

Chapter 24

Beliefs About the Creation of the World Among Teachers in Adventist Schools in Australia and the Solomon Islands

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Introduction

The doctrine of Creation has always been of great importance to Seventh-day Adventists (SDAs), probably because of its connection to one of their crucial distinguishing beliefs—the seventh-day Sabbath (Ex. 20:8–11). For example, as he contemplates “Seven reasons why it really does matter what we believe about Creation”, Greg King states,

The seventh reason why it matters what we believe about Creation is the Sabbath. If we adopt another view on origins [than that expressed in Genesis 1:1–2:3] and are consistent with that view, following it to its logical conclusions, the Sabbath is shorn of its biblical foundation and loses some of its theological significance. (King, 2011, p. 15)

The importance of Creation to the Adventist Church is reflected by the number of books and articles devoted to the topic by Adventist authors. For example, the books by Leonard Brand (2019), Dwight Nelson (2015), and the books edited by Bryan Ball (2012), Humberto Rasi and James Gibson (2011), Harold Coffin, Robert Brown and James Gibson (2005), and John Templeton Baldwin (2000), are but examples from a long procession of books on Creation that have come from Adventist publishing houses. Adventist authors have also published books with non-SDA publishing houses on the topic (e.g., John Ashton, 2000).

In this chapter we outline some of the discussion about Creation that has taken place in the Seventh-day Adventist Church, which

culminated in the statement on Creation that is found in the 28 *Fundamental Beliefs* of the Seventh-day Adventist Church. We then discuss some of the issues experienced by teachers in managing the expectations of the Church while teaching the state-specified curriculum in Australian Adventist schools. The last part of the chapter will be devoted to describing the questions that appeared in the survey of teachers that dealt with Creation, and in analysing the responses by the teachers in Adventist schools in the Australian Union Conference (the AUC), and the Solomon Islands Mission (SIM) in the light of what has been discovered about the context in which they work.

Contribution of George McCready Price

Early Adventist writers such as Uriah Smith (1858), Ellen G. White (1864, 1890), and Alonzo Jones (1883) were conscious of the intellectual threat against a literal interpretation of the Creation account put forward by geologists and biologists (Bootsman, Rogers & de Berg, 2020). Ellen White, for example, says,

God created man in His own image. Here is no mystery. There is no ground for the supposition that man was evolved by slow degrees of development from the lower forms of animal or vegetable life. (White, 1890, p. 45)

But it was George McCready Price who was to prove most influential as an educator in shaping an understanding within and without the Adventist Church that the findings of geologists need not contradict the biblical concept that the world was created by God, and perhaps as recently as 6,000 years ago.

George McCready Price (1870–1963), a Canadian, was never officially educated as a geologist and never developed the skills of a field geologist. He was, however, a voracious reader of geological texts and government geological survey reports, and was responsible for the publication of over 30 books and numerous articles in church journals, many of which were published in the *Review and Herald* and *The Signs of the Times*. Clark (1966) regarded Price as a “Crusader for Creation” and wrote a biography of Price with that title; Weinberg (2014) called Price the “godfather of the modern creationist movement” (p. 685); and Wise (2018) claimed Price “was the leading young-life creationist of the first half of the twentieth century” (p. 683). Despite having no formal education in geology, he was a skilful writer and communicator and made a deep impression on his audiences. Martin Gardner (1957) astutely observed, “So carefully reasoned are Price’s

speculations, so bolstered with impressive geological erudition, that thousands of Protestant fundamentalists today accept his work as the final word on the subject. Even the sceptical reader will find Price difficult to answer without considerable background in geology” (p. 186–87). It was this talent that was to capture the attention of Seventh-day Adventists for at least the first sixty years of the twentieth century.

