

Infidel Geologists! The Cultural Context of Ellen White's Statements on Geological Science

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ABSTRACT

Ellen White's repeated and strident denunciations of 'infidel geologists' and their ideas in her 1864 monograph "Spiritual Gifts" are well known. This early origins material was invoked from time to time in her subsequent articles for Church periodicals, would be re-worked and expanded in her "Spirit of Prophecy" (1870) and was to see its final denouement in "Patriarchs and Prophets" (1890) with other associated material appearing in the "Great Controversy" (1888). Because of her accepted prophetic status Ellen White's writings in this area have proved to be enduringly authoritative for the Seventh-day Adventist Church. Further, they were enormously formative for George McCready Price and, through him, hugely influential for the world-wide recent creationism movement, beginning in the 1960s. This paper explores the historical and theological contexts of White's pronouncements on geological themes, explores possible provocations and sources behind some of her ideas and notes differences in the manner in which she re-used this material in later publications. This study indicates that her statements on geological matters represented ideas which, while once commonly held, were no longer accepted by professionals involved with the rapid scientific progression of nineteenth century geology.

Keywords: infidel, geology, prophetic

INTRODUCTION

Ellen White (1827-1915) was a co-founder of the Seventh-day Adventist Church with the prophetic status of 'Messenger of the Lord'. Whilst she claimed to have received many visions on a large range of subjects during her long life of ministry her only vision on origins, so far as is known, was given at Lovett's Grove, Ohio, on March 14, 1858, twenty months before the appearance of Darwin's *On the Origin of Species*. The first written account of this revelation appeared in *Spiritual Gifts III*, published in 1864. In this work White makes at least 5 strident references to 'infidel geologists' or to 'infidelity' in a geological context. She would rework this material a number of times over the following 25 years, resulting in two more monographs, *Spirit of Prophecy* (1870) and *Patriarchs and Prophets* (1890) as well as a number of articles in Church periodicals. Generally speaking, in later versions terms like 'infidel geologists' are used more sparingly, if at all. Post-mortem compilations of White's works by others usually bypassed such vivid expressions of earlier years, although as late as 2004 her comments about 'infidel geologists' were reproduced exactly as they appeared in *The Signs of the Times* of March 20, 1879.¹

While now not so widely read, even by conservative Adventists, these very negative statements about geological thought fall on modern ears as being somewhat harsh and poorly informed.

Twenty-first century geologists would judge White's 1864 'infidel geologist' statements to be indiscriminate, undeserved, and irrelevant, since most professional geologists experience their discipline as a fully functional science which, while methodologically naturalistic, is not at all anti-religious in its intention.

In fact this was already largely so by the mid-nineteenth century. Geology had expanded and specialised so much on its journey towards becoming a mature science that its professionals found it impossible to pursue it within the perceived strait-jacket of the very brief Mosaic Genesis narratives. On both sides of the Atlantic many sincere Christian academics made the adjustment to the longer time scales implied by what they perceived to be unanswerable data, and without a sense of having compromised their strong theistic belief and practice. Rudwick terms the state of separation of geology from the traditional biblical narratives and time scales around the mid-nineteenth century as the "amicable disassociation".² However, many evangelicals continued to see geological theories as an attempt by the naturalist professionals to dictate new interpretations of the Genesis narratives that infringed on their doctrines.

THE "INFIDEL" METAPHOR

The word 'infidelity' was quite *en vogue* among orthodox Christians during the nineteenth century. Samuel

Johnson's authoritative English dictionary provides a mid-century description of an infidel as an unbeliever, miscreant [one that holds a false faith; one who believes in false gods; a vile wretch], pagan or one who rejects Christianity. Infidelity is articulated as: want of faith, disbelief of Christianity, treachery, and deceit.³ In 1867 the Primitive Methodist Magazine carried an article wherein it was suggested that an infidel is not just a person without faith but more especially an unbeliever in the strict Gospel sense of the word: not believing in Christ. For example, although Jews honoured God they did not believe in Christ, thus were unbelievers.⁴

The use of the condemning label 'infidel' became a tool for evangelicals to push harder for the authority of Scripture and to acquire more converts.⁵ Marty states that 'infidel' was a very commonly used term during the nineteenth century. Over the years the term would include the 'freethinker', 'agnostic', 'atheist', 'secularist' and other types of unbelievers.⁶

As popularly conceived, the typical infidel in the USA would challenge the growth of evangelical denominations after the separation of church and state. Marty suggests that such an infidel thrived on the reaction of the 'religious' majority.⁷ On the other hand, it is thought that the image of the infidel definitely helped to shape the nation's religious life in nineteenth

century America.⁸ Marty therefore suggests that the New England evangelical churches "found infidelity a convenient symbol for the furtherance of their claims."⁹ The image of the infidel could be used to advance the church's own purposes; it was a powerful mental picture or metaphor that spoke vividly to the imagination of congregations. The orthodox churches "conjured up the image of the infidel as a *contrast* to their position."¹⁰ For the Presbyterian leader Thomas DeWitt Talmage, who was considered by many to be a giant among the defenders of orthodoxy, infidelity "substituted nothing but untruth, blasphemy, unfairness, outrage, and meanness for the comforts it removed" and was "the friend of all that is impure."¹¹

Marty therefore suggests that the use of the infidel metaphor rose especially to prominence at those moments in American history when the churches were struggling with social or theological questions.¹² Situations that urged the church to react to new patterns of thought would certainly have included new scientific theories in geology and biology.

It is important to appreciate White's use of the term 'infidel geologists' and her other comments on nineteenth century geology within an adequate context of her time and while taking into account the particular circumstances of the early Adventists.

ELLEN WHITE'S RELIGIOUS BACKGROUND

Although the Harmon family had been Puritans for generations White's father, Robert Harmon, introduced the family to the Methodist Episcopal Church. As a consequence the young Ellen Harmon would inherit strict Puritan standards combined with Wesleyan Methodist teachings. Methodism had been the fastest growing denomination in the USA during the early nineteenth century and a Methodist background was thus at the time not uncommon; in fact 44% of the Millerite lecturers were also Methodist.¹³ Definite Methodist influences have been traced by Adventist historians in the writings of White and Adventism at large.¹⁴ Woodrow Whidden believes that through White the "Wesleyan tradition has been the most essential influence on Adventism."¹⁵ However, it is interesting to note that despite the strong early Methodist influences in White's early Christian life Adventism and Methodism would take predominantly different routes when it came to science and particularly with respect to geological theories.

