

Scriptural Geology, Then and Now

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Abstract

The scriptural geology (SG) movement is described by historians as a reaction among both scientists and theologians to the long-ages models being proposed by geologists in the early nineteenth century. Specifically, it occupied the period of 1820 to 1860 after which time the movement essentially died out until revived by George McCready Price and the modern creationist movement of the twentieth century. Possible reasons for the precipitous decline of scriptural geology after the 1850s are explored. Historians have noted remarkable similarities between scriptural geology (SG) and the modern creationist movement (popularly known as young-earth creationism or YEC). Most of the basic issues have not dramatically changed in the last 150 years and more. A review of the more important issues in the SG movement can prove very helpful in resolving parallel issues being grappled with by YEC scholars today. One issue that caused the most diverse opinions among SG was where to place the biblical Flood in the geological record. This remains one of the most hotly debated issues among creationist geologists today.

Keywords: days of creation, geological column, scriptural geology, catastrophist geology, biblical geology, Flood geology, uniformitarianism, ice age, diluvium, appearance of age, ex nihilo, gap theory, stratigraphy, primary, secondary, tertiary.

Introduction

The best source for understanding the SG movement as a reaction against old-earth creationism is Terry Mortenson's doctoral dissertation, "British Scriptural Geologists in the First Half of the Nineteenth Century" (Mortenson 1996). This was republished in abridged form as *The Great Turning Point* (Mortenson 2004) and has been serialized with some individual chapters published in the *Journal of Creation* and subsequently posted on the creation.com website.

The SG movement flourished from about 1820 to 1860. The first modern historian of science to highlight the SG movement was Milton Millhauser writing in the history of science journal *Osiris* (Millhauser 1954). A recent review of historical works assessing the SG movement by Richard Perry Tison (2008) is found in the introduction to his dissertation on two American SGs, the Lord brothers. As noted by Tison, most historians since 1954 have treated the SGs negatively. One rare positive assessment of the SG movement has been published by the non-creationist Robert O'Connor (2007). Viewed by the standards of their day SGs, in most cases, were scholars in their own right and their views should not be disparaged. The salient features of early nineteenth century SG are still relevant for illuminating similar issues faced by young-earth creationists (YECs) today. Many issues addressed by these early Bible-believing scientists and theologians are still being faced in parallel ways by today's creationists.

Principles of Scriptural Geology

The following operating principles for the SG movement have been synthesized largely from the writings of Terry Mortenson, whose specialty is the early history of modern creationism, as well as from the writings of early SGs not analyzed or summarized by Mortenson:

1. Without exception, the Creation account is interpreted as both literal and historical, which means that the days of Creation were literal days, not long ages or symbolic days.
2. The fourth commandment (Ex. 20:8–11), which is mentioned by the large majority of scriptural geologists, is considered to be one of the best evidences for the literal nature of Creation days.
3. The age of life on earth is assumed to be about 6000 to 7000 years on the basis of the Genesis genealogies, but scriptural geologists did not discuss genealogies. They followed either the shorter Masoretic (Hebrew) chronology or the longer Septuagint (Greek) chronology, which were calculated without gaps, to obtain an age for the earth and its life.
4. Uniformly, scriptural geologists viewed Scripture as being absolutely trustworthy, even in areas of science that are briefly touched upon. Since the Word and the works of have the same Author, scriptural geologists concluded that the two must always be in agreement.
5. All scriptural geologists generally accepted the "facts" of geology as being valid. Scriptural

geologists also accepted the overall consistency of a geological sequence wherever studied, but what was questioned was the amount of time attributed to each fossil-bearing rock formation.

6. The only two events during which the “laws of nature” did not operate exactly as now are Creation and the Flood. At all other times nature has operated within the confines of natural laws as we observe them operating today. Extreme forms of uniformitarianism—the idea that geological processes and their rates are invariant throughout earth history—were rejected.
7. A few scriptural geologists viewed the foundations of the earth as having been in existence prior to Day 1 of Creation, but the majority viewed the foundations or the rocks below fossil-bearing rocks to have come into existence during Creation Week, not after Creation Week or during the Flood.
8. The Bible depicts a literal Adam and Eve, from whom all human beings have descended. There were no pre-Adamites.
9. The Fall was historical and affected all of humankind. Some scriptural geologists reasoned that a world pronounced “very good” is a good argument against long-ages geology and animal predation prior to the Fall. But some of the lowermost invertebrate fossil beds could have formed in a hypothetical “without form and void” period before Day 1 of Creation, according to a small minority.
10. Unanimously scriptural geologists considered the Deluge to have been universal (that is, global), having left a catastrophic impact upon the earth’s strata and thus was not tranquil in effect. There was disagreement however on where the pre-Flood/Flood boundary and the Flood/post-Flood boundary were in the rock record.

The above list may not be complete, but it does set forth adequately the principles for a biblically based approach useful for solving issues in creationist studies today. The second part of the tenth point had the most disagreement among SGs (hereafter denoted as SGs). The major disagreement was over which strata should be assigned to the Flood and minor disagreement was over the source for the Flood waters. The predominant view for the source of Flood waters was that the seabeds were elevated dramatically, flooding continents with seawater. The net result was the belief that today’s land surfaces were once ocean bottoms and the antediluvian land surfaces have been completely covered by today’s oceans. The alternate view was that water stored in subterranean caverns and narrow passages erupted to the surface, flooding the land from below. Another view was that the land surface was intensely fractured at the Flood and fell into the “abyss” below. In all cases the Flood was a miraculous event.

Scriptural Geology and the Placement of the Flood

The most hotly contested question among SGs was the question of where to put the Flood in the geological record, or more accurately where to insert all of the geological record into the biblical record of Genesis 1–11. Little by little SGs shifted the Flood higher and higher in the geological column until there were almost no rock formations that could be assigned to the Flood. A few even assigned the lowest strata to a possible “without form and void” period of Genesis 1:2 in attempting to squeeze the entire geological column into the scriptural record. The most radical solution was to relegate some or all of the fossiliferous deposits to Creation Week while attempting to defend the literal nature of the creation days.

By far the large majority of SGs who commented specifically on the geological strata accepted the sequence of primary, secondary, and tertiary as being valid (Mortenson 1996, 422)—Primary being equivalent to today’s Archean and Proterozoic Eons, Secondary being upper Paleozoic through Mesozoic Eras, and Tertiary being equivalent to the Cenozoic Era. The post-Tertiary formations were assigned to the Diluvium, which is now labeled as Quaternary and includes the Pleistocene, and early on was thought to be connected to the Noachian Deluge. Yet SGs differed as to where in those strata to assign the Flood, just as some of today’s Flood geologists differ. As no fossils were known from the time from the Primary, nearly all SGs assigned the Primary to Creation Week. A fourth period, which was added later, the Transition, or lowest Secondary, was usually placed either before Creation Week or in the early antediluvian period by SGs, but in a few cases even during Creation Week. The boundary between the Secondary and Tertiary is the equivalent to today’s Cretaceous-Tertiary (K-T or K-Pg) boundary, which is generally linked to the demise of the dinosaurs. (For a tabular depiction of these stratigraphic terms as used by SGs and linked to modern terms, see Fig. 1)

The majority of SGs assigned most or all of the Tertiary to the year of the Flood, but one SG, Frederick Nolan, did not incorporate any of the Tertiary within the Flood year. For him the reason was that the Tertiary was composed of basin formations having “no evidence of a catastrophe by which the entire earth was affected” (Nolan 1833, 243). He could not harmonize the Tertiary evidences with a *global* Flood. For him the Tertiary exhibited local, post-Flood catastrophes (an idea accepted by many Flood geologists today). According to his reckoning, the Flood started with the base of the Transition (today’s Cambrian), so that he is one of perhaps only two SGs to put the Transition in the Flood year. His book was part of the famous nineteenth century Bampton

Geological Column (Oldest to Youngest):			Scriptural Geologists (and Dates):		
Primary	Transition	Secondary (A)*	Secondary (B)**	Tertiary (C)	Diluvium (D)***
	Fl.-----	Frederick Nolan (1833)-----	----->		
		Fl.-----	Thomas Gisborne (1837)-----	----->	
		Fl.-----	William Cockburn (1844)-----	----->	
		Fl.-----	George Bugg (1826–1827)-----	----->	
		Fl.-----	George Fairholme (1833)-----	----->	
		Fl.-----	William E. Tayler (1857)-----	----->	
<-----	Pre-Cr.----		Fl.-----	George Bugg (1838, 1839)-----	----->
			Fl.-----	George Fairholme (1837)-----	----->
			Fl.-----	Granville Penn (1822, 1825)-----	----->
			Fl.-----	William Martin (1834)-----	----->
<-----	Pre-Cr.-----		Fl.-----	James I. Holmes (1856)-----	----->
<--Pre-Cr.->				Fl.---	Sharon Turner (1832)----->
<--Pre-Cr.->				Fl.---	William Rhind (1838)----->
				Fl.---	Wm. Cuninghame (1841)----->
<--Pre-Cr.->				Fl.---	J. L. Comstock (1841)----->
				Fl.---	Hiram Chase (1849)----->
				Fl.---	William E. Tayler (1846)----->
<--Pre-Cr.->				Fl.---	Thomas Hutton (1850)----->
				Fl.---	David Lord (1855)----->
				James M. Brown (1829):	Fl.----->
				Andrew Ure (1829):	Fl.----->
				Henry Browne (1837):	Fl.----->
				Samuel Best (1837):	Fl.----->
				John Murray (1837):	Fl.----->
				James A. Smith (1857):	Fl.----->

* Upper Paleozoic (today's terminology)

** Mesozoic (today's terminology)

*** Pleistocene (today's terminology)

Note: Only one SG, who was really not a geologist, but a theologian, put the entire fossil-bearing portion of the geological column in the Flood. Eight scriptural geologists put some or all of the secondary in the Flood. Twelve SGs ascribed the secondary to the antediluvian period and put the Flood either in the Tertiary or in the Recent periods.

Fig. 1. Placement of the Flood (Fl.) by scriptural geologists (1820–1860).

lecture series held at Oxford University and was highly respected and widely read. The other SG who put the Transition in the Flood was George Young (1828), who initially assigned all of fossil record in the Flood, but by the time he published his 1838 work, which was revised in 1840, he interpreted the Transition as part of the “primordial” oceans forming deposits of clay, sand, and lime prior to the Flood (Young 1840, 47). After 1828 we could not identify any SG who put the entire fossil record in the year of the Flood.