What also captured the attention of Seventh-day Adventists was the fact that Price held Ellen White in high esteem and, consequently, her metanarrative of Creation and the Flood formed the foundation, either explicitly or implicitly, of all his writings on the topic of science and religion. Her metanarrative, recorded as a vision in Volume 3 of *Spiritual Gifts* (White, 1864), affirmed the six literal days of Creation, the seventh-day Sabbath, and a worldwide Flood of catastrophic proportions. These points, along with White’s mantra on geology as a science “I have been shown that without Bible history, geology can prove nothing” (White 1864, p. 93), were to be taken up with some enthusiasm by Price. Price’s publications in particular sought to show that the geological features of the earth were best interpreted in terms of the global Mosaic Flood; that he did not consider the geology of the time a real science; that the geologic column was an embarrassing mistake because it did not support the idea of the succession of either rock types or life forms; and that the theory of evolution did not have the support of geology and thus was not a viable alternative to the Creation model according to Genesis.

The status of geology as a scientific discipline has not always been accepted even within the scientific community, and Price homed in on this fragile situation to reap a benefit. It is probably best to quote him in his own words so the flavour of his message can be captured. In the preface to his *New Geology* he says,

In various ones of the natural sciences, it has often happened that the theories of one generation have become the dogmatic doctrines of the next. Fortunately, in such sciences as physics, chemistry, and bacteriology, theories are usually short-lived, unless they rest on a solid basis of facts. Fortunately also, the prime postulates at the basis of most of the natural sciences are merely those basic truths of experience and common sense which are capable of being checked up by reality almost at an instant’s notice. In geology, however, we have long labored under the handicap of having several wide-sweeping assumptions lying at the very threshold of our investigations; and these assumptions have shown a phenomenal tenacity of life, because they were of such a nature

that they could not readily be checked up by either experience or experiment. (Price, 1923, p. 5)

Price here reflects a common view held in the United States at this time that combined Francis Bacon's (1561–1626) philosophy of nature based on simple observation and experiment with the “common sense” ideas of the eighteenth-century Scottish philosopher Thomas Reid (1710–1796). Facts wrought through the senses were to take precedence over assumptions, hypotheses, and theories (Holifield, 2004). Price was committed to this view and dedicated his *Fundamentals of Geology* to Francis Bacon and Isaac Newton. Consequently, geology was considered to be at a lower level of sophistication than physics and chemistry and hence not to be relied upon to present the truth. The title page of Price's *Illogical Geology* (1906) contains the following quote from Henry Howarth (1896, preface): “It is a singular and a notable fact, that while most other branches of science have emancipated themselves from the trammels of metaphysical reasoning, the science of geology remains imprisoned in *a priori* theories”.

Among the *a priori* theories, assumptions, or hypotheses that Price chose as his focus of attack were (i) the theory of the molten interior of the earth, because this was the basis of some of the calculations that led to a vast age for the earth; (ii) the theory of uniformity, which was also used to determine a vast age for the earth; and (iii) the theory of a succession of life in a definite order all over the globe, which lent support to evolution theory as descent with modification over vast periods of time through natural selection. With respect to the theory of a succession of life, Price considered there was an unhealthy form of circular reasoning involved:

Geologists do not *prove* this succession of life, as most people suppose, but they *only assume* it as a working hypothesis. And it is unnecessary to show that this succession-of-life idea is only the skeleton of the evolution theory, and that to quote geology in favour of evolution is only reasoning in a circle. (Price, 1902, p. 5)

Similarly, Price believed that geologists used circular reasoning when dating rocks; on some occasions rocks were used to date fossils and, on other occasions, fossils were used to date rocks, so geology was “utterly incapable of any rational proof” (1902, p. 137). This was why geology was sometimes labelled as “illogical”.

However, Price did not strive to deny geology but strove to present a geology based on what he called “inductive principles”. This was

a geology devoid of *a priori* theories and based on facts obtained by observation and experiment. But this was to prove more difficult to achieve in practice. The two chemists, Joseph Priestley (1733–1804) and Antoine Lavoisier (1743–1794), set out to accomplish their chemistry simply through the facts of observation and experiment without recourse to hypotheses and theories. But Priestley could only understand his chemistry through the lens of the *phlogiston* theory and Lavoisier through the *caloric* theory (de Berg, 2014). Thus hypotheses and theories became fundamental to scientific progress. Adventist scientists now realise this. In describing the work of scientists, Brand declares that “Scientists, in the process of discovery, formulate hypotheses or theories, collect data, conduct experiments to test theories, and develop generalisations called scientific laws”. (Brand, 2009, p. 5) What distinguishes some fields of geology, classified as an historical science, from physics and chemistry, classified as experimental sciences, is the significant presence of multiple hypotheses in geology. This arises particularly from its complex nature. Concepts in physics and chemistry are more easily testable by experiment and Price was wanting a geology that was easily testable like physics and chemistry. This was why he dedicated one of his books, *Fundamentals of Geology*, to Newton.