Farrelly observes that in comparison with their Congregational, Presbyterian and Episcopalian contemporaries early Methodists were not well educated, and that the nineteenth century Methodists had a reputation for being somewhat anti-intellectual.¹⁶ However, she shows that this was not the complete picture and that during the

1830 – 1860 period Methodist ministers actually founded more than thirty colleges and universities and that there were strong currents within Methodism moving it away from anti-intellectualism.¹⁷ Farrelly indicates, for example, that there were Methodist ministers such as Henry Martyn Bannister who understood that "the discoveries of geologists would one day be accepted by all Christians."¹⁸ Bannister felt that the "conflict of geology is really not with Moses, but with a favourite, a cherished interpretation of Moses."¹⁹

Another huge influence on sabbatarian Adventists was, of course, William Miller,²⁰ to whose teachings the young White was first exposed in 1840. Early Seventh-day Adventists continued to apply Miller's common-sense approach and 'Rules of Interpretation' to Scripture as they expanded his end-time theology to embrace new elements such as the seventh-day Sabbath, as they perceived it to be incorporated within the three angels' message of Revelation 14.²¹ In 1884 White could still state, "Those who are engaged in proclaiming the third angel's message are searching the Scriptures upon the same plan that Father Miller adopted."²² They continued to emphasise Miller's doctrine of *Sola Scriptura* as their sole source. White, as the seminal figure in the growing Church, endorsed many of Miller's views and because of this validated their authority for members of the Seventh-day Adventist Church.²³ For example, in

many instances she demonstrates her dependence on Miller's Rules (for Bible study).²⁴ Clearly, these rules lay at the heart of White's understanding of genuine faith building and of her method for dealing with theological challenges. Further, her use of Miller's literal historicist interpretation of God's word strongly informed her views of the creation days and those of the flood.

EARLY SDA CONTEXT FOR GEOLOGY REFERENCES

The Sabbath

Perhaps the major reason for White's stance against what she perceived as the geological wisdom of her time was the seventh-day Sabbath. Joseph Bates had earlier come to see that an adherence to the fourth commandment, namely the seventh-day Sabbath was a necessity for complete salvation²⁵ and this had been accepted by White. Knight has observed that, "it is impossible to overemphasise the importance of Bates' contribution to the development of Sabbatarian Adventist theology".²⁶ According to Bates, all advent believers who "despise and reject this covenant (Sabbath) will just as certainly be burned and destroyed with the ungodly wicked at the desolation of the earth, as Isaiah has prophesied".²⁷

The perceived undermining of a literal, seven-day creation by the geologists was seen as being diametrically against this central doctrine of the

nascent denomination.²⁸ White had earlier, through the printed narratives of her early visions, warned the 'little flock' of the importance of obeying specifically the fourth commandment for reaching the Holy City.²⁹ Indeed, she would see in her January 5th, 1849 vision that saints who did not keep the Sabbath at the Holy City were wearing garments on which was written in large characters, "Thou art weighed in the balance, and found wanting."³⁰ Such messages left no doubt amongst the early Adventist believers over the extreme importance of honouring the seventh-day, Holy Sabbath.

Even after the passage of time had dulled the sense of imminent judgement, as it certainly did, the fear of modern geological theories has largely survived in the Seventh-day Adventist Church into the twenty-first century because they continue to be perceived as directly challenging the Sabbath.

The Second Coming

Evidence suggests that she was also greatly concerned that modern geology would undermine the Church's other central doctrine, that of the Second Advent of Christ. The doctrine of the second coming influenced her attitudes to geology in at least three ways. The first is closely connected to the point above. It is easy to understand that for the Adventist pioneers any supposed benefits accruing from an acceptance of old-age Earth theories were deemed totally insignificant compared to the

need to be ready for the soon coming Second Advent. Thus, the remnant little flock therefore *had* to be warned about the undermining influence of the theories of modern geologists. It should not be forgotten that Ellen Harmon herself had, in her early teenage years, experienced intense fear of eternally burning in hell because of not being able to enter Heaven.³¹

The second relates to the materials which would be used to fuel the violent destruction of this Earth to which the Second Coming would give rise. It seems from her work that a diminishing of the Noachian deluge was perceived as undermining the supply of the raw materials, mainly coal and oil resulting from it, which were to fuel the final conflagration, as well as its heralding earthquakes and volcanic eruptions.³²

There was a third, perhaps more subtle, way in which the early Adventist understanding of the Second Coming would affect attitudes to science. Because of the Sabbatarian Adventists' belief in the imminence of this event education was lightly valued and they certainly saw no need to establish their own schools during the 1850s and 1860s. Further, Church members had been almost exclusively drawn from uneducated circles. It is no surprise, then, that during the early decades of its existence the rapidly expanding Church lacked academically trained persons capable of understanding the

intricacies of the already complex epistemology of modern geology.

This attitude would begin to change as the denomination grew and additional workers needed to be trained to spread the Adventist message. Ellen White received her first education vision in January 1872.³³ But even when Battle Creek College opened in 1874 it was believed that short courses were sufficient for training church employees. With a still persistent belief in the imminent Second Advent, it was felt that degree programs were too time-consuming and laden with academic baggage. Thus they were deemed unnecessary for putting trained workers in the field.³⁴ Only towards the end of the century, when Adventism had become a world movement, would this attitude begin to change.

Great Controversy Theme

Her views on origins were also seen as an important part of her 'Great Controversy' meta-narrative, beginning before this Earth's creation and continuing until the final great consummation of all evil.³⁵ The perceived centrality of White's views on origins to this construct has been a major factor behind its resilience within Seventh-day Adventism.

POSSIBLE SOURCES INFORMING ELLEN WHITE'S GEOLOGY REFERENCES

From the publication of her first

books, much has been written about the recognition of textual fragments and concepts from other authors in White's writings. Although White always denied any literary borrowing, it is now well recognised across many circles that in many aspects she was a collaborative author who borrowed extensively from others.³⁶ It is not the aim of this paper to defend or deprecate this practice but simply to explore possible sources of White's ideas.

Source analysis in this instance is not an easy task as White had access to numerous sermons, devotional books, Bible society tracts, Bible commentaries and general Christian literature.³⁷ She was also able to read a full range of magazines that came to the *Review and Herald* office from other publishers. In addition, she had about 1,400 volumes available for her perusal in her personal and office libraries.³⁸

Secondarily, an attempt has also been made to recognise the datedness of any time-conditioned geological components, since this may have implications for their continued authoritative use in Adventism. Veltman observed in a personal postscript to his research that White's writings contain both time-conditioned and timeless statements and that there is a need to further investigate and differentiate these.³⁹ This paper has also endeavoured to identify elements in her text that linked geology with an emerging response to the concept of organic evolution.

Rather than simply presenting a list of authors in chronological order, an attempt has been made to differentiate these into two oppositional groups. The first three authors were chosen because of their major roles in the secularising of science over the period leading up to and during that in which White wrote. In effect they represent the case to which she makes such strenuous objection. The second group, from John Milton onwards, wrote works with which White would have resonated and which may have influenced both her thought development and word usage.