Six SGs had the Flood start above the Transition in what is known as the mid-Paleozoic (see Group

A in fig. 1): Thomas Gisborne (1837), William Cockburn (1840, 1844), George Bugg (Anon. 1826–1827), George Fairholme (1833), William Elfe Tayler (Anon. 1857), and George Young (1838, 1840). Five SGs started the Flood midway up in the Secondary formations, probably in the lower Mesozoic (see Group B in fig. 1): George Bugg (Biblicus Delvinus, 1838, 1839), George Fairholme (1837), who changed his mind on the placement of the Flood,¹ Granville Penn (1822, 1825), William Martin (1834), and James Ivory Holmes (1856). Eight SGs examined in our study placed the Flood exclusively in the Tertiary and Diluvium (Group C in fig. 1): Sharon

¹ In 1833 Fairholme clearly assigned coal formations of the Secondary to the work of the Flood, but in 1837 (386) he admitted his mistake in adopting “the diluvial origin of coal.” Coal in Great Britain was assigned to the Secondary period, which for Fairholme was treated as antediluvian in his 1837 work. Contemporary writers on geology recognized the fact that Fairholme assigned the Secondary to the antediluvian period and the Tertiary to the Deluge. See, for example, Olmstead (1853, 153–154).

Turner (1832),² William Rhind (1838, 1848, 1855),³ William Cuninghame (1841), J.L. Comstock (1841), Hiram Chase (1849), Thomas Hutton (1850),⁴ David Lord (1855), and William Elfe Tayler (Anon. 1846). Six SGs limited the Flood to the post-Tertiary, which was originally called Diluvium (Group D in fig. 1): Andrew Ure (1829), Henry Browne (1832), Samuel Best (1837), John Murray (Anon. 1831, 1838), James Mellor Brown (1838), and James Alexander Smith (J.A.S. 1857). Thus far only one SG has been located who limited the Flood to Secondary formations and in fact limited it to the Carboniferous system, and that is the American medical doctor, Martyn Paine (1856). Beyond the above list SGs failed to designate specifically where they thought the Flood began in the fossil record, and at least one SG paid almost no attention to the biblical Flood (Cole 1834). Nearly all of them ended the Flood in the Diluvium. Most SG works are now scanned and available on the World Wide Web.⁵

One example of a SG who was quite nebulous on where to put the Flood was the clergyman John Tudor, a writer on biblical prophecy who earned an M.A. degree from Cambridge University. Unfortunately, he has been overlooked by historians of science. He is the author of *Sacred Geology* (Anon. 1847), which was published anonymously.⁶ Anonymity made it much easier for the general public to ignore or to reject such works and has caused most modern historians to slight such works as well. Each page of Tudor's book carries the running caption, "Scriptural Geology." It is clear that Tudor was true to scriptural geological principles on this one point: he endorsed the concept of a predictable geological sequence wherever the strata were studied in various parts of the world. He wrote: "The primary fact of Geology, on which everything else depends, is the regular order of the grand formations, or mountain masses, in all known parts of the world: each bed of rocks occupying a constant position in reference... both to its mineral composition and as to the species of fossils that are embedded in its mass" (Anon. 1847, vi–vii). Prior to 1845, SGs concentrated on geological sequences

basically in the British Isles and in Europe. Tudor failed to suggest which strata were Flood related and which were non-Flood related, other than stating that primary rocks came into existence during Creation Week and the coal beds were formed by the Flood. He was content in concluding that God being all-powerful and a God of order may have superintended in some way the organization of the strata as they are found today (Anon. 1856, 160–164, 200–201)—claiming that beyond that little can be known. Thus for him geology is an evidence of divine design.

The Waning of the Scriptural Geology Movement

Scriptural geologists were an "eclectic" and at times a quite diverse group (Mortenson 1996, 397–402), although with few exceptions they held to the ten principles of SG listed above. The drift from the ten principles started with one of the founding fathers of the SG movement, George Bugg, whose two-volume *Scriptural Geology* gave the title to the entire movement (Anon. 1826–1827). Although it was published anonymously, readers started finding out who the author was and finally "Bugg identified himself with it in his correspondence with the *Christian Observer*" (Mortenson 1996, 121–122). A real possibility is that Bugg may have later published under the pseudonym "Biblicus Delvinus" a work entitled *A Brief Treatise on Geology: or Facts, Suggestions, and Inductions in That Science*, and a work with the earmarks of the SG movement (Delvinus 1839). None of the contemporaries of Biblicus Delvinus was able to identify the mysterious author of that work, as far as we can tell. However, this work's authorship can be identified with certainty not so much by common subject matter between Bugg (Anon. 1826–1827) and Delvinus (1839), but (a) by the use of unique expressions and words, and (b) with bibliographic analysis. One would expect that all SG works would share much in the way of common content and subject matter, so that is not proof of itself that the two authors are one.

The nearly unique vocabulary shared between Bugg (1826–1827) and Delvinus (1839) point to

² Turner believed that the materials of the earth existed long before Creation Week as did many SGs.

³ Rhind conceded that the matter of the earth may have long pre-dated Creation Week.

⁴ Hutton's work must have been popular, having been reprinted in 1851, 1857, and 1860 (2nd ed.)

⁵ Seven of the SGs have been featured in Mortenson (2004) and in occasional publications on the creation.com website: Penn, Bugg, Ure, Fairholme, Murray, Young, and Rhind. Another six are described at length in Mortenson (1996): Cole, Gisborne, Best, Brown, Fowler de Johnson, and Cockburn. For further information on the remaining SGs, especially where they have placed the pre-Flood/Flood boundary, the reader is referred to the Internet. George Young appears to have placed most or all of the geological record in the year of the Flood, especially when considering his 1828 work. But by 1838 or 1840 Young makes allowance for the lowermost "unstratified" rocks to have formed prior to the Flood, which for him first began with the deposition of the coal beds (or Carboniferous). He spoke of the "ancient bed of the ocean" composed of fine-grained clay and lime "having been accumulating from the earliest ages" and "might have acquired a vast thickness at [or by] the era of the deluge" (Young 1840, 47). Clearly he has assigned "the stratified rocks" to "one period," namely the Deluge, at which time the unstratified rocks were raised up from the bed of the antediluvian ocean (Young 1840, 39, 54). Young did open the door to the possibility that these "ancient oceans" may have first formed prior to the six days of creation (Mortenson 1996, 338–339; Young 1840, 41).

⁶ Catalogers are agreed in identifying the author as Rev. John Tudor. See the electronic version of his book at: www.archive.org.

common authorship: “mammiferous quadrupeds,” “human bones,” “convulsions,” “blocks of granite,” “primitive mountains,” “peculiar,” “brooded,” “metallic veins,” “Wernerians,” etc. However, these shared words are not final proof of joint authorship if one brings plagiarism into the picture to explain a common vocabulary. Significantly, however, these words and phrases are not employed by most SGs, and when used they appear usually just once in the writings of any SG, while many appear frequently in Bugg and Delvinus.⁷

For both Bugg and Delvinus Genesis 1:2, “the Spirit of God moved upon the face of the waters,” should be translated “the Spirit of God brooded upon the face of the waters” (Anon. 1826–1827, vol. 1, 123–124; Delvinus 1839, 11). The picture here is that of a mother bird, “as fowls do hatch or cherish the young” (Delvinus 1839, 11). This is identical to what Bugg said in 1826: “‘Moved’ means *brooded*, as fowls do to hatch their eggs, or cherish their young.” In both cases the author (or authors) next argues that this cannot be translated as “wind” from God, as some scholars have proposed, because there was no atmosphere to support winds. Delvinus (1839, 40–41) reasoned that having the atmosphere created on Day 2 was not fatal to his theory because marine invertebrates, which are the only fossils in the Transition rocks, did not need an atmosphere and could easily have existed during what is considered to be a time “without form and void.”

Now we have a dilemma: either Delvinus is heavily plagiarizing Bugg’s two-volume work written about 12 years earlier by copying words, expressions, and even sentences, or else Delvinus is to be equated with Bugg. In rejection of the first option, the plagiarism hypothesis is unworkable for bibliographic reasons. Both authors referenced two nineteenth century works, which had been long out of print—Alexander Catcott’s *A Treatise on the Deluge* (1761) and William Jones’ *Philosophical Disquisitions* (1801). Both works must have been in the personal library of George Bugg and Biblicus Delvinus for each author to have cited these two works. This identical shared bibliographical “fingerprint” has been left by Delvinus (1839, 12, 20) and Bugg (Anon. 1826–1827, vol. 2, 325, 336); hence, Bugg and Delvinus are one and the same author, as even further bibliographical

evidence would suggest.⁸ Delvinus extracted differing information from both Catcott and Jones than did Bugg; thus Delvinus could not have been relying slavishly upon Bugg unless they were the same individual. Only one SG library must have retained the works of both Catcott and Jones.

The equation of Delvinus with Bugg has major implications for understanding the SG movement. Its eclecticism is even more pronounced than what has been understood by scholars here. Both Bugg and Delvinus adhered to the literalness of the six Creation days, thus being in harmony with one of the key principles of the SG movement. The difference between the two works presumably both by Bugg is that the former work assigned the fossil record to the post-Creation period while the second work allowed for the lowermost fossil record to have come into existence prior to the six days of Creation (Delvinus 1839, 26–32). According to the 1839 Delvinus, the fossil record was composed of “dead things” that were created during the hypothesized “without form and void” period in order to provide nourishment for the fishes created on Day 5. Otherwise the fishes had nothing to subsist on. The Transition rocks were formed in a “tranquil sea” prior to the time when quadrupeds were created on Days 5 and 6 of Creation, thus the transition pre-dates Creation Week (Anon. 1839, 41–42). By contrast the 1826 Bugg explicitly rejected any “chaotic earth” theory whereby the earth had been in existence in seminal form prior to the seven days. The “earth” in Genesis 1:1 included all that was created during the six days. He stated that the “brooding” of the Holy Spirit described in Genesis 1:2 “clearly cuts off... the extravagant notion that our ‘earth’ and ‘seas’ had possessed *fishes, birds, and animals*, ‘thousands of ages’ *before* the ‘Spirit of God had moved’... ‘upon the face of the deep.’” (Anon. 1826–1827, vol. 1, 124). The “fishes, birds, and animals” referenced here are all vertebrates. The 1826 Bugg was totally silent as to when invertebrates, especially marine invertebrates, were created. The 1839 Delvinus took a totally new path by asserting that the marine invertebrates which are found below the Secondary formations should be dated to the pre-Creation era to serve as food for the marine vertebrates as soon as they were created on Day 5 of Creation Week (Delvinus 1839,

⁷ The word “peculiar” is used by Bugg 67 times and the expressions “blocks of granites” and “human bones” appear 30 and 16 times each, while the word “convulsions” appears 12 times (Anon. 1826–1827). Delvinus was immersed with these and other unique expressions found in Bugg and rarely or never used by other SGs.