By the beginning of the twentieth century when Price became active in writing his books and journal articles, the role given to the Mosaic Flood as a causal agent in geological phenomena had almost disappeared in geological circles. Much of what had previously been attributed to the biblical Flood was now attributed to the action of glaciers associated with the various “ice ages” of the past. When harmonising, geologists (those sympathetic to the biblical account and science) began to accept the diminishing role of one catastrophic flood, as described in the Bible, for understanding the earth’s geology, Price expressed his concern in these words: “How sad to see such dodging and twisting on the part of the Bible’s professed defenders, instead of taking the record just as it reads, and assigning the great and striking geological changes to their most obvious cause, *viz.*, the Noachian Deluge” (Price, 1902, p. 127). Price’s determination not to shift from a biblical Flood position, in spite of mounting evidence for the contribution of glacial action associated with great ice ages, was to find residence later in the twentieth century in the publication of Whitcomb’s and Morris’s *The Genesis Flood* (1969).

Price (1923, p. 676) thought the geologic column was a phenomenal scientific blunder in a discipline he classified as “the last great stronghold of antibiblical science” (1902, p. 125). According to him, the time scale attached to the column was purely guesswork, as one could not determine whether an underlying stratum of rock was “laid down ten minutes earlier or ten million years earlier” (Price, 1902, p. 132). But the strata proved problematic for Price. If the strata had been slowly laid down over millions of years, one would expect to see a gradual introduction of new species. However, the new species appear suddenly and Price claimed this evidence to be more in keeping with the Genesis Flood:

But these sudden appearances and disappearances are inevitable, and just what we would expect, if, as I have said, these formations do not represent ages, but are simply taxonomic classifications in the life-forms of a complete world that has disappeared from view. (Price, 1902, p. 167)

One rarely sees a complete sequence of rock strata and fossils from Precambrian or Azoic through to Cenozoic without any intervening strata missing. So Price regarded the geologic column as an *invention* by geologists to support evolutionary thinking. How could different pieces of incomplete strata be put together to form the geological sequence shown in the geologic column? Price informs the readers of the *Signs of the Times* that the column is only a “working hypothesis” based on some broad assumptions (Price, 1902, p. 5). It was difficult for Price to assess realistically how the column came to be constructed, given that he had no field experience in geology. Professional geologists were *inventing* the column for subtle anti-biblical purposes but were pragmatically recording the rocks and their characteristics as they observed them in the field. They documented gaps in the stratigraphy of rock formations, proved open to the possibility of different continental and oceanic configurations in prior times, and understood the fragmentary nature of the geological record. This is where the thinking of theoretical philosophers and practising field geologists differed substantially. Field experience inherently included the constant weighing up of hypotheses concerning many variables, as well as the three-dimensional relations of rock strata in different spatial settings, whether near or far. Without training and extensive practice in field mapping, it becomes very difficult to understand correctly and to critique the geologists’ thinking.

What catalysed Price's objection to the geologic column was the existence of "upside-down" rock sequences on the earth's crust. He gives particular attention to Chief Mountain in Montana, where Pre-Cambrian rocks overlie soft Cretaceous shale, a sequence opposite to what one would expect from the geologic column. Based on extensive periods of empirical field-data collection over large distances, geologists concluded that there was evidence of an "overthrust" extending from Montana, through Glacier National Park and into Alberta. This overthrust had pushed Pre-Cambrian rocks over the top of the Cretaceous strata. The fact that the overthrust extended for thousands of kilometres was unbelievable to Price, who again concluded that overthrusts had been invented by geologists to protect the sacred geologic column. As far as Price was concerned, overthrusts were not rocks found in reverse order caused by large scale structural processes, but rocks found in a normal undisturbed sequence. Price wanted to show that all fossiliferous rocks were formed during the same catastrophic event without any chronostratigraphic ordering of fossils. So in some parts of the world one might see Cambrian rocks underneath Cretaceous rocks, but in other parts of the world they could be in reverse order, depending on how the Flood impacted that area. As far as Price was concerned, this was a more common-sense explanation. Price would make highly selective use of the geological reports on the Montana-Alberta sequences to argue for the geologists' *invention* of thrust faults to cover up occurrences of reverse order fossils.