However, before examining the works of individual authors of possible significance it is important to note that White's writings on geology may reflect some of the common understandings of her day resulting from much publicised discoveries. An example of this is provided by her mention of "much larger men and beasts" which "once lived upon the earth" and "large, powerful animals", that "existed before the flood which do not now exist".⁴⁰

These claims must be seen in the context of eighteenth and nineteenth century discoveries in the United States. In 1705, a fist-size giant tooth and later also gigantic jawbones and other bones had been found along the Hudson River banks.⁴¹ American Protestants immediately connected these with Genesis 6:4, "There were giants in the earth those days." The giant

tooth was initially thought to belong to a human pre-Flood giant. The fossil bones were seen as archaeological evidence of Mosaic history supporting the veracity of the Flood and, with that, the inevitability of the millenarian final Conflagration. Although by the early nineteenth century it was clear to scientists that the bones were those of the Mastodon, a relative of the Mammoth, the belief that they were the remains of giant humans lingered much longer among the general public.

George Combe and Robert Chambers: An Emphasis on ‘Laws of Nature.’

Two works that may well have influenced White prior to her publication in 1864 of *Spiritual Gifts III*, would have been Combe’s *The Constitution of Man* and Chambers’ *Vestiges of the Natural History of Creation*. Combe and Chambers were both phrenologists and they believed in the importance of natural laws in the operation of the world.⁴² Combe was a founding member of the Edinburgh Phrenological Society and the most prolific British phrenologist of his time. Chambers became an enthusiastic phrenologist in the 1830s and his *Vestiges* did much to advance phrenological naturalist thought. Their books promoted the view that natural laws, rather than God, controlled the world and in a sense, they marked a transition to a new naturalistic era. Within that context, Darwin’s *Origin* would subsequently look at the specific role that natural

selection played within the origin of species.

Combe’s *The Constitution of Man* was first published in 1828. In general his book examines the operation of natural laws on man and society. Combe regarded natural laws as regularities of matter and mind which the Creator had instituted at the beginning. These natural laws included physical laws, organic laws (including the laws of hereditary descent) and also those of the moral and intellectual realms. He did not speak for current science and serious scientists of the day largely ignored his book. Conservative Christians also rejected the book, since they saw in it an attempt to replace God with natural laws,⁴³ promoting a non-Christian alternative narrative of the world. However, by the 1860s, *Constitution*’s sales had already reached around 200 000 in America; more than double the combined sales figures of *Vestiges* and *On the Origin of Species* during that period. The book remained continuously in print until 1899. Although often overlooked, its impact and influence were enormous.⁴⁴

Shortly after, whilst the Millerite Adventists were experiencing their Great Disappointment in 1844, the appearance of the anonymous *Vestiges* created another Victorian print sensation in Britain and America. The *Vestiges* was in essence a controversial synthesis of the natural sciences with some theology and moulded into a general

theory of creation.⁴⁵ The anonymity of its author did much to heighten the attraction of this (r)evolutionary book. The fact that it was written in a popularist style made it easy for the general public to digest. Although ideas about transmutation had been circulating for some time in academic circles, this was the first occasion that evolutionary ideas were brought into the public arena. It was the start of a secular public culture that would continue to grow during the second half of the nineteenth century.⁴⁶ Although recognising God as the initial Creator it promoted natural laws, rather than God's on-going acts, as guiding progress from the earliest nebulae all the way to the final destiny of the human race. Interestingly, the book nowhere mentions the term 'evolution'. However, for those that seriously perused the text, the evolutionary hypothesis was undoubtedly there.

The idea, then, which I form of the progress of organic life upon the globe – and the hypothesis is applicable to all similar theatres of vital being – is, *that the simplest and most primitive type, under a law to which that of like-production is subordinate, gave birth to the type next above it, that this again produced the next higher, and so on to the very highest, the stages of advance being in all cases very small – namely, from one species only to another; so that the phenomenon has always been*

of a simple and modest character.⁴⁷

It was Chambers' early phrenological influences which had propelled him to develop the progressive naturalist narrative of the *Vestiges*.⁴⁸ Not surprisingly, the Edinburgh phrenologists praised the book for promoting the evolution of animals and plants and its advocacy of law.⁴⁹ The Evangelicals in Scotland, on the other hand, were highly critical of the book and characterised it as "atheism under a Christian banner."⁵⁰ The Scottish Free Church also actively opposed *Vestiges*, which they perceived as based on false science.⁵¹ The Religious Tract Society joined this opposition through its series of evangelical monthly volumes. From 1845 it sold about 30,000 copies of each of the two parts of Thomas Dick's *Solar System* in the next five years.⁵² (Dick's contribution is discussed later in this paper.) The Society felt that the sceptical arguments of *Vestiges* especially endangered young Christian men.

In America, *Vestiges* created a similar sensation and, in the absence of international copyright law, it was reprinted freely there by at least four different publishers. As it went through about twenty editions, more copies were sold in total in the United States than in Great Britain. Interestingly, and although it might easily have been otherwise, *Vestiges* does not appear to have attracted explicit comment in the *Adventist Review and Herald* within its first decades. It was not mentioned

by name until 1940 when an associate editor, Spicer, opined with hindsight that the rising of the Advent message in 1844 had actually occurred to meet the challenge of the publication of Chambers' ideas of man's origins.⁵³ However, from their earliest years both the *Review and Herald* and *The Signs of the Times* frequently discussed the undesirable influence of "men of science" and their "laws of nature."⁵⁴ For example, the *Review and Herald* discussed "laws of nature" in its articles more than twice every year; with a definite increase after 1859 and another spike from the 1880s onward. Darwin's publication of *Origin* clearly triggered the first increase while the second spike was probably a reaction to the increased acceptance of a theistic form of evolution by bigger denominations with a more liberal approach. It is clear that early Sabbatarians were very much aware of, and threatened by, the new naturalist ideas.

Ellen G. White's chapter on 'Disguised Infidelity' in *Spiritual Gifts* discusses this matter implicitly. The publication of her panoramic vision of the creation days can be seen as an assuring, authoritative statement to confirm the literal Mosaic narrative in the light of threatening naturalistic, evolutionary ideas. Her brief references to men who "are upon a boundless ocean of uncertainty" and who "seek to account for God's creative works upon natural principles", clearly state her opposition to current secular progressive

theories.⁵⁵ Such references strongly suggest that contemporary theories of secular scientists influenced her work.

In 1904, when the church was dealing with a crisis surrounding J. H. Kellogg's alleged pantheism, Ellen White clearly articulated her aversion to the view that nature's laws could operate without God. She considered that to be false science.