⁸ An additional evidence that Bugg and Delvinus are one and the same is that both of their works were published by two partnered publishers—Seeley and Hatchard. Only one other SG, Henry Cole, has published works printed by both Seeley and Hatchard. George Bugg no doubt wished for anonymity, so that he felt safe to rely upon his original two publishers for publishing under the pseudonym Biblicus Delvinus. All eight of his published monographs listed in Mortenson (1996, 476–477) employed Seeley as his publisher. Delvinus deserves a place among Bugg’s eight published books. His works on geology were the only ones published with anonymity. The identification of Delvinus with Bugg was first proposed by Johns (2008), but the main evidence then was based on the use of identical publishers. Now we have much more evidence to merge the two authors into one individual.

41–42). Even today, the invertebrates are said to have completely dominated the lowermost fossil record below the Devonian rocks. The 1839 Delvinus (106) identified himself with the SG movement. At the end of his work he acknowledged having just read George Young's *Scriptural Geology*, presumably the 1838 edition (Young 1838) and was delighted that they had so many views in common. The main difference is that Delvinus (Bugg) designated the Transition rocks as pre-Creation, while Young simply viewed them as pre-Flood in an ancient ocean.

Starting with the 1850s SG began straying even further from the basic principles held by SGs writing in the 1820s, 1830s, and 1840s. One SG who strayed even further afield from SG principles than did Bugg was James Ivory Holmes (1856), a Church of England clergyman with an MA degree from Cambridge. While SGs never commented on the age of the stars, Holmes stated that the earth is as old as the stars and the rest of the universe, thus raising the question of whether he was even a SG. For him the hypothetical "without form and void" period prior to the six days was composed of two ages: Azoic, when Primary rocks were deposited on a granite base, and Zoic (or Saurian) period when the sun was dim and only sea life could have existed, all of which became extinct during the six days. The giant marine reptiles, such as ichthyosaurs and mosasaurs, lived during the Zoic period, but were killed off during the upheavals of the second day of Creation. Holmes assumed the days of Creation were literal 24-hour days and that most of the fossil record came into existence during the last 6000 years.⁹ Coal was not formed during the Zoic period, but during the Flood. It was the aftereffect of trees being uprooted and floated into the oceans during the Deluge, which were transformed into coal within six months (Holmes 1856, 1857). Holmes' views are reminiscent of the "without form and void" concepts proposed by George Bugg under the pseudonym of Biblicus Delvinus (1838). For both Holmes and Bugg the lowermost marine strata were established prior to the six days of Creation, but Holmes allowed for marine vertebrates in the pre-Creation period, while Bugg did not. Regardless of whether Holmes should

be classified as an SG along with Delvinus, they both are prime exhibits of the significant drift away from SG principles, culminating in the 1850s.¹⁰ No YECs today advocate ideas such as these.

Possible Reasons for the Demise of Scriptural Geology

Granted that the SG movement became even more eclectic by the 1850s, the question remains as to why a movement that apparently was quite strong throughout the 1840s and endorsed by a wide variety of scholars in a wide variety of professions could suddenly collapse. Creationist Byron Nelson has speculated that the reason for the waning of Flood geology in the nineteenth century is that with the establishment of great educational institutions the control of education gradually passed from men who were believers to men who were "openly hostile to the Bible" (Nelson 1931, 83). Creationist historian Terry Mortenson sets forth a variety of sociological and theological reasons for the demise, none of which appears to be dominant, although the underlying thread in all of them is the adoption of naturalism by geologists (Mortenson 2005, 219–228).¹¹

Probably the best explanation in current literature is the concept of the "the diminishing deluge" set forth in the doctoral dissertation of Rodney S. Stiling under this same title (Stiling 1991). This is the idea that over a period of several decades SGs in the United States placed the lowest pre-Flood/Flood boundary higher and higher in the geological column until its final "resting place" was exclusively in the Diluvium. When the Diluvium deposits in the mid-nineteenth century were discovered to be generated by giant ice sheets and not by Noah's Flood, the last "refuge" for Flood geology was eliminated. Conservative Christians reacted by accepting the long geological ages, while adopting a modicum of orthodoxy with the Gap Theory, which applied the six literal days of creation to a re-creation period following a massive worldwide destruction. They replaced Noah's Flood with "Lucifer's Flood," which happened immediately prior to the six-day re-creation period. The "orthodox" views of the Flood in the late nineteenth century

⁹ Holmes was not a promoter of the Gap Theory because did not discuss Genesis 1:2 and did not put the entire fossil record in the "without form and void" period as gap theorists did.

¹⁰ Archibald T. Ritchie (1850) is another writer who was on the fringes of the SG movement and who put even more of the fossil record in the pre-Creation period than did Holmes, although he upheld the literal six days of Creation. He was a literalist when it comes to Exodus 20:11, "in six days . . ." because in his thinking there were no days prior to the six days because the earth did not begin to rotate until Day 1. He was not a gap theorist.

¹¹ Mortenson (2004, 219) begins by asking the question, "Why then were the scriptural geologists misrepresented and ignored by their opponents?" The following factors are mentioned: SGs were marginalized from the academic world (similar idea to what Nelson proposed); technological advancements led scholars to conclude that superstition controlled the prescientific views of ancients; SGs operated alone and not by collusion, lessening their effectiveness; the change of a worldview from premodern to modern had catastrophic repercussions on the SGs and the biblical worldview they were holding to; and the different applications of the principle of uniformity (the operating principle of geology) separated SGs from non-SGS. He ends by setting forth a summary of the reasons for their decline, the final one being that the issue of origins "was moving rapidly away from assumptions rooted in Christianity to a semi-deistic, agnostic or atheistic framework" (Mortenson 2004, 236).

were that it was either a nearly-universal, surficial, end-Pleistocene Flood or a local Flood perhaps in the Mesopotamian valley. Another possible reason for SG's demise is compromise: SGs such as Bugg and Tudor allowed for some life being created prior to Day 1 of Creation Week, thus undermining the SG position that all living things came into existence during the six days (Exodus 20:11). However one explains the demise of SG in the nineteenth century, one will always notice a link between the abandonment of the six literal days of creation and the abandonment of a universal Flood.¹²

One could argue that SG was barely kept alive by a few scattered works published after 1860. One attempt at salvaging the SG movement was published anonymously in England under the title *The Physical History of the Earth* (Anon. 1864). The title page records these words: "Meditations by a Student." The author then was not a degreed geologist, but a student presumably pursuing studies in geology. A comparison of his work with other contemporary writings on geology suggests that he copied the wording and thinking of a wide variety of geological works, including SG works, to put together his theory. He adopted a view similar to the one advocated by Holmes that the hypothetical "without form and void" period lacked sunlight, was unlimited in time, and "became peopled by countless animals, birds, insects, fishes, etc.," all of which did not need light (Anon. 1864, 53). He was well aware that plants could not exist for thousands of years before the sun was created on the fourth day, thus he assigned the creation of plants to the third day, which for him was a literal day (Anon. 1864, 77–78). His efforts to keep the SG movement alive by inserting more of the fossil record into the pre-Creation period were of no avail. However, on a more positive note he did hold tenaciously to the one SG principle—that "there is, undoubtedly, a distinct order of succession" in the strata (Anon. 1864, 19). All of the writings supportive of SG in the 1840s and 1850s did uphold the one principle that there is a regular order to the strata that can be observed in various parts of the world. This harmonizes well with the thinking of most Flood geologists today.

One SG who appears to have survived long after the demise of SG was Stephen Alexander Hodgman (1808–1887), a United States Army chaplain who published *Moses and the Philosophers* (Hodgman

1881).¹³ It is a book in three major parts, only the first of which covers the topics of Creation and geology. He admitted in two of the three introductions that he wrote the manuscripts for his book some 40 years earlier (ca. 1841), so that Hodgman should be assigned a place among SGs during the height of the SG movement. But his book actually has very little on geology itself. The approach is more from the standpoint of philosophy and physics. Hodgman's strange book did nothing to keep SG alive in the period of 1860 to 1900. SGs suddenly disappeared from the pages of history after 1860. Thus, not a single survivor of the SG movement can be located, who was publishing books advocating SG ideas after 1860, other than a geology student's essay in 1864 and the outdated work of Stephen Hodgman in 1881. The question still remains, Why the demise? The concept of a geographically-extensive, catastrophic biblical Flood still was advocated by some geologists after 1860, as we will note later. But there remains one cogent reason why SG so quickly faded from the arena of science.

Scriptural Geology and Appearance of Age

Conservative nineteenth-century creation scientists who realized that they could no longer put the entire fossil record in a one-year Flood realized that it would be difficult to put most of the fossil record in the 1650 to 2250 years of the antediluvian period. Therefore they adopted the untenable view that the entire fossil record (except for the Recent period) was created ex nihilo during the six literal days of Creation Week. The outstanding example of this theory is Philip Gosse (1857), who reasoned that Adam was created with a navel (Greek, *omphalos*), even though he never experienced birth. In it he proposed the idea of "prochronism," which speculates that fossils appeared to have had a long history prior (pro- or pre-) to their being created instantly during Creation Week. In recent years this has been called "the appearance of age" creation argument. Gosse highly praised the work of one SG, Granville Penn, while acknowledging the works of several SGs with whom he disagreed on the question of the Flood burying the fossils.¹⁴ Penn stated that there are two great revolutions, the first on the third day of Creation, and the second at the Flood, accounting for the entire geological record (Penn 1825, vol. 1, 209–224; vol. 2, 64–123). For Penn the first revolution

¹² Perhaps the idea that scientists gave up on the six days for Creation resulting in the abandonment of a universal Flood, has been oversimplified, but it is something first proposed 40 years ago (Johns 1975). A more recent study brings "the diminishing Deluge" concept in the picture (Johns 2008). One other potential influence in SG's demise that has not been discussed is the impact of uniformitarianism.

¹³ Very early in his career he was also the author of a 28 page pamphlet on the subject of creation (Hodgman 1828).

¹⁴ Gosse was widely read in SG works, giving citations in chapter 1 of his book from the writings of J. Mellor Brown, Robert MacBrair, Andrew Ure, Granville Penn, George Fairholme, George Young, and William Cockburn. But of Penn he stated: "Perhaps the most eminent writer of this class [SGs] is Mr. Granville Penn" (Gosse 1857, 11).

produced “the appearance” of a geological history prior to the six days; hence, Penn was the first SG to introduce the appearance-of-age argument (Penn 1825, vol. 1, 224). Gosse merged the two revolutions into one, which was confined solely to the seven days of Creation.