In contrast to Price's earlier publications, his *New Geology* contained some detailed geological content and photographs and was designed to be read as a geology textbook. Some of the geology content had appeared in his earlier publications but the detail was expanded in *New Geology*. Yale University Professor Charles Schuchert, a leading palaeontologist and stratigrapher contemporary with Price, calls the book a "good-looking book, with excellent illustrations [which] gives a first impression of actually being an orthodox and high-grade textbook of geology ... [but on closer examination is actually] a travesty [of] the real science of geology" (Schuchert, 1924, p. 486). Arthur Miller, professor of geology and zoology at the University of Kentucky, had, just prior to the publication of *The New Geology*, acrimoniously accused Price of "holding preposterous opinions [while being] a member of no scientific body and absolutely unknown in scientific circles, [who] has ... had the effrontery to style himself a

‘geologist’” (Miller, 1922, p. 702–3). Miller was especially annoyed with Price because of his,

impugning the competency or integrity, or both, of the distinguished geologists who vouch for [the] existence [of the great thrust faults of the earth]: as that of Heim and Rothpletz for the great Glarus overthrust in the Alps; that of Geikie for the great overthrust in Scotland; that of McConnell, Campbell and Willis for the great overthrust along the eastern front of the Rockies in Canada and northwestern United States, and finally that of Hayes for the numerous overthrusts in the southern Appalachians. (Miller, 1922, p. 702)

The Reverend Father Stephen Richarz was a contemporary of Price and was professor of geology at St. Mary’s Mission House in Techny, Illinois. He had a PhD in geology, had taught geology for several decades, and had contributed original research to accredited geological journals. He was critical of Price’s *The New Geology* and staggering assertions such as,

There is no possible way to prove that the Cretaceous dinosaurs were not contemporary with the late Tertiary mammals; no evidence whatever that the trilobites [*Palaeozoic*] were not living in one part of the ocean at the very same time that the ammonites [*Mesozoic*] and the nummulites [*Cenozoic*] were living in other parts of the ocean; and no proof whatever that all these marine forms were not contemporary alike with the dinosaurs and mammals. (Price, 1923, p. 677)

Like Miller before him, Richarz could not accept Price’s denial of the work of “hundreds of serious and able scientists who devoted their whole life to the construction of the present palaeontological system of recording the sequence of fossils in geologic history” (p. 486). Richarz calmly exposed the fallacies of Price’s argument with examples of overthrusts where proof for their existence “can be obtained [on the basis of their lithology alone] without regard to the fossils contained in the strata” (Richarz, 1925, p. 487). According to Richarz, it is illegitimate to claim, as Price does, that such observed facts are simply a reconstruction by evolutionists to favour their theory. After examining Price’s arguments for rejecting the whole concept of the “overthrust”, Richarz concludes:

There is not a single instance of fossils in the “wrong order” which cannot be accounted for by overthrusts or overturned folds, and careful study in the field shows conclusively that such disturbances are, as a matter of fact, always the cause of the “wrong order”. It is [therefore] false to say that geologists postulate the great overthrusts in order to “explain away wrong sequences of fossils” ... Mr Price

can deceive only those who are strangers in the science of geology.
(Richarz, 1925, p. 488)

Over and above the geological concepts presented, Richarz was concerned with how Price often quoted well-known geologists out of context. He writes: “one single quotation seems to be favourable, but only because the decisive parts of the report of the geologist in question are left out” (Richarz, 1926, p. 10).