In dwelling upon the laws of matter and the laws of nature, many lose sight of, if they do not deny, the continual and direct agency of God. They convey the idea that nature acts independently of God, having in and of itself its own limits and its own powers wherewith to work. In their minds there is a marked distinction between the natural and the supernatural. The natural is ascribed to ordinary causes, unconnected with the power of God. Vital power is attributed to matter, and nature is made a deity. It is supposed that matter is placed in certain relations and left to act from fixed laws with which God Himself cannot interfere; that nature is endowed with certain properties and placed subject to laws, and is then left to itself to obey these laws and perform the work originally commanded. This is false science; there is nothing in the word of God to sustain it. God does not annul His laws, but He is continually working through them,

using them as His instruments. They are not self-working. God is perpetually at work in nature. She is His servant, directed as He pleases. Nature in her work testifies of the intelligent presence and active agency of a being who moves in all His works according to His will.⁵⁶

Charles Darwin: Natural law (Natural Selection) and a Geologically Old Earth

On the Origin of Species was published in 1859 just before the official establishment of the Seventh-day Adventist Church. Darwin's arguments on natural selection relied heavily on Charles Lyell's old-Earth geological views. As we have seen, White first wrote on geology in 1864 with her chapter on 'Disguised infidelity' in volume three of *Spiritual Gifts* in which she strongly advocated a six thousand year-old Earth with a six day creation week. Hare takes the view that the timing of White's publication just a few years after Darwin's book on evolution does not seem to be a coincidence and that it was meant to counter his evolutionary ideas.⁵⁷

Building on the view of natural law promoted in books like *Vestiges*, Darwin promoted the mechanism of 'natural selection' as the driving force behind the diversification of life. The *Review and Herald* had on January 29, 1861 reprinted an article from *American Baptist* where Darwin's

term 'natural selection' was given as an example of 'laws of nature.'⁵⁸ Ellen White would most likely have read this front page article and her mention of men who "endeavour to explain from natural causes the work of creation," could be understood to indirectly refer to Darwin's theory. It should be remembered that Darwin was initially better known for his theories of 'descent with modification' and 'natural selection' than for 'evolution'. He did not make use of the latter term in *On the Origin of Species* until its sixth edition in 1872.

John Milton: Eyewitness Account of the Flood

John Milton's paraphrase of the Bible has enjoyed immense popularity for several centuries since its first publication in 1667. Its popularity during the eighteenth and nineteenth centuries can hardly be overestimated. Bernard Sharratt stresses the extent to which Milton's poem became appropriated over time; it was frequently memorised by public schoolboys and commonly selected as suitable Sunday reading by Christian households.⁵⁹ Its attraction lay largely in the vivid, eyewitness-like narration of the biblical story of the Fall of Man. Matthew Stallard states that "At times, Milton makes *Paradise Lost* sound so much like the Bible that one is convinced he/she is hearing the words of the Bible."⁶⁰ It is interesting to note that Milton claims in the beginning of *Paradise Lost* that he has been divinely inspired by the "Heav'nly

Muse" or Holy Spirit with knowledge of things unknowable to fallen humans. He considered himself to be the passive instrument "through whom flows the emanation from on high; his words are not entirely his own, but a suggestion."⁶¹ Most people in the nineteenth century would, indeed, have had difficulty in differentiating between their recollections from Moses and those from Milton, his principal paraphrast.⁶²

However, while *Paradise Lost* does contain many allusions to the Bible accounts, it also contains events that do not line up with it. Detail is added and characters given extended personalities so that the reader might better understand them. Milton's illuminating style of narrative was for many a welcome addition to the terse style of certain sections of the Bible. Where the Bible narrative is very condensed, as for example in the sections on the creation of the Earth in Genesis 1 (narrated in about 700 words) and the description of what happened during the Flood, as contained in just over a dozen verses within Genesis 7 and 8, Milton's extended and colourful descriptions became very popular additions or virtual substitutes. However, they remained his own constructions based on biblical allusions. These miltonesque interpretations would influence many people's understanding of biblical events from the late-seventeenth century onwards. Thomas H. Huxley once lamented in this context that the predominant, deeply ingrained but false, conception

of cosmogony which was so resistant to the conclusions of scientific research was, "derived from the seventh book of *Paradise Lost*, rather than from Genesis".⁶³

The similarity between text elements in *Paradise Lost* and White's writing has been discussed by several researchers. Patrick, for example, lists many observed textual similarities.⁶⁴ The choice of specific terms in Ellen White's writing, such as "cataracts of heaven" and "verdure," have a miltonesque ring but were equally used in other secondary sources and therefore cannot be used as indicators of material borrowed specifically from *Paradise Lost*. The most obvious similarities between *Paradise Lost* and *Spiritual Gifts* in phrases used are: "wicked ways"/"abominations"; "God's wrath to come"; "fountains of the deep broken up"; "spoiled verdure"; "powerful wind drying up the waters"; "rapid current"/"waters moved with great force"; "trees adrift"/"hills and mountains were formed of stones, trees and earth"; "boundless lake of water". It is principally the vivid descriptions giving a near-eyewitness account of the events in Milton's version that align most strongly with Ellen White's use of "I saw" and "I was shown" statements.

There are concepts in Milton's and White's narratives that are clearly time-conditioned. For example, the late-seventeenth century speculative concept of massive underground cavi-

ties where large quantities of water are stored and from which fountains of water could break forth, as described by savants such as Thomas Burnet, was no longer entertained by the mid-nineteenth century professional geologists of White's time.⁶⁵

John Wesley: Burning Mountains and Cities Swallowed Up

Johns discusses the possibility that White borrowed some of her terminology and concepts from John Wesley.⁶⁶ Johns notes that White's early training was in Methodism and that she was familiar with, for example, John Wesley's *Works* as she once quoted extensively from volume 3 of this in *The Great Controversy*.⁶⁷ Some parallels, as Johns has noted, suggest White's familiarity with Wesley's writing on earthquakes, not only in her books but also through her articles in the Adventist periodicals.⁶⁸

There are several evident parallel elements and concepts which Wesley's 'earthquake' sermon has in common with White's panoramic description of the causes of earthquakes and burning mountains after the Flood in *Spiritual Gifts III*. Wesley's "**hollow rumbling sound**" correlates with White's "**muffled thunder**"; "**the ground heaved and swelled like a rolling sea**" (Wesley) is almost identical to "**the ground heaves and swells like the waves of the sea**" (White); and "**whole cities, yea, mountains are swallowed up**" (Wesley) closely paral-

els "**sometimes cities, villages and burning mountains are swallowed up**" (White).⁶⁹ Similarly, Wesley's reference in another of his works to "**sulphur, or some other inflammable matter taking fire in the cavities of the earth**" expresses a similar meaning to White's "**large quantities of coal and oil**" which "**ignite and burn**". Wesley's "**cavities of the earth**" and the meeting of "**water and fire under the surface of the earth**" described by White and are both reminiscent of the common seventeenth century concepts of separate underground spaces filled with water and fire that combine in places.⁷⁰ Athanasius Kircher provides in his *Mundus Subterraneus* perhaps the best known pictures and descriptions of this concept.⁷¹ The close resemblance of the phrases in Wesley's work and White's metanarrative can hardly be coincidental.