Gosse’s book *The Omphalos* (Gosse 1857) was not the only work published by conservative creationists in the 1850s, arguing that fossils were specially created by the Creator. One similar work, entitled *A Brief and Complete Refutation of the Anti-Scriptural Theory of Geologists*, stated that “fossils are the archetypes, which God Almighty formed together in chaos, when he called the world into existence” (Anon. 1853, 6–8). Thus, for him all fossils were created on the first and second days of Creation as models for the formation of living plants and animals during the third, fifth, and sixth days. The patterns were all preserved in stone, except for the Siberian mammoths that were preserved in ice during Creation Week.

A third writer in the 1850s who imbibed of the appearance-of-age arguments was the anonymous C.B., an Irish Catholic, who published his work *Geology in its Relation to Revealed Religion* in 1853 (C.B. 1853). He took a compromising position with those advocating the entire fossil record being created during Creation Week—he theorized that much of the mineral matter found in the fossil record was created during Creation Week, and not produced by natural means over periods of time. For him [C.B.] all coal, all salt formations, and all limestone were originally created by God during Creation Week. Even chalk dates back to Creation and is not thought to be of organic origin. Somehow fossils became incorporated into these mineral deposits mostly during the antediluvian period with the action of large rivers and transgressing seas. C.B. is ambivalent whether this was done within the traditional 6000 years of earth history. Eventually a universal Deluge swept some of these antediluvian fossils to high places around the world where they can be found atop mountains such as the Alps and the Andes. The anonymous C.B. appears to have been an aberrant SG who attempted to shorten earth history by having God creating many rocks and minerals with organic content during Creation Week. Even the “slates” with an abundance of “shrimps” were created by God because the shrimps are preserved in only two dimensions. They never existed as shrimps otherwise they would have been preserved in three dimensions. One can

easily dismiss C.B.’s ideas because they generate more problems than they solve.

One can also dismiss the previous two works advocating a full-fledged creation of fossils (nearly all fossils) during Creation Week because appearance-of-age arguments cannot be tested by science, but rather exist only in the realm of speculation. The arguments do not have biblical support either. The two authors never accepted the reality of a geological sequence found in the rock record, as did all SGs. They are not SGs, whereas C.B. can perhaps be considered to be a partial SG. But what these three works did to SG was to tarnish totally the reputation of scientists and other scholars advocating SG because the general populace in the 1850s associated them with scholars who held to the six literal days and a short chronology. The extremist views of these three works advocating “prochronism,” “archetypal creation,” and the ex nihilo creation of coal and limestone turned the academic world fully against SG because of the close association of Gosse with SG thinkers and thought. His book was immediately met with a flurry of extremely negative book reviews in Great Britain. In America the one lone voice that supported the three extremist works was that of Thomas A. Davies (1857, 1860), who advocated the idea of fossils as created entities and evidences of Creation, not the Flood. That voice was quickly silenced as well (Johns 2008). Thus 1860 marked the final demise of the SG movement both in Europe and in America. One feeble attempt to resuscitate Gosse’s theory was made by industrialist William Rose in 1867, but technically he is not considered to be a SG because for him the Flood had no role in producing the geological record.¹⁵ However, he definitely advocated a young earth as opposed to the old earth ideas of the day-age theory.

But certain appearance-of-age arguments are still held by a few creationists, but to a much lesser degree than what Gosse was proposing. According to Carl Wieland (2010), one source of petroleum is in granite, although most oil and gas industrial geologists would likely disagree. This raises the possibility that God created at least some hydrocarbons when he created the foundation rocks of the earth, such as some granite, on the third day of Creation. Walter Brown (2008) has suggested that salt, limestone, and dolomite existed in liquefied form in subterranean chambers prior to the Flood. According to a review of Brown’s book, *In the Beginning*, he concludes: “Limestone and dolomite are inorganic precipitates” (Oard 2013).

¹⁵ William Rose (1821–1891) authored *An Explanation of the Author’s Opinions on Geology* (1867), which is exactly ten years after the last SG of prominence produced his final work—W. E. Tayler. Rose’s contribution, however, was to illuminate the reasoning behind all *Omphalos* type of arguments. They are rooted in the fourth commandment, “For in six days the Lord made heaven and earth, the sea, and *all that in them is*” (Exodus 20:11, emphasis added). All *Omphalos* arguments took the extreme view that “all that in them is” (the earth especially) included all rocks, minerals, and fossils in the earth. If the Lord made the minerals in the earth in one day, then he also created the fossils in one day, according to Rose (1867, 46).

Brown also claims all chalk deposits, such as those on the south cliffs of England, are inorganic, contrary to the well-established geological finding that chalk is composed of once-living organisms known as coccolithophores. These conclusions open the door to the possibility that God created salt, limestone, and chalk during Creation Week and buried such in the bosom of the earth until the time of the Flood—ideas amazingly reminiscent of those proposed by C. B. in 1853, as noted above. In defense of Walter Brown, he would never wish to go as far as Philip Gosse did in *Omphalos*. With today's YEC issues, the postulation of ex nihilo creation of minerals normally associated with hydrocarbons, limestone, and chalk deposits seems to create more problems than it solves, the main problem being how to verify the creation of such during Creation Week.

Differences Between Scriptural Geologists and Young-Earth Creationists

All YEC models today have the following non-negotiable principles:

1. The days of Creation are literal historical days, not day-ages, analogical days, revelatory days, literary days, mythological days, theological days, or any other type of metaphorical day.
2. The Flood was a universal, catastrophic event that has left its mark upon the geological record.
3. The genealogies and other historical records stretching from Adam to the present suggest a short-age timeframe. The short timeframe includes the entire universe.
4. The mega-evolution of Darwinism is not accepted as a paradigm for earth history, but on the level of micro-evolution significant changes are allowed within the original created "kinds."
5. The Bible from Genesis to Revelation is inerrant in its essence and is accurate in the areas of history and science as well as in theology.

A few significant differences can be seen between the two preceding lists. SGs all wrote in the pre-Darwinian era, that is, pre-1859. Because they were writing prior to the time that Darwin launched a full-fledged evolutionary theory in 1859, it is not surprising that they like old-earth creationists did not comment on pre-Darwinian evolutionary theories, except those in the book *Vestiges of the Natural History of Creation*, published anonymously by Robert Chambers in 1844 (Anon. 1844). Chambers offered for the first time to the public a full-fledged evolutionary view for the history of life on earth. The one SG to devote extensive critical attention to his views was William Elfe Tayler, who published anonymously his *Scriptural Evidences of Creation* just two years later (Anon. 1846). In his preface Tayler remarked that Chambers' book was the entire

reason he decided to write his when he did, after having completed his first chapter written against earlier believing geologists with old earth views. For him Chambers was far worse, championing "the doctrines of materialism" as an unbeliever (Anon. 1846, vi). According to Mortenson (2004, 196), George Bugg and William Rhind were among the few SGs who discussed "transmutation" (evolution) of species, but for them change was always within the created kinds, not between the kinds.

A key difference between most SGs and some YECs today is over the reality of a geological column. Nearly all SGs accepted the reality of a reliable geological sequence, and many assumed that it would eventually be found worldwide. In the last three decades a few YECs have questioned whether there is such a thing as a geological column spanning the continents, perhaps being influenced by Henry Morris (1996, 53), who concluded "that the geologic column is largely an artificial construct, not existing as a whole in any one location." Even the critics of the geologic column concept concede that there are local columns with fairly consistent sequences. Morris was concerned that both the long-ages concept and the geologic column "seem to be based essentially on belief in evolution" (Morris 1996, 50). John D. Matthews calls the geological column "a dead end" and concludes: "All rocks labeled Devonian through Tertiary may be contemporary (hours rather than millions of years apart) depending on location." (Matthews 2011, 102). Another creationist with training in geology, Robert E. Gentet, also supports the contemporaneous nature of all rock formations organized into biogeographical provinces rather than in any predictable continent-wide or global sequence according to his "Creation/Curse/Catastrophe" model (Gentet 2000a). Some creationists have criticized the CCC model and other models for relying upon what they call "the uniformitarian geological column" because it is considered to be both uniformitarian and evolutionary (Oard 2010; Reed and Froede 2003; Reed, Klevberg, and Froede 2006).

A good example of the questioning of the geological column is John Woodmorappe (1999, 77), who concludes: "Thus the geologic column does not exist and so does not need to be explained by Flood geology. Only each local succession requires an explanation and Flood geology is wholly adequate for this task." The reasoning is that if the geological column does exist and does explain rock formations around the world, then Flood geology will cease to exist as we know it. The nineteenth century SGs advocated a geological sequence essentially identical to the one spelled out by pre-Darwinian geologists; the three sections being "primary" (unfossiliferous basement rocks), overlain by "secondary" (Paleozoic and

Mesozoic in today's system), followed by "tertiary" (identical to today's Tertiary). Early SGs believed that they could accept the geological sequence as defined by their contemporaries without accepting long geological ages. That's just as true today. Most YECs with training in geology accept the reality of the geological column. A good example of this is Snelling's *Earth's Catastrophic Past* (2009), which is an updating and thorough revision of Whitcomb and Morris's *The Genesis Flood* (1961). Snelling fully accepts the reality of a worldwide geological column; Morris, as noted above, did not. The SG acceptance of a reliable, repeatable sequence at least for all of the United Kingdom and most of Europe is in stark contrast with the few YECs today who question the column's reliability and even existence.

Another difference between SGs and today's YECs is that SGs generally did not debate about how old the inorganic materials of the earth may be or exactly when the foundations of the earth were created. A typical example is SG Robert MacBrair,¹⁶ who described the view of SGs in these words: "we would neither affirm nor deny a previous occupation of our own planet" (MacBrair 1843, 27). For him it was possible that fallen angels were cast upon an earth already existing before Day 1 of Creation Week, but not as a chaotic earth that was gradually evolving according to contemporary geologists.¹⁷ However, it was assumed by most SGs that the earth's foundations were created starting with Day 1 of Creation Week and completed by Day 3. According to a few SGs such as Frederick Nolan (1833, 404), Sharon Turner (1832, 1852, vol. 1, 39), William Cuninghame (1841, xiii), J.L. Comstock (1841, 315), William Rhind (1855), and Samuel Best (1837, 22), the "without form and void" earth could have been thousands or millions of years in existence, but definitely having no life. As noted previously, two SGs, George Bugg under the pseudonym *Biblicus Delvinus* (Delvinus 1838, 1839) and James Ivory Holmes (1856, 1857) went much further and allowed for the Transition (lower Paleozoic) formations to have existed during an undetermined "without form and void" period, but definitely affirmed that all other living things, especially land vertebrates, were created during the six literal days.