While professional geologists generally disagreed with many of Price’s conclusions, his book, *The New Geology*, was favourably received by those who were committed to a literal interpretation of the Genesis account of Creation and the Flood. This was particularly the case for those who were deeply concerned with the idea of theistic evolution. One such case was that of Professor Barry O’Toole and his book, *The Case against Evolution*. Although he had no geological expertise, O’Toole presented Price’s arguments against professional geological stratigraphy in almost verbatim form. For example, he claims that “we are no longer justified in regarding any fossils as intrinsically older than other fossils, and that our present classification of fossiliferous strata has a taxonomic, rather than a historical value” (O’Toole, 1926, p. 108). Clark reports that clergymen of many denominations were helped by Price in the strengthening of their faith in the literal record of Genesis (Clark, 1966, p. 49). Numbers (2006) shows how many of Price’s ideas were to become foundational to the twentieth century Creation science movement, a movement built upon a literal view of the Genesis record.

Geoscience Research Institute

From the 1940s the results of radiometric dating of rocks strengthened the geologists’ position regarding millions of years for the geologic column and even extended the time into billions of years. This was to present an enormous challenge to those Christians who adopted a chronology of the order of 6,000 years for the age of the earth as determined by Ussher. The challenge to Seventh-day Adventist belief, particularly for Adventist schoolteachers of biology and geology, led to the establishment of the Geoscience Research Institute (GRI) in 1958 by the General Conference of the Seventh-day Adventist Church. While Price’s contribution to the science-faith issues was acknowledged, the criticism relating to his lack of formal training in geology and science in general was taken seriously by the Church, to the extent that the Church was determined to staff the

GRI with well-qualified scientists who could understand the depth of the challenges facing the Church. A list of the GRI directors and their scientific specialisation is given in Table 24.1. Staff qualified at doctoral level assisted each director in the work of the institute, which included the organisation of field studies, publications, and curriculum materials for schools and colleges. The GRI was initially housed at Andrews University in Michigan but was relocated to Loma Linda University in 1980, when Ariel Roth took over as director.

Table 24.1
GRI Directors and Their Scientific Specialisation

Date of Appointment	Director	Specialisation
1958	Frank Marsh, PhD University of Nebraska	Zoology and botany
1964	Richard Ritland, PhD Harvard University	Comparative anatomy and palaeontology
1973	Robert Brown, PhD University of Washington	Physics
1980	Ariel Roth, PhD University of Michigan	Zoology, coral reefs, radiation biology, geology
1994	Jim Gibson, PhD Andrews University	Biology
2020	Ronny Nalin, PhD University of Padova	Earth science

To some extent, Price determined the Church’s position on geology and the Flood for the first six decades of the twentieth century. For example, one can see his fingerprint in the 1953 publication of the *Seventh-day Adventist Bible Commentary* on Genesis, and Frank Marsh—who had been one of Price’s students and who was one of the scientists initially involved in the formation of the GRI—copied a whole section from Price’s *New Geology* on the principles of stratification, almost word for word, in his book on *Evolution, Creation and Science* (Marsh 1947, p. 283–86). Marsh also quoted, in full, four large paragraphs from Price’s *New Geology* on creationism and uniformitarianism in his book *Studies in Creationism* (Marsh 1950, p. 108–9) because of “their accurate portrayal of the effect of the assumption of uniformity upon a science which should be of the greatest importance to us” (p. 107).

However, Price’s hold on the science of geology and the Flood was to be broken by another of his students, Harold Clark (1891–1986), who studied under Price at Pacific Union College. In contrast to his mentor, Clark had acquired valuable field experience, which partly led to his re-examination of some of Price’s key positions on geology and the Flood. While remaining committed to Price’s Flood geology as a “universal catastrophe occurring, according to biblical chronology, not many hundred years before the beginning of written history” (Clark 1968, p. 42), Clark mentions that “during the years a few revisions were found necessary” (Clark, 1968, p. 41). The revisions are summarised in Table 24.2.

Table 24.2

Clark’s Revision of Price’s Key Ideas Related to Geology and the Flood

Price’s key ideas	Clark’s revision
Proposal of ice ages and their associated glacial action is an <i>invention</i> by geologists to discredit the