Abraham Werner: Volcanoes Fuelled by Burning Coal

Johns also discusses the possibility that Ellen White may have borrowed from Werner the common eighteenth century concept of volcanic activity being the result of the burning of coal beds.⁷² Werner's *Kurze Klassifikation und Beschreibung der Verschiedenen Gebirgsarten*, 1787, (Short Classification and Description of the Various Rocks), was a truly fundamental geological publication for its time.⁷³ It was significant because, firstly, it contained in an incipient form the concept of a geological time scale and, secondly,

his simple scheme made it possible to readily extend this scale through the classification of local strata, into a single world-wide geological system. His scheme was easy to adapt and through the influence of his dedicated pupils became used throughout Europe and North America.

One of his followers, Professor Robert Jameson, the president of the Wernerian Natural History Society, became the main exponent of Werner's geological system in Great Britain. It was most probably through Jameson's students that Werner's system found its way to North America early in the nineteenth century. In 1809, for example, William Maclure published the first geological map of the United States based on Werner's classification and nomenclature.⁷⁴

The idea that there was a connection between the combustion of carbonaceous substances and volcanic eruptions was still a common notion in the eighteenth century. Werner had adopted this view from other geologists but it was through him that this notion became predominant in Europe.⁷⁵ In his scheme of rock classification he recognised two categories of volcanic rocks: true volcanic rocks or true lavas and, in addition, pumice and volcanic ash. He believed that the rocks of the second category, which he called pseudo-volcanic rocks, had been formed by the burning and melting of underground combustible material. 'Burning Mountains' would thus have

been regarded as pseudo-volcanoes.⁷⁶ However, in 1789 he published an article in Höpfner's *Magazine* that discussed the "highly probable conjecture that most, if not all, volcanoes arise from the combustion of underground seams of coal."⁷⁷

Werner suggested that the most vigorous volcanoes, or 'burning mountains', would have started through spontaneous combustion on the thickest seams of coal. In the process of supporting this belief, Werner not only pinpointed coal, but every kind of natural flammable material as fuel for subterranean fires.⁷⁸ He discusses the interference of water, sulphur and iron ore with burning coal seams and the formation of volcanoes in his 1789 article. Ellen White includes several parallels in her brief reference to coal and volcanoes in *Spiritual Gifts*:

God causes large quantities of coal and oil to ignite and burn. Rocks are intensely heated, limestone is burned, and iron ore melted. Water and fire under the surface meet. The action of water upon the limestone adds fury to the intense heat, and causes earthquakes, volcanoes and fiery issues.⁷⁹

While it is well known that spontaneous combustion of coal seams does occur and that it may produce long-lasting underground fires with visible smoke through cracks in the Earth's surface, this is no longer considered to

be a general cause for volcanoes and earthquakes. Ellen White's statement therefore has distinct time-dependent eighteenth century Wernerian connotations. While this does not necessarily mean that she had read Werner's works it appears to demonstrate that she was influenced by some of the contemporary scientific wisdom of earlier periods.

Certainly by 1864, when Ellen White published her panoramic vision narrative, the Wernerian concept of combustion of underground flammable materials as the most common causation of volcanoes and earthquakes had been completely abandoned by professional geologists in both Europe and America. The Adventist readers of her books and journal articles would not have been able to assess this.

Thomas Dick: A violent Flood, a Foreshadow of the Final Conflagration

On October 17, 1865, the *Review and Herald* editor who signed his articles with simply 'G.,' informed the readers that the writings of a Mr Thomas Dick, who had earned himself the sobriquet of the "Christian Philosopher," corroborated Ellen White's panoramic vision of the Flood in *Spiritual Gifts*, as published in 1864.⁸⁰ The editor saw it as a 'source of gratification' that divine truth was confirmed by the 'philosopher.' Thomas Dick's description of the violent deluge as a consequence of the wickedness of man indeed shows many

strong similarities with Ellen White's vision, yet it *predates* it by at least three decades.⁸¹ Was it possible that Ellen White's vision was influenced by Dick's writing? Could she have read it or heard about it?

Thomas Dick's works on popular science and natural theology experienced an immense circulation in the United States during the nineteenth century.⁸² Hundreds of thousands of Thomas Dick's books sold in America from their first publication in 1826 to well into the 1880s. His works seemed to perfectly complement antebellum America's sentiments of strong moralism and religiosity. In addition, his books provided a greatly valued source of useful knowledge.⁸³ The popularity of these Christian works apparently resulted in their inclusion in nearly every New England clergyman's library.⁸⁴ Most public libraries carried several copies of his books and, in addition, the books were extensively reviewed in American periodicals.⁸⁵ Reviewers in those periodicals paid special attention to Dick's contention that humanity's fall from grace had brought about punishments in the form of natural calamities such as earthquakes and tornadoes, whether or not they were in agreement with his claims.

Methodists were especially attracted to Dick's combination of robust Christian values with solid education.⁸⁶ White's deep Methodist roots may have contributed to her becoming familiar with

the writings of Dick. The editors of the *Review and Herald* were certainly familiar with him since between 1853 and the early 1870s alone they used brief quotations from his writings as fillers of small open spaces more than a dozen times.⁸⁷ His views concerning the importance of the fourth commandment were quoted several times in the periodical. For example, “This is a commandment which was never abrogated, and which never can be abrogated, in relation to any intelligent beings, so long as the creation exists, and so long as the universe remains as a memorial of his powers and intelligence.”⁸⁸ This emphasis on the importance of Sabbath would have resonated well with Adventist doctrines. The late-nineteenth century Adventist journal editor George Amadon called him on one occasion, “That profound thinker and deep reasoner, Dr. Thomas Dick, frequently known as ‘the Christian Philosopher,’ . . .”⁸⁹

Of special interest in the context of this paper are Thomas Dick’s descriptions of the violent nature of the Flood and its suggested connection with the wickedness of man as clearly stated in his *Philosophy of Religion and The Christian Philosopher*. What similarities and differences exist between Thomas Dick and Ellen White’s panoramic Flood vision and its implications for the wickedness of fallen humanity?