Today most conservative creationists are opposed to having a very old earth (without life) because it leads to having a very old universe, and vice versa. The acceptance of stellar evolution in an old universe potentially leads to the acceptance of biological evolution on earth and undermines the activities of the fourth day of creation. But SGs never debated the question of how old the universe may be. An old universe within the confines of the nebular hypothesis was only first presented in a popularized form by Robert Chambers in 1844 (Anon. 1844), after having been formally proposed scientifically by the philosopher Immanuel Kant in 1755 and later in 1796 by the astronomer Pierre-Simon LaPlace.¹⁸ The acceptance of an old universe and its accompanying nebular hypothesis began to take place slowly in the last half of the nineteenth century keeping pace with the acceptance of Darwinism, thus stellar evolution was not of any concern to most SGs (Numbers 1977, 119–123).¹⁹ True to their designation, scriptural *geologists*, SGs were focused upon earth history, not the history of the universe or stellar evolution.

The SGs of the past and YECs of the present are in essential agreement on points 1, 2, and 5 in the list immediately above. Had SGs published after Darwin's *Origin of Species*, they undoubtedly would have accepted fully point no. 4 as well. SGs also did not discuss in detail belief number 3 above, the idea that the age of the earth can be derived from genealogies and other numerical sources in Scripture. That is because the large majority of Christendom in the first half of the nineteenth century accepted the 6000 years for earth history as established by Archbishop Ussher's chronology. It was assumed correct and did not have to be defended. Just a few SGs adopted the figures of the Greek Septuagint text as being original, thus extending the 6000 years by an additional 1200 years or so.²⁰ Thus, all SGs advocated a 6000–7000 year history for the earth after the six days of Creation, while today's YEC position is described as having a date for Adam between 4000 and 10,000 BC. (McGee 2012). Also, SGs did not debate whether there were gaps in the Genesis genealogies; it was a foregone conclusion that there were no gaps, whereas YECs take opposing viewpoints on the question of gaps (McGee 2012). In spite of these differences, biblical and theological unifying threads tie together all SGs and YECs. In addition, a historical thread

¹⁶ According to Mortenson (1996, 12), MacBrair was a scriptural geologist.

¹⁷ MacBrair (1844, 21–25) prior to this statement had argued strongly against the nebular hypothesis of LaPlace.

¹⁸ This is formally known as the Kant-LaPlace nebular hypothesis. See www.britannica.com/science/Kant-Laplace-nebular-hypothesis. Scriptural geologists apparently did not discuss LaPlace per se.

¹⁹ Even though many conservatives felt that supporting stellar evolution would lead to the support of Darwinian evolution, it was not always the case. Numbers concludes: "It is clear from this summary that acceptance of the nebular hypothesis did not necessarily lead to the acceptance of organic evolution" (Numbers 1977, 123).

²⁰ For example, Thomas Hutton (Hutton 1850, 315; later reprinted in an 1860 London ed.); A. Sorignet (1854; later translated into English and reprinted in 1862 at St. Louis); Rhind (1838, 88–89); William Elfe Tayler (Anon. 1846; Tayler 1855, 139–140).

can be traced from the writings of SGs directly into the thought of some Flood geologists in the past 100 years or so. Of the SGs writing in the last two decades of the movement's history probably the most outstanding was William Elfe Tayler, who published three works (Anon. 1846, 1857; Tayler 1855).²¹

William Elfe Tayler and Humans in the Paleozoic

Terry Mortenson's dissertation concentrated on the SGs who completed all their writings in the period 1820 through 1845 with only a couple of exceptions (Mortenson 1996, 428). In addition, Mortenson focused on early SG works published in Great Britain. He only alluded to SGs in the new world and cited none on the European continent. The present study carries Mortenson's excellent study beyond 1845 to 1860, the end of the SG period, and includes some American writers.

The last SG to have tangentially influenced the modern creationist movement was William E. Tayler, writer on prophecy, church history, and geology.²² Byron Nelson (1931, 111–113), one of the founding fathers of modern Flood geology, summarized in an affirming way Tayler's views found in his work *Voices from the Rocks* (Anon. 1857). George McCready Price, the one who revived SG and gave it the name Flood Geology starting in 1902, was aware of the writings of Tayler as well as the writings of earlier SGs, such as, Granville Penn, George Fairholme, Sharon Turner, and George Young.²³ None of these authors put the Transition (lower Paleozoic deposits) in the Flood, and two of these (Tayler and Turner) limited the Flood to the Tertiary. Price, who had no formal training in geology, never considered the possibility that the Flood might be found solely in the upper part of the geological column because he did not believe there is any such thing as a "geological column." Because most Flood geologists put the entire Paleozoic and Mesozoic within the Flood year, most YECs will take strong exception to the ideas of William Elfe Tayler, who could not have been more clear when he

asserted that "the whole of the secondary, and the greater part of the primary strata... may have been formed within the twenty centuries [Septuagint chronology], that elapsed prior to the deluge" (Anon. 1846, 293). According to Tayler's 1846 work most of the Primary and all of the Secondary are considered to be pre-Flood. This means that the Flood was limited to the Tertiary (today's Cenozoic) in contrast to the large majority of Flood geologists today who would put all of the Secondary in the Flood year. But nearly a decade later Tayler put some of the Secondary in the Flood because he changed his views on the formation of coal, feeling that it had drifted to its present location by Flood waters. In the end he put the pre-Carboniferous formations (today's Cambrian, Ordovician, Silurian, and Devonian) in the pre-Flood period (Tayler 1855, 28–30).

With his last geological work produced in 1857 Tayler did his writing after the majority of SGs had written out their views, so his thinking represents the synthesis of SG thought in the decade 1846–1857. In his three works he has summarized the thinking of the same four SGs that Price had read: George Fairholme (1833, 1837), Granville Penn (1825), Sharon Turner (1832), and George Young (1838). But unfortunately his conclusions were eclipsed by extreme views of a few YECs, such as the Irishman C. B. (1853) and the Englishman Philip Gosse (1857), who assigned some or all of the fossil record to Creation Week. Also, the impact of Tayler's last work was entirely nullified by his reporting of supposed human footprints in the Devonian (lowermost Secondary) in North America. That report, originally published in 1822 in the *American Journal of Science*, was not subsequently corroborated. Fig. 2 is a reproduction of the title page of his last work, *Voices from the Rocks*, with a drawing of supposed human tracks in the Devonian of North America (Anon. 1857).²⁴ Obviously the drawings are a hoax. Price (1926, 318) specifically mentions having read this particular work by Tayler.²⁵ The subtitle of Tayler's 1857 work is *Proofs of the Existence of Man during the Palaeozoic, or Most Ancient Period of the*

²¹ For perhaps the first time the identity of the anonymous author of *Scriptural Evidences* is set forth in print in this article. This anonymous author and the author of *Geology: Its Facts and Its Fictions*, Tayler (1855), can be established as identical on the basis that both books are citing the same authorities in their references. Especially striking is the fact that an obscure reference is made to "Edinb. Encyclop. Organic Rem., p. 153" towards the end of *Scriptural Evidences* Anon. 1846, 279), which is the identical reference cited in the identical way in the appendix of *Geology: Its Facts and Its Fictions* (Tayler 1855, 265). Tayler must have held that encyclopedia in his possession between the years 1846 and 1855.

²² The title page of Tayler (1859), *The End Not Yet*, lists some of his scholarly works: "Popery, its Character and Crimes," 'Hippolytus and the Christian Church of the Third Century,' 'The Last Days,' &c. &c." Tayler is associated with Bristol, England, and also wrote about the famed George Muller's work at the Bristol Orphanage.

²³ See, for example, Price (1926, 92, 318), where he acknowledges his literary debt to George Fairholme (1837) and the unidentified author of *Voices from the Rocks* (Anon. 1857).

²⁴ Fig. 2 indicates that the original report of human-like footprints in sandstone was in 1822, but was never corroborated. Tayler incorrectly infers that the sandstone containing those footprints was Devonian. The original report does not identify the geological stratum in which the prints were purportedly found.

²⁵ Just prior to mentioning Tayler's book, Price declared: "I have purposely ignored the various instances where human remains have been reported from deposits of even greater 'antiquity' than the Middle Tertiaries" (Price 1926, 318, n. 16). None of the pre-Miocene (middle Tertiary) reports that Price examined could be documented.

