s important not to be side-tracked into questions of biblical detail, where you just wind up in a morass of shifting issues” [57]. This view is seriously mistaken.

This same kind of old-earth, intelligent-design, Genesis-ignoring approach by Christians almost 200 years ago failed to halt the rising tide of skepticism and unbiblical religion. All the early 19th century Christian old-earth proponents used or supported intelligent design arguments against pre-Darwinian evolutionary theories [58]. But the old-earth geology they supported actually paved the way for Darwin’s victory. I see no reason to think that the present strategy of the IDM will lead the culture or individuals back to the God of the Bible and to His inspired, inerrant and authoritative Word.

One final point can be made here. Several of the 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 its evangelistic mission and the moral decay of society. One Scriptural geologist, Rev. Henry Cole, 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! . . . According to these impious and infidel modifiers and separators, there is not one third of the Word of God that *is* inspired; for not more, nor perhaps so much, of that Word, is occupied in abstract moral revelation, instruction, and precept. The other two thirds, therefore, are open to any scientific modification and interpretation; or, (if scientifically required,) to a total denial! It may however be safely asserted, that whoever professedly, before men, disbelieves the inspiration of any part of Revelation, disbelieves, in the sight of God, its inspiration altogether. If such principles were permitted of the most High to proceed to their ultimate drifts and tendencies, how long would they be sweeping all faith in revealed and inspired Veracity from off the face of the earth?” . . . 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!” [60, pp. ix-x, 44-45 (footnote), emphasis in original].

I would suggest that the last 170 years in the Western World has confirmed the Scriptural geologists’ worst fears. This seems particularly obvious in Britain and America, where the gospel has previously had such great cultural influence.

So, in light of all this, I will stand with my Scriptural geologist forefathers and insist that the age of the earth

and its history matter--enormously. It is not a secondary side issue, but it strikes at the very heart of philosophical naturalism's stranglehold of science, culture and much of the church, which first seized its victims in the early 19th century Genesis-geology debate. We need to realize that biological evolution (in whatever form) is only one strand of naturalistic interpretations of the physical creation. In Eccl. 4:12 we read that, "a cord of three strands is not easily torn." Removing one strand may weaken the rope. But the church will not be liberated from the bondage to philosophical naturalism, if only biological evolution is rejected. Old-earth geological evolution and old-universe astronomical evolution must also be rejected. Both the Bible and the demonstrated scientific facts require it. The Scriptural geologists of the early 19th century were convinced of this and wrote to persuade other Christians. Today, when the scientific evidence is more clearly on Scripture than it was even in the early decades of the 19th century, we likewise need to faithfully contend for the plain and literal truth of Genesis.

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