In his *Philosophy of Religion* Dick related how the, “**fountains of the great**

deep were broken up, the **cataracts** of heaven were opened, and the whole solid crust of our globe received such a shock as rent the **mountains** asunder, and **hurled them into the plains**”. He also noted that during the Flood, “**dreadful explosions** resounded”, and that “mighty waters **hurled their billows . . . in every direction**, rolling immense **rocks**. . .”⁹⁰ In *Spiritual Gifts III* White at times used similar language. She writes that during the flood, “water seemed to come from heaven like mighty **cataracts**”, that “the **foundations of the great deep also were broken up**” and that “**rocks and earth were hurled in every direction**”. Further, she refers to trees “**hurled**, with stones and earth, into the swelling, boiling **billows**”.⁹¹

A more detailed account of the consequences of “the wrath of Heaven against the ungodliness and unrighteousness of men” can be found in *The Christian Philosopher*, where Dick outlines several supporting facts.⁹² Firstly he describes the marks of ruin, convulsion, and disorder visible in the interior strata of the Earth as evidence of a moral revolution – the Flood – that occurred since man was placed on Earth. The twisted and convulsed rock strata provide a “visual memorial that man has rebelled against the authority of his Maker”. Secondly, he is convinced that the existence of volcanoes and their violent actions “accompanied with thunder, lightning, frequent concussions of the earth, and

dreadful subterraneous bellowings”, are a testimony to man’s depraved intelligence. Thirdly, Dick refers to the ravages produced by earthquakes. He is convinced that thousands of human beings died because “they belonged to a race of apostate intelligences, who had violated the commands of their Creator”. And, finally, he refers in similar vein to the effects of thunderstorms, tempests and hurricanes.⁹³

Dick is convinced that the discoveries of sciences such as the geology of volcanoes and earthquakes give an illustration of, and support for, the doctrine of the General Conflagration. The “Sacred Oracle” predicts that a period is approaching, when “the elements shall melt with fervent heat, and the earth, and the works that are therein, shall be burned up”.⁹⁴ He makes a strong connection between protology, concerned with the origin of the Earth and mankind, and eschatology, concerned with the end of the world and mankind. In his description of the Flood he emphasised violent natural elements more typical of the biblical narrative of the end of the world.

In her vision of the Flood White includes similar extra-biblical elements. The burning of coal and oil formed after uprooted trees were buried during the Flood would cause an increase in the occurrence of “**earthquakes, volcanoes, fiery issues**”, and underground “**thunder**” towards “**the end of the world**”. She similarly views what

happened during the Flood as a sign of a notable increase of natural disasters just before the coming of Christ and the end of the world. “**Greater wonders than have yet been seen will be witnessed by those upon the earth a short period previous to the coming of Christ. . . . And there were voices and thunders and lightnings, and there was a great earthquake, such as was not since men were upon the earth, so mighty an earthquake and so great**”.⁹⁵ It is interesting to note that after her 1864 publication of this panoramic vision of the Flood, there followed a noticeable increase in the reporting of earthquakes in the *Review and Herald*.

Martyn Paine: Mountain Tops Removed and Coal’s Scriptural Significance

In 1856, a lengthy article by the American literalist or scriptural geologist Martyn Paine, published in *The Protestant Episcopal Quarterly Review*, contains a number of elements that are equally pertinent to White’s panoramic flood description.⁹⁶ Paine and White concurred on the removal of mountain tops due to the Flood, the burial of the forests by the eroded materials, and the causation of volcanoes by chemical reactions such as the burning of coal. In many ways Paine’s pejoratively intended term ‘theoretical’ geology equated with White’s depiction of ‘infidel’ geology. Since no human observer had witnessed the actual deposition of geological strata, geol-

ogy was only theoretical.⁹⁷ The use of this term also reflected a distrust of non-Baconian science. The Bible, in contrast, offered an infallible account. Paine thought that such theoretical geology therefore “opened the door for a wide-spread infidelity.”⁹⁸

Martyn Paine (1794-1877) was the Episcopalian professor of medicine at the University of the City of New York. He left no doubt about his literal understanding of the narratives of creation and the deluge.⁹⁹ Paine showed his support for fellow scriptural geologist David Lord’s *Geognosy* which he thought was written “in a spirit of forbearance and courtesy.” He noted Lord’s conclusion that “geology is not a science, and never can become one.”¹⁰⁰ Paine’s aim was to further expose any pretension of harmonising geology with divine revelation.

For Paine the coal formations of the Carboniferous were evidence of the ability of the Flood to dislodge the luxuriant antediluvian vegetation and deposit the layers of vegetation debris with strata of reworked sediment.¹⁰¹ This concept of the geological action of the Flood was not novel; the well-known medical practitioner and amateur geologist James Parkinson, for example, had in 1804 published a very similar account of the deposition of organic matter during the Flood. Parkinson narrates the conditions as follows:

When the waters attained a substantial height, there were “rushing torrents from valley to valley, breaking down, or surmounting every intervening obstacle; and laying prostrate the vast forests with which the surface was everywhere clothed. . . . the waters urged by violent tempests, and agitated by receiving the immense fragments of falling mountains . . . [and] by the force of the tempestuous winds, . . . large projecting and dependent portions of mountains, by their newly produced forests, would frequently be sinking in the surrounding waters.”¹⁰²

He further hypothesised the “transmutation” of the vegetable matter through chemical changes (‘fermentation’) into coal.¹⁰³ During his times, Parkinson’s popular books bridged a gap between the more academically orientated savants and those who simply collected fossils. His early century audience was quite familiar and comfortable with the religious context of his writings.¹⁰⁴

White’s account of what she had seen in vision shows great similarities with Paine’s writings:

In some places large quantities of these immense trees were thrown together and covered with stones and earth by the commotions of the flood. They have since petrified and become coal, which accounts for the large coal beds

which are now found.¹⁰⁵

Paine further alluded to the disappearance of the hills from above the surface of the ground as another immense proof of the catastrophic deluge. White equally described the removal of mountain tops and the formation of huge hills and high mountains, although she attributes this more to strong winds drying up the flood waters.¹⁰⁶ Paine further spoke out strongly against the periods of long indefinite periods that geologists require for the creation of the Earth and instead he took time to explain that the six creation days were of natural duration as unambiguously confirmed by the fourth commandment.¹⁰⁷ White similarly stated:

The weekly cycle of seven literal days, six for labor, and the seventh for rest, which has been preserved and brought down through Bible history, originated in the great facts of the first seven days. . . . But the infidel supposition, that the events of the first week required seven vast, indefinite periods for their accomplishment, strikes directly at the foundation of the Sabbath of the fourth commandment.¹⁰⁸

As noted earlier, the publication of the *Protestant Episcopal Quarterly Review* with Paine's article predated White's *Scriptural Gifts* by about eight years. White's narrative contains

similar elements such as: an emphasis on the literal twenty-four hour days of creation linked to the fourth commandment, the violent removal of mountain tops and forests, and the connection between volcanoes and coal. In addition she provides the vividness of an eyewitness' account. To Paine, the coal formations establish the occurrence of the general deluge, and "do more for the triumph of the Bible than any other event."¹⁰⁹ Similarly, Ellen White stated that men, beasts, and trees buried in the earth at the time of the flood were preserved as evidence of its occurrence and its discovery would establish faith in biblical history.¹¹⁰