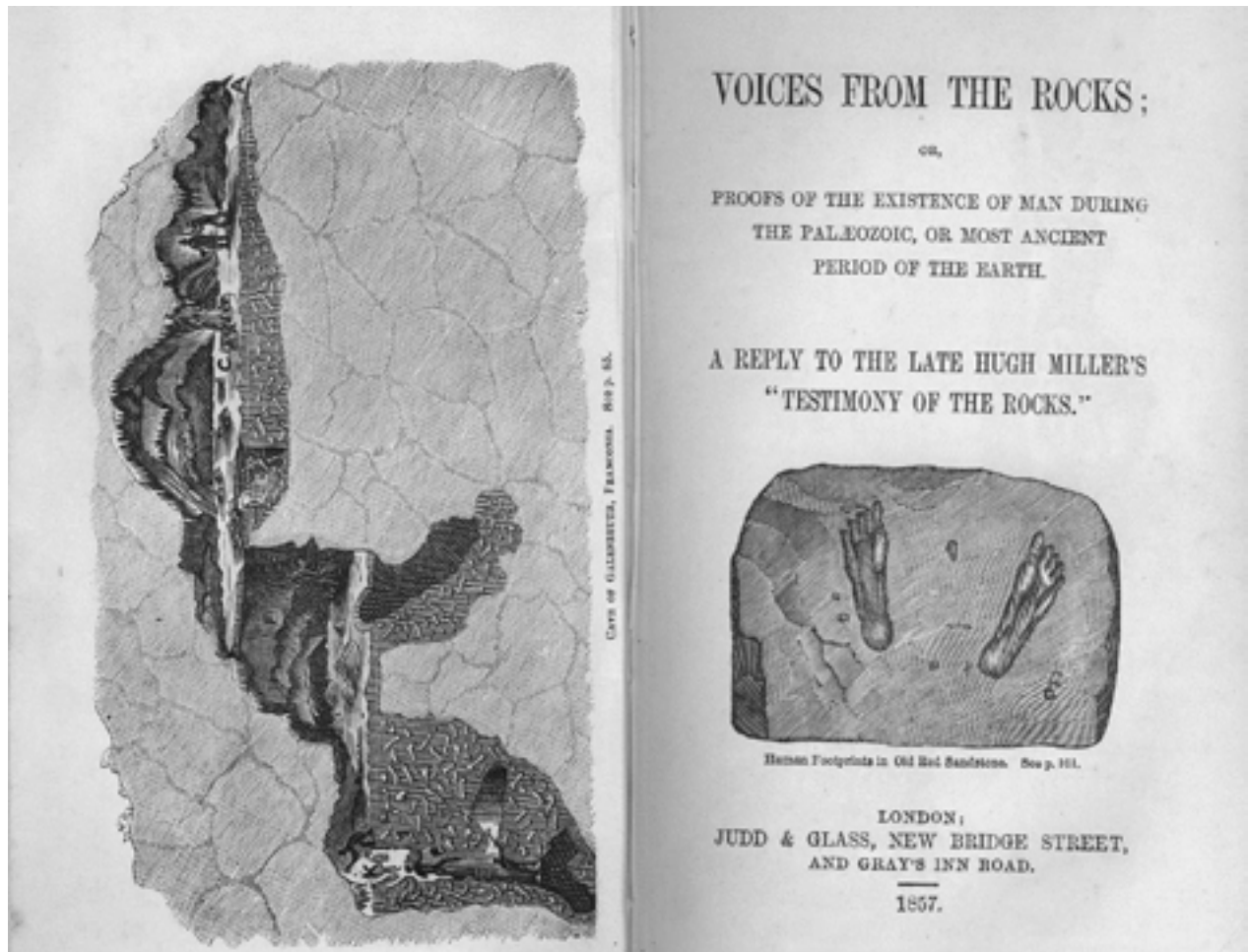


Fig. 2. Reproduction of the title page of William E. Taylor's last work, *Voices from the Rocks* ca, *Proofs of the Existence of Man during the Palaeozoic, or Most Ancient Period of the Earth*, with a drawing of supposed human tracks in the Devonian of North America (Anon. 1857).

Earth (Anon. 1857). Price questioned whether these were actually "proofs."

Today's YECs have been disappointed in not being able to corroborate purported giant human tracks in the Cretaceous (equivalent to uppermost Secondary) limestone of the Paluxy River Valley, Texas. The human tracks of 38–45cm (15–18in) in length were reported by creationist geologist Clifford L. Burdick and apparently validated by non-creationist geologist Roland T. Bird and are pictured in Whitcomb and Morris (1961, 173–175), *The Genesis Flood*. If proven correct, this would have been one of the most convincing pieces of evidence that humans and dinosaurs coexisted. After much thorough study, Henry Morris' son John D. Morris with the help of many other creationists came to the conclusion that the Paluxy tracks most likely were highly-eroded dinosaur tracks (Morris 1986). In addition, some of the tracks were carved into limestone in the 1930s and have ended up in private collections. Creationist Berney Neufeld has uncovered the high degree of probability that the four tracks taken from the Paluxy River area and stored in the Columbia Union

College collection were carved by human hands (Neufeld 1975). Nevertheless, YECs and SGs share a common belief that humans coexisted with all organisms found in the fossil record, extending back as far as the Paleozoic.

Scriptural Geology and Today's Flood Models

It may seem strange that after 1828 perhaps only one SG, the erudite scholar Frederick Nolan, put the transition in the Flood year. Other SGs had the entirely marine Transition formation (Cambrian through Silurian in today's terminology) deposited some time prior to the Deluge. Why is this so? An examination of the writings of numerous SGs supplies a ready answer. Their thinking is a case study of how an overarching theory can impact one's interpretation of geological strata. The dominant theory among nearly all SGs was the idea of the exchange of "land and sea" at the time of the Flood. This idea has a hoary history in the study of Flood geology, perhaps being promulgated as early as 1705 by Robert Hooke, "the great British scientist whose accomplishments were overshadowed only by those of the greater Newton.... Thus, according to

Hooke, the present continents are uplifted remnants of antediluvian seafloors, while the present ocean floors are the submerged remnants of antediluvian landmasses” (Young 1995, 69). In order for the ocean deposits to become land deposits the deep-sea deposits, consisting primarily of Transition beds, had to have been laid down prior to the Flood, which was initiated by the downwarping of the land and uplifting of the ocean bottoms. Otherwise there was nothing to uplift.

The land-sea exchange explanation for the Flood was advocated ardently by a large number of SGs. A perusal of Mortenson’s dissertation indicates that Penn (Mortenson 1996, 109–110, 113), Ure (Mortenson 1996, 169), Young (Mortenson 1996, 341, 344), and Cockburn (Mortenson 1996, 362) all advocated this model. In addition, Fairholme (1837, 65) described the Flood as an event “by which the ancient seas and lands were transposed.” Rhind (1838, 100) should also be included in the above list. Thus half of the identifiable SGs that Mortenson examined were proponents of this model. One dissenting voice to this concept was George Bugg (Anon. 1826–1827, vol.2, 85). What was the propelling force among SGs to derive a model such as this? It was created to resolve perhaps the greatest challenge to the acceptance of young-earth creationism in the early nineteenth century: the problem of the absence of human bones in strata below the Diluvium (Johns 2008). Scriptural geologists explicitly acknowledged this as a major problem, according to Mortenson (1996, 344).²⁶ All humans were thought to be buried in today’s ocean depths. However, extensive, thorough exploration of all marine deposits eliminates the possibility that human remains will ever be found in deep-sea deposits.

This concept of the exchange between land and ocean floor at the time of the Flood is a major difference between SGs and YECs. Only one YEC today, Ariel A. Roth, has published on the land-sea exchange model as a possible explanation for the Flood (Roth 1998, 205, 207). Most YECs do not accept this model because deep-sea drilling has found mostly marine oozes on ocean bottoms, not terrestrial deposits. The Catastrophic Plate Tectonics (CPT) model states that the antediluvian ocean floor was rapidly subducted under continental crust, being transported towards land on major plates, some ending up as accreted terrains in a period of weeks or a few months (Austin et al. 1994). One result of the CPT activities is that mantle waters were turned into superheated steam and ejected into the atmosphere as geysers, similar to what Scripture labels “the fountains of the deep” (Genesis 7:11). For more recent, detailed descriptions of the CPT model the reader is referred to *Earth’s*

Catastrophic Past (Snelling 2009) and *Grappling with the Chronology of the Genesis Flood* (Snelling 2014, 111–143), and for a brief synthesis of CPT theory see Garner (2009, 187–193).

The CPT model starts the Flood at the end of the Precambrian near the beginning of the Cambrian system (lowest Paleozoic) and ends the Flood at the end of the Cretaceous (highest Mesozoic) at the earliest, and perhaps continuing well into the Tertiary system. Only one SG author advocated a Flood model that was somewhat similar to the CPT model as far as the two Flood boundaries go. Frederick Nolan’s Flood model assigns the two boundaries to the same stratigraphic levels as the CPT model does (Austin et al. 1994), except for a few CPT modelers who put the Flood’s termination much higher in the column. Nolan (1833, 243) assigned the entire Tertiary to the post-Flood period as most CPT modelers do.

Another Flood model today is that of engineer Walter T. Brown, who has been the one major proponent of the hydroplate flood model (Brown 2008). Brown believed that at the time of the Flood the crust of the earth split open by an unexplainable force. This was followed by rising of superheated waters from chambers at least six miles below the crust. These waters exited the crust into the atmosphere as steam in the form of gigantic fountains—the biblical “fountains of the deep.” The CPT concept of superheated steam geysers is different in that it is based upon steam originating with water from the mantle, whereas the Brown model has the antediluvian waters situated in chambers under a thick layer of granite crust. The diluvial rain then was largely created by these fountains ascending high into the earth’s atmosphere and returning to earth as rain. Amazingly, this concept has its predecessor in the SG movement. Frederick Nolan also assigned the start of the Deluge to gigantic forces splitting open the crust of the earth, exposing hot magma below. Somewhat different than Brown’s model, waters rushed into those giant crevices and by the “united operation of fire and water” the “fountains of the great deep” erupted because of “an expansive force... which no obstacle is capable of resisting” (Nolan 1833, 238). In two significant areas Nolan anticipated ideas held by some modern Flood geologists: (1) the beginning of the Tertiary marked the end of the Flood; and (2) “the fountains of the deep” may have simply been superheated geysers that were ejected into the atmosphere and came down as rain.

The modern model of Flood geology that at first glance appears to resonate with the thought of many or most SGs is the creation/curse/catastrophe

²⁶ “As far as human remains are concerned, Young said, the main reason we do not find many in the rock strata is that for the most part the pre-Flood land and sea changed places during the Deluge so that most human remains would be buried under the ocean bottom beyond the reach of geologists” (Mortenson 1996, 344).

(CCC) model first proposed by Robert Gentet (2000a, b) and later supported by Edward C. Lain (2001). Gentet was trained in biblical studies and has a Master's degree in geology. His website is the best source for understanding the CCC model (<http://www.creationhistory.com>). This model relegates the entire pre-Cenozoic fossil record to the antediluvian period, which is characterized by major catastrophes resulting from the curse on the earth at the time of Adam's fall. The main geological contention of Gentet and Lain is their claim of the unlikelihood of dinosaurs laying eggs and eggs hatching during the extremely catastrophic conditions of the Flood (Lain and Gentet 2003), an issue that other creationists have raised (Garner 1996; Johns 1997).²⁷

The main advantage of today's CCC model and the nineteenth century's land-sea exchange model is that both models relegate the remains of antediluvian humans to the ocean depths, thus explaining why few antediluvian humans have been preserved as fossils. Of course, both models do not incorporate any findings of seafloor spreading, which would possibly negate this concept. For Gentet the Flood is primarily a terrestrial event, and the result of the Flood is the washing of large vertebrates, including humans, into the oceans to be devoured by sharks and other scavengers. Surprisingly this concept was anticipated by the SG William Elfe Tayler, who explained the lack of humans and other mammalian fossils lower in the fossil record as follows: "The casualties [of the Flood] must always be rare by which land quadrupeds are swept by rivers far out into the open sea, and still rarer the contingency of such a floating body not being devoured by sharks or other predaceous fish" (Anon. 1846, 272).²⁸ Both Tayler and Gentet have reached somewhat similar conclusions without Gentet having read Tayler's work. The idea of antediluvian humans being recycled by ingestion in marine predators is worth investigating today merely on the basis that it was suggested by the last influential SG, whose final work was noticed by Price (1926) and discussed approvingly by Nelson (1931, 111–113).

After George Young published in 1828 SGs had largely abandoned the concept that the Flood was responsible for all of the fossiliferous record, Transition through Tertiary, which is one of two dominant

views today amongst Flood geologists (Clarey 2016; Froede and Akridge 2013, 49). The concept of a Flood producing the large bulk of the fossil record represents the thinking of conservative eighteenth century scientific thought much better than being reflected in the writings of SGs. How is it that so many ideas of today's creationists can be traced back to SGs in the early nineteenth century, but not the concept of a comprehensive, fossil-producing Flood such as taught by Whitcomb and Morris in *The Genesis Flood?* The answer arrives after a consideration of the historical links extending between SGs and YECs.