Paine recognised a greater force due to the recession of the waters of the deluge than for the rise of the waters.¹¹¹ White similarly saw a greater geological activity during the final stages of the deluge when a tempest aids the recession of the waters. White narrated the uprooting of antediluvian "immense forests" which were torn up at the time of the flood and buried in the earth.¹¹² Floating mats or rafts of vegetation were not a novel idea but had been put forward for example by Williams in 1789, Parkinson in 1804, and Penn in 1825 prior to Paine in 1856.¹¹³

White and Paine differed on other interpretations. While Paine saw the coal formations specifically as evidence of the Flood, White suggested that all rock strata were laid down during the

Flood. By the time they were written the catastrophic geological deluge accounts of both Paine and White were totally out of step with the contemporary interpretations of field evidence by professional geologists. Such antiquated apologetic geological accounts were, in the eyes of most nineteenth century professional geologists, simply vestigial remains of seventeenth and eighteenth century Mosaic natural history explanations.

SUBSEQUENT DEVELOPMENT

While her earlier works, such as *Spiritual Gifts* were written for the guidance of the “little flock” of fellow Adventists, publications after 1888 were written with the wider Christian audience in mind.¹¹⁴ Accordingly, there are notable differences in both content and style between *Spiritual Gifts* (1864), *The Spirit of Prophecy* (1870), and *Patriarchs and Prophets* (1890).

Content

Between *Spiritual Gifts* and *Patriarchs and Prophets* there are noticeable differences in content, particularly in those sections concerning the creation week and the Flood. For example, although not strictly geological references, the controversial ‘amalgamation’ statements¹¹⁵ which seemed to imply interbreeding between animals and humans were simply removed from all later reworkings. To the knowledge of the authors no reasons for these deletions were ever given. Further, in

her later books she largely eliminated phrases such as, “I saw” and “I was shown”, which might have invited misunderstanding or distrust on the part of a non-Adventist readership. There were also some sceptical Adventists who were known to be uncomfortable with her prophetic status. There is also a decreased use of the terms ‘infidel’ and ‘infidelity’. This fits with a general trend that Marty observed towards the early twentieth century in religious literature in America, when Christianity and its antagonists allowed each other increasing space for a more profitable, honest and intelligent interaction.¹¹⁶

A number of things do not change over this period. A comparison of her treatments of geological facts and processes in *Spiritual Gifts* and *Patriarchs and Prophets*, shows virtually no development in her understanding of geological concepts. Twenty-five years after first putting pen to paper on this topic, White appears to have retained her views on the origin of earthquakes and volcanoes. New scientific insights are not incorporated into later versions. She does, however, speak out more strongly against the naturalist methodology of the men of science which, according to her, is “false science”. She remains convinced that human science cannot search out the secrets of the Most High which He has never revealed to men. She seems to imply that only [prophetic] inspiration – as she experienced – can add knowledge to the history of the Flood, not geolo-

gists. To her, plain scriptural facts are more reliable than the suppositions of geologists.

It is interesting to note that, even in 1890, some 18 years after Darwin's first use of the term, Ellen White does not explicitly mention the term 'evolution', or even the terms 'descent with modification' or 'natural selection' in *Patriarchs and Prophets*. This provides evidence that to some extent her main emphases may have remained fixated on the understandably more geological concerns of the 1850s and 60s. Darwin first published in 1859 and it was probably some time until discussions over 'descent with modification' and 'natural selection' surfaced in Ellen White's circles. She does, of course, lament the fact that professed Christians accept the work of creation as the result of natural causes and this may be understood to refer to the increasing popularity of evolution at the time. Certainly, her denial of the vast, indefinite periods of time put forward by geologists in place of six literal days would eliminate the possibility of creation by these natural causes.

Style

As has been widely noted, there is a clear change in writing style from *Spiritual Gifts* through *The Spirit of Prophecy* to *Patriarchs and Prophets*.¹¹⁷ The former was characterised by a simple narrative style, with vivid and compelling short sentences and predominant use of the past tense,

conveying the sense that she is reporting what she saw. In the 1870 version there is more use of a vivid present tense where narrative detail is added and the emotional state of the great controversy characters is brought out more strongly. There is also greater use of adjectives, adverbs, and additional clauses. By 1890 the style is transformed again. Narrative detail has largely given way to moral exhortation. The style has become less vivid, containing more future tenses with dependent clauses of time and purpose. An increase in abstract nouns, more use of the passive voice, and impersonal constructions have also been noted.¹¹⁸ The vividness of the earlier versions that linked it so much to John Milton's compelling style in *Paradise Lost* is diminished. This change in style is explained by Bull and Lockhart as due to the improved literacy skills of the author and also possibly to the greater influence of White's editorial assistants who helped in the preparation of her written material.¹¹⁹

CONCLUSION

White's view of scientific methodology reflects the deep chasm that had developed between the knowledge-accumulating research activities based on the testing of working hypotheses, the method increasingly used by practising professional geologists, and the strict factual Baconianism which continued to be favoured by conservative Christian groups. White considered geology as conventionally practiced,

to be false science because it did not accommodate the biblical Mosaic narrative; it did not consider supernatural events and because its use of assumptions was not perceived as being truly factual. The Bible, in comparison, was based on facts and provided truth. Where she saw disagreement between the results of the naturalist methodology and her interpretation of Scripture, she considered that to be the result of false science, of which the people had to be warned.

White's use of what was by then anachronistic geological views suggests that, even if aware of them, she did not intend to reflect the state of contemporary mid-nineteenth century thinking. Instead, it seems, she used older ideas with which she was familiar and that could easily be understood by the general public. There were no novel insights in her geological phrasings. Although she expressed criticism of the "infidel geologists' claim that the world is much older than the Bible record makes it," it may be that her geological statements were not meant to reveal new understanding of future scientific, geological thinking but, in the context of her time, simply to emphasise the importance and urgency of end time events for the Adventist believers.

QUESTIONS

1. What are the advantages of a prophetic message which is couched essentially in the language of the

time? What are the disadvantages? What are the possible implications if the language is actually behind the times, although still recognisable?

2. The language of later editions of Ellen White's statements on Origins issues were typically softened compared to her statements of 1864. How are such changes of style best understood?
3. How do you think Ellen White would react today to the now well established, and very successful, science of geology?
4. Thomas Dick regarded the twisted and convulsed rock strata as a "visual memorial that man has rebelled against the authority of his Maker". Is such a view defensible today, given our better understanding of tectonic processes deep inside the Earth and within its crust? Does the fact that these same attributes of disorder and violence can also be seen in space, presumably beyond the effects of a human "fall", affect the answer to this question?