The Links between Creationists, Then and Now

A "genealogy" can be constructed linking the thinking of SGs with the thinking of today's YECs. An approximate 40-year gap exists between the writings of the last SG and the writings of the first twentieth century Flood geologist, George McCready Price (1870–1963), who wrote about 25 books on geology and evolution over a 40-year period starting in 1902. Price's ultimate goal was to counteract the corrosive effects of Darwinian evolution by invoking one single cause for the fossil record, namely Noah's Flood. With the Flood the theory of evolution was impossible; without the Flood evolution became not only possible but most plausible as an explanation for earth history, according to Price's thinking. His methodology was adopted and adapted from the writings of SGs. He set forth five unassailable facts produced from geology (Price 1913, 59–124; 1926, 70–223); acceptance of those facts would eliminate evolution.²⁹ Price later expanded this same list to include two additional facts (Price 1923, 647–660). What is of interest to this study is that Price never resorted to the theory of the exchange of the land surface and ocean bottoms as did the SGs, but instead he has proposed that oceans have made numerous incursions (called transgressions) over the land, and this he listed as fact 6 (Price 1923, 656–657). The concept of setting forth unassailable facts was derived first from George Young (1828) and second from George Fairholme (1833, 1837).³⁰ Young (1828, 311–340) listed and discussed 20 facts. Price (1913, 78n) has one substantial quote from Young, and there noted that he was the author of *A Geological Survey*

²⁷ Garner has since abandoned this model, called the recolonization model, in favor of the CPT model (Garner 2009). For a rebuttal of the position that dinosaur eggs could not be hatched during the Flood see Snelling (2009, 747–748).

²⁸ Just prior to this quote from Tayler, he spoke about "the absence of fossil bones of mammalia in the older rocks" (Anon. 1846, 272). The order mammalia includes humans.

²⁹ For a list of the five facts in summarized form, see Davis Young (1995, 246–247). Price's biographer, Harold Clark (1966, 24), has noticed that a modus operandi of Price was the setting forth of distinctive facts in order to destroy evolution: "He presented a series of 'facts' which he asked the scientific world to consider. These facts he used continually, year after year, in his various books, and demanded the scientific world find an answer to them or else give up the theory of evolution."

³⁰ Speaking of the greatest fact uncovered by Fairholme, which also supported Price's fact no. 2, Price (1913, 74) stated: "Over three quarters of a century ago this principle was recognized. 'I feel persuaded that there is no fact more clear in geology than this; viz, that the upper surface of almost every formation was yet soft and moist when the superincumbent sediments were deposited upon it'" Fairholme (1837, 396).

of the *Yorkshire Coast*, indicating he had probably read Young's 1828 work, and if so he would have been aware of Young's 20 facts. While Price read the writings of about half a dozen SGs, he failed to realize that none of the SGs inserted the entire fossil record into the year of the Flood, which he did.

Instead Price seemed to place greater reliance on a few old-earth, evangelical geologists, who promoted a catastrophic biblical Flood on a grander scale than any local flood: the Canadian geologist John Dawson, the ice-age authority George Frederick Wright, and a Fellow of the Royal Society and Tertiary expert, Joseph Prestwich. These became Price's geological authorities, not the SGs. All of them assigned a widespread, but less-than-universal, Flood to the end of the ice age. They all had one thing in common—they associated Noah's Flood with certain Pleistocene deposits along with H. H. Howorth (Young 1995, 177–183). However, Price was the lone voice advocating Flood geology models based upon a universal Flood that encompassed the Cambrian through Pleistocene strata until about 1930.

Price's work was endorsed and enhanced by the Lutheran creationist Byron Nelson (1894–1972) and popular lecturer/evangelist Harry Rimmer (1890–1952). Nelson in his history of Flood geology, entitled *The Deluge Story in Stone* (1931), stated that the early twentieth century has “produced thus far one very outstanding advocate of the Flood, George McCready Price” (Nelson 1931, 132). Harry Rimmer, the most prolific writer and speaker in fundamentalist circles opposing evolution in the early twentieth century, had equally laudatory comments about Price. Commenting on Price's geology textbook, *The New Geology* (1925), Rimmer considered it to be “the most remarkable and up-to-date book of Geology extant today... a masterpiece of REAL Science” (Numbers 1992, 98). Rimmer died in 1952, but his anti-evolution books were frequently reprinted into the 1970s and continued to exert wide influence among conservatives. Neither Nelson nor Rimmer, however, took over the leadership of the fledgling Flood geology movement.

Price's mantle as defender of Flood geology late in his career was passed along to his esteemed student, Harold W. Clark, who enrolled in Pacific Union College the year that Price started teaching there. Upon Price's leaving, Clark took over his master's position in the biology department. A

cordial relationship continued between the two men until Clark began doing biological field work in the Sierras and became convinced that the deep valleys, such as those at Yosemite, had been sculptured out by ancient glaciers, not by Noah's Flood. Price did not believe in the existence of extensive glaciations or an ice age. Clark's further study in geology led him to accept the reality of the geological column (Clark 1946), which Price had vehemently denied. The two men entered into a feud and soon parted company over these two issues. The rift between the two was accentuated further in the late 1940s when Price late in his career adopted the view that the earth's matter without fossils could be millions of years old based upon the latest findings of radioactive dating, while Clark stood staunchly with the young-earth view (Numbers 1992, 136–137). A good historical source describing the early work of twentieth century Flood geologists is Henry Morris' *History of Modern Creationism* (1984), and this has been supplemented recently with Snelling's analysis of the contributions of Flood geologists since Whitcomb and Morris' epoch work in 1961 (Snelling 2014, 88–102).

Besides Price, Nelson, and Clark, the only other published Flood geologist prior to 1954, when Price's last Flood geology book was published, was Alfred Rehwinkel (1951). These four authors laid the foundation for the launching of the modern Flood geology movement by engineer Henry M. Morris and theologian John C. Whitcomb, who entered into a collaborative relationship. The impetus for their collaboration was the publication of Bernard Ramm's *The Christian View of Science and Scripture* in 1954 in which his main objective was to counteract the influence of George McCready Price and Harry Rimmer within fundamentalist circles (Bernard Ramm 1990, pers. comm.).³¹ The result of the Whitcomb and Morris collaboration was the publication in 1961 of their literary book, *The Genesis Flood*, which had one major goal of counteracting Ramm's arguments and an additional goal of finding up-to-date evidences supporting Price's Flood model (Henry Morris 1990, pers. comm.; Numbers 1992, 198–199).³² They developed what is now known as the Whitcomb-Morris Flood model which incorporates all fossil-bearing formations into the Flood, except for deposits of just one “ice age” immediately after the Flood and a direct result of

³¹ Bernard Ramm (pers. comm. 1990) stated that while he was teaching at Biola Institute of Los Angeles (now Biola University) Rimmer would occasionally appear on campus as a guest lecturer there and would “confuse” students with his Flood geology ideas. This was personally very disturbing to Ramm, thus he decided to revise and publish his classroom lecture notes on science and religion directed specifically against both Rimmer and Price. The result was his very popular work on origins that swayed scores of evangelicals into accepting long ages (Ramm 1954).

³² The index of Whitcomb and Morris (1961) has only four entries for Price, but 42 entries for Ramm. Originally there must have been many times more entries for Price (Numbers 1992, 198–199). Out of hundreds of personal names in the index, the next highest number of entries is for Charles Lyell—16 entries.

the Flood (Whitcomb and Morris 1961, 292–302). This is in contrast to the three prominent Christian geologists half a century earlier—Dawson, Wright, and Prestwich—who placed the Flood at the end of the ice age. Whitcomb and Morris agreed with Price in most issues, except on his denial of evidence for an ice age. They were likely influenced by reading Harold Clark's extensive argumentation in favor of there being a single ice age.³³

SGs never advocated an ice age because what is now associated with ice deposits were originally known as the Diluvium and were ascribed to Noah's Flood. At least one SG referred to the widespread action of ice at the end of the Flood. Andrew Ure described "circumpolar ices" that "formerly descended on our globe into latitudes much lower than at present" based on the discovery of "diluvian glaciers in Denmark" where today there are none plus the discovery of "the carcasses of fossil animals found entire in Siberia" (Ure 1829, 490).³⁴ Throughout their writings SGs made scattered references to the rapidly-frozen mammoths in Siberia that were attributed to the action of the Flood. These evidences were used to counteract long ages. Today YECs consider these evidences to be post-Flood, but within a young-earth paradigm.

Historians of science in recent times have wrongly credited George McCready Price with launching the modern creationist movement (Numbers 1982). Although he did much to revive Flood geology as a viable concept after it had been apparently dead for four decades or more, it was Henry M. Morris who broadened the base of support for creationism beyond geology to include biology and all of the natural sciences. Price provided the seeds of modern creationism in geology, but it is also true that the seeds for modern creationism can be traced back to Harry Rimmer in biology and to others championing an anti-evolution approach prior to 1961. SGs focused almost entirely on geology, while modern creationism has a much broader approach and its birth can be dated to the publication of *The Genesis Flood* in 1961, after which time journals and then societies advocating creationism were formed.

Price's Rejection of Scriptural Geology

One of the strangest developments in Price's long career as an apologist for Flood geology is that late in his career he entirely downplayed the importance of the SG movement, even though he had adopted the

methodology of certain SGs very early on. He set forth some unassailable facts of geology that supported the Flood and a short chronology, just as early SGs had done so. He also totally reinterpreted the conclusions of old-earth geologists and attempted to refute long-ages arguments, just as his predecessors, the SGs, had done. But late in his career he remarked that "others in less prominent positions held to a catastrophic interpretation of geology down until past the middle of the nineteenth century" (Price 1934, 145) after briefly mentioning early nineteenth century catastrophists, such as Woodward and Buckland. Elsewhere he acknowledged that "there were one or two very obscure booklets around the middle of the nineteenth century which taught this view [Flood geology]" (Price 1941, 300). These two quotations seem to be pejorative of the work of SGs, the latter quotation most likely being a reference to SG William Tayler, whose book Price cited elsewhere. The phrase "less prominent" is a dismissal of the importance of SGs, especially in light of recent historical re-analyses of the scientific capabilities of certain SGs (Mortenson 1996, 2004; O'Connor 2007).