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- ¹⁰ *Ibid.*, 15.
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- ²¹ *Ibid.*, 175.
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³⁸ Patrick, A. N. (2014). *op cit.*, 96.

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⁵⁰ *Ibid.*, 274.

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⁶⁷ *Ibid.*, 9; Also see White, E. G. (1888). *The Great Controversy*. Mountain View, CA: Pacific Press Publishing Association, 258-60, 385, 386.

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⁷⁸ Geikie, A. (1901). *op cit.*, 124.

⁷⁹ White, E. G. (1864). *op cit.*, 79.

⁸⁰ Anonymous editorial [G.], (1865). The Mighty Convulsions at the Flood. *Review and Herald*, 26(20) (October 17), 156-7. It appears that during the absence for health reasons of Uriah Smith, the resident editor, this being concurrent with James White's treatment for a severe stroke, George Amadon took care of Smith's editorial duties from August to December 1865 and signed articles that he placed for him in the *Review and Herald* with 'G.'.

⁸¹ Dick, T. (1833). *The Philosophy of Religion: Or an Illustration of the Moral Laws of the Universe*. Philadelphia: Key & Biddle, 57.

⁸² Bozeman, T. D. (1977). *Protestants in an Age of Science*. Chapel Hill: The University of North Caro-

lina Press, 59.

⁸³ Astore, W. J. (2001). *Observing God: Thomas Dick, Evangelicalism, and Popular Science in Victorian Britain and America*. Aldershot: Ashgate Publishing, 171-4.

⁸⁴ *Ibid.*, 186.

⁸⁵ *Ibid.*, 182.

⁸⁶ *Ibid.*, 176.

⁸⁷ Based on a quick word search in the *Review and Herald* Archive. Sometimes the quoted sections would be more extensive, as in Anonymous editorial: [Smith, U.] (1868). Antediluvian Remains. *Review and Herald*, 31(8), (February 4), 117.

⁸⁸ Cornell, M. E. (1864). Sabbath Discussion. *Review and Herald*, 23(15), (March 8), 114; Lamont, J. (1873). They Say, and Do Not. *Review and Herald*, 42(12), (September 2), 91.

⁸⁹ Amadon, G. W. (1876). The Society of Heaven. *Review and Herald*, 48(20), (November 16), 154.

⁹⁰ Dick, T. (1833). *op cit.*, 57.

⁹¹ White, E. G. (1864). *op cit.*, 69-72.

⁹² Dick, T. (1828). *The Christian Philosopher; Or, the Connection of Science and Philosophy with Religion*. Brookfield, MA: E & G Merriam, 313-22.

⁹³ *Ibid.*, 313-22.

⁹⁴ *Ibid.*, 325.

⁹⁵ White, E. G. (1864). *op cit.*, 69-82.

⁹⁶ Paine, M. (1856). A Review of Theoretical Geology. *The Protestant Episcopal Quarterly Review and*

Church Register III, no. II. (April), 161-281.

⁹⁷ Stiling, R. L. (1999). "Scriptural Geology in America", in Livingstone, D. N., Hart, D. G. and Noll, M. A. eds, (1999). *Evangelicals and Science in Historical Perspective*. Oxford: Oxford University Press, 184.

⁹⁸ Paine, M. (1856). *op cit.*, 171.

⁹⁹ Rupke, N. A. (2012). "Five Discourses of Bible and Science 1750-2000," in Buchwald, J. Z. (ed.). (2012). *A Master of Science History: Essays in Honor of Charles Coulston Gillispie*. Dordrecht: Springer, 184.

¹⁰⁰ Paine, M. (1856). *op cit.*, 163.

¹⁰¹ *Ibid.*, 163.

¹⁰² Parkinson, J. (1804). *Organic Remains of a Former World. An examination of the Mineralized Remains of the Vegetables and Animals of the Antediluvian World; Generally termed Extraneous Fossils, Volume I*. London: J. Robson, 257-60. Parkinson's name would eventually be attached to the degenerative medical condition that he had described as 'Shaking Palsy.'

¹⁰³ *Ibid.*, 253. For his description of the fermentation process see pages 183-4.

¹⁰⁴ Lewis, C. L. E. (2009). "'Our Favourite Science': Lord Bute and James Parkinson searching for a Theory of the Earth," in Kölbl-Ebert, M. (ed) (2009). *Geology and Religion: A History of Harmony and Hostility*, (2009). Special Publications 310. London: The Geological Society, 123.

¹⁰⁵ White, E. G. (1864). *op cit.*, 79.

¹⁰⁶ *Ibid.*, 77, 78.

- ¹⁰⁷ Paine, M. (1856). *op cit.*, 188.
- ¹⁰⁸ White, E. G. (1864). *op cit.*, 90,91.
- ¹⁰⁹ Paine, M. (1856). *op cit.*, 280.
- ¹¹⁰ White, E. G. (1864). *op cit.*, 95.
- ¹¹¹ Paine, M. (1856). *op cit.*, 229.
- ¹¹² White, E. G. (1864). *op cit.*, 79.
- ¹¹³ Lynch, J. M. (2002). “‘Follies of the Present Day’: Scriptural Geology from 1817 to 1857.” <http://jmlynch.wordpress.com/2010/06/03/follies-of-the-present-day-scriptural-geology-from-1817-1857/> (21/11/2014). (This is a lightly edited version of the Introduction to Lynch, J. M. (2002). *Creationism and Scriptural Geology, 1817-1857*. Bristol, UK: Thoemmes Press.) Also Penn, G. (1825). *A Comparative Estimate of the Mineral and Mosaical Geologies. Volume II*, 2nd edition. London: James Duncan, 93, 94.
- ¹¹⁴ Patrick, A. N. (2012). Private correspondence.
- ¹¹⁵ White, E. G. (1864). *op cit.*, 64, 75. These “amalgamation” statements were some of White’s earliest comments on speciation. She appears to claim that humans and animals interbred, both before and after the Flood. Much discussion and controversy surrounded them from the time of writing.
- ¹¹⁶ Marty, M. (2013). *op cit.*, 16.
- ¹¹⁷ Thompson, A. (1981). From Sinai to Golgotha, part V: the Theology of Ellen G. White: the Great Controversy Story. *Adventist Review*, (December 31), 158. Also Bull, M. and Lockhart, K. (2007). *Seeking a Sanctuary: Seventh-day Adventism and the American Dream*, 2nd ed. Bloomington, IN: Indiana University Press, 24, 25.
- ¹¹⁸ Bull, M. and Lockhart, K. (2007). *Seeking a Sanctuary: Seventh-day Adventism and the American Dream*, 2nd ed. Bloomington, IN: Indiana University Press, 24, 25.
- ¹¹⁹ *Ibid.*, 24, 25.