Incredibly Price (1934, 134–136) spoke approvingly of Philip Gosse's theory of a "mature creation," giving it more attention than all that he ever said in print about SGs. Gosse (1857) as a creationist and prominent scientist seems to have been the one nineteenth century believer in a young earth and six-day creation that Price admired. From him Price derived the idea of a "mature" creation to explain what happened during Creation Week (Gosse 1857, 135). But Gosse cannot be strictly classed as a SG because he had nothing to say about geology or the Flood. Instead of parading SGs Price adulated the contributions of John Woodward, "the first writer on the flood as the cause of the geological changes and the burial of fossils" (Price 1941, 27). Price (1920, 66) praised Woodward as being "far in advance of his age, though his work is now neglected because he taught these things were proofs of a universal Deluge" in defending the universal Deluge. Also Price (1913, 41–42) highlighted Woodward because he avoided the wild speculations of Thomas Burnet and William Whiston, both early catastrophists.³⁵

Strangely Price elevated the voluminous writings of Sir Henry Howorth as being entirely trustworthy in dismissing any kind of an idea of an ice age and referenced Howorth more frequently

³³ See Clark (1946, 132–170). Whitcomb and Morris (1961, 93, 109) cite Clark's book twice, showing that at least one of the two, probably Morris, had read Clark's 1946 work.

³⁴ In that same passage Ure spoke of animals captured by "the ice which immediately invested the poles" at the end of the Flood (Ure 1829, 490). For most SGs the earth had a tropical climate prior to the Flood, so that the ice caps developed right after the Flood.

³⁵ Years later Price (1934, 145) was still enamored with Woodward, whom he said wrote "a splendid little book" on the Flood, "which embodied all the geological and zoological knowledge then available and which gave good sound arguments for this simple form of the catastrophic theory."

than any other nineteenth century advocate of the Flood, even though Howorth was a believer in long ages.³⁶ Even more remarkable is this admission by Price (1935, 39): “Howorth can hardly be termed a Flood geologist,” although he is acknowledged as being a strong advocate of a worldwide deluge. The other advocates in the late nineteenth century of a historical, geographically widespread Flood were Dawson, Wright, and Prestwich, all of whom were cited by Price, but all of whom upheld long ages and denied a *global* Flood. Price knew of no one in the late nineteenth century who assigned all or nearly all of the fossil record to the Flood, but he praised the work of prominent seventeenth and eighteenth century scholars, who were firm believers in an all-encompassing Flood, such as, Nicolas Steno (1638–1686), John Ray (1627–1705), John Woodward (1665–1722), and Alexander Catcott (1725–1779). These men and not so much the nineteenth century SGs were his mentors and intellectual ancestors for laying the foundation of Flood geology. He never spoke highly of the works of SGs, except when he quoting from George Young (Price 1913, 78). Young included more of the geological record in the Flood than the majority of SGs, so that naturally Price would be partial to him (Price 1913, 78; 1926, 272).

Henry Morris (1984) in his book *History of Modern Creationism* goes a step further than Price and totally ignores the SG movement in its contributions to modern creationism, but like Price he does recognize the contributions of Steno, Woodward, Burnet, Whiston, and other early scientists for introducing Flood geology to the educated world (Morris 1984, 27, 33). Like Price, he would have been fully aware of SGs by having read Byron Nelson’s history of Flood geology, in which the author elaborated on the thinking of SGs Granville Penn, William Kirby, George Fairholme, George Young, and the anonymous writer William E. Tayler (Nelson 1931, 86–113).³⁷

Uniformitarian Thought Amongst Scriptural Geologists

Some attention should be given to the important geological topic of uniformitarianism, popularly known as the idea that “the present is the key to the past.”³⁸ The Harvard University geologist, Stephen J. Gould, “has divided the Principle of

Uniformity into two separate concepts—substantive uniformitarianism (uniformity of process rates or material conditions) and methodological uniformitarianism (invariance of natural laws)” (Nevins 1970, 90). It is the former of the two, substantive uniformitarianism, that was the basis of the geological system promoted by Sir Charles Lyell in the nineteenth century and which was strongly opposed by SGs. Did SGs utilize some aspects of uniformitarianism? Nowhere do SGs deny that the present is the key to the past, but none of the SGs, as far as can be determined, used the term “uniformitarianism.”³⁹ Still uniformitarian concepts are found in their writings, especially as they defend the application of natural laws to geology, which comes under the umbrella of the modern definition, “methodological uniformitarianism.”

The best discussion of natural laws among SGs is found in the writings of the first and hence very influential SG, Granville Penn. He reasoned that the laws of nature were put into operation on the seventh day of creation and have continued as part of God’s ordinances (or laws, as in the Septuagint, Jeremiah 31:35–36) ever since (Penn 1825, 269–270). Penn praised both Sir Francis Bacon and Sir Isaac Newton for demonstrating that God works in nature through his natural laws (Penn 1825, 31). Nolan must have read Penn because he conveys the same adulation of Bacon and Newton using the same wording as Penn (Nolan 1833, 367). Another SG, John Tudor, did not deny the essence of uniformitarianism (the regularity of nature), but he wrote against its extreme forms promulgated by Charles Lyell (Anon. 1847, 109–109). Tudor (Anon. 1847, 124–125) also pointed to the emphasis of both Bacon and Newton on the “uniformity” of nature being based on the laws of God.

Some advocates of the original W-M model reject what they call “the uniformitarian stratigraphic column” because purportedly it is based upon the philosophy of naturalism (Reed 1998; Reed and Froede 2003). According to some Flood geologists today, such as Michael Oard, John K. Reed, and Carl Froede Jr., the CPT model ought to be abandoned because its usage of the geological column as a stratigraphic tool is permeated with some aspects of uniformitarian thinking (Oard 2002; Reed and

³⁶ Like Price, Howorth was a controversialist and largely self-made. He had no formal training in the natural sciences while Price had no formal training in geology. In spite of his lack of training in the sciences Howorth was made a Fellow of the Royal Society against much opposition. See *Wikipedia* on Henry Howorth. In his opus magnum *The New Geology* Price (1923, 570) stated: “The arguments against the glacial theory have been ably presented by Sir Henry H. Howorth,” arguments which Price called “unanswerable” and “have never been met in any adequate or detailed way.” One of his three books on the Flood is *The Mammoth and the Flood* (1887), advocating a theory largely discredited today by YECs.

³⁷ See his laudatory remarks about the contributions of Byron Nelson in *History of Modern Creationism* (Morris 1984, 112–116).

³⁸ For a much more detailed evaluation of the concept of uniformitarianism consult “Is the present a key to the past?”—a chapter in Garner (2009, 75–88).

³⁹ William Whewell (1840, xxxvi) coined the term “uniformitarian” as an antonym to “catastrophist” in geological debates. It took another decade or two before this term was used in geological circles, thus one would not expect SGs to use it.

Froede 2003). These three Flood geologists along with a few others are today's defenders of the traditional W-M model, which puts nearly all of the fossil record in the Flood and denies that the geological column is stratigraphically useful for a Flood model. Timothy L. Clarey (2016) has recently come to the defense of the CPT model by showing that it proposes a balance between natural processes and miraculous events within a catastrophic framework.

The W-M model was no doubt influenced by Price's unqualified rejection of uniformitarianism and his acceptance of a biblically-derived form of catastrophism (Price 1946, 26). His rejection of uniformitarianism seems to have a good biblical basis. Second Peter 3:3–7 speaks of skeptical scoffers who will arise in the last days and argue against the Second Advent on the basis that "all things continue as they were from the beginning" (Price 1941, 24–25). These words are directed by Price against geologists advocating Lyell's extreme form of uniformitarianism. Whitcomb and Morris have duplicated Price's argument that uniformitarianism is ruled out by this biblical passage (Whitcomb and Morris 1961, 451–453).⁴⁰ Many creationists today also apply 2 Peter 3:3–7 as pointing to the dangers of uniformitarian thinking. This is iterated well by Garner (2009, 60) who observes "this [text] sounds remarkably like the principle of uniformitarianism."

Historical Origins of Modern Flood Geology

Modern creationism and Flood geology can be best understood from a historical perspective only by starting with a thorough knowledge of the SG movement. All catastrophic geology models, including CPT, can be legitimized historically on the basis of upholding the SG understanding of natural laws and natural operations as well as the SG support for a world-wide geological stratigraphy. Even though the CCC model is not based upon the geological sequence being reliable, it does mirror the majority of SG views, relegating more than half of the highly fossiliferous portion of the geological column to the antediluvian period. The views of advocates of the CPT model are much closer to the SG understanding of uniformity and a reliable stratigraphy than the views of today's critics of the CPT model. The W-M model supporters who do not incorporate plate tectonics into their model must go back to the seventeenth and eighteenth centuries to find their intellectual roots and historical legitimization, as did both Price and Morris, while skipping over entirely the contributions of SGs. It may be feasible to divide today's Flood geologists into roughly two groups—first, those whose intellectual roots extend well back

into the seventeenth and eighteenth centuries, but skipping over all of the nineteenth century, and second, those who best resonate with the SGs of the nineteenth century, rather than with the views of Flood geologists in the two preceding centuries. Such a division may give greater clarity to all issues being faced by both groups today, especially the one issue of where to assign the pre-Flood/Flood and Flood/post-Flood boundaries.

Conclusions

Today's young-earth creationists can learn much SGs writing in the period of 1820–1860. Their strength is that they balanced erudition in both the natural sciences and biblical studies. Many of them had expertise in the original languages of Scripture. Some of them published articles and books that contributed to the natural sciences in a variety of disciplines, including geology. The modern Flood geology movement should be inspired to strive to attain the highest standards of research. Today's Flood geologists who emphasize the reliability of accelerated plate tectonics and a consistent geological column can find their intellectual roots in the SG movement, whereas those who adhere more closely to the traditional Whitcomb-Morris Flood cannot and do not find their roots there. The weaknesses of SGs are that they failed to resolve many issues that continue to plague Flood geologists today, especially the issue of where to place the biblical Flood in the geological record. A second unresolved issue is what aspects of uniformitarian principles can be useful for creationist studies in light of the statement in 2 Peter 3:3–4 that seems to speak against uniformitarianism. A third issue is how much the appearance of age in the rock record, or mature creationism, can be utilized as a scientific argument for creationism because of appearance of age being outside the ken of science. And a fourth unresolved issue is finding an adequate explanation for the absence of antediluvian human remains in the pre-Pleistocene fossil record. It is probably best to concede that such remains will never be discovered. One SG-generated hypothesis is that all antediluvian humans and mammals were washed out to sea, where they were quickly devoured by marine predators. That conclusion merits further consideration as a possibility. Other SG ideas may merit further study and should not be hastily dismissed.

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⁴⁰ *The Genesis Flood* has more than 50 references to uniformitarianism scattered throughout, according to the index (Whitcomb and Morris 1961, 506–507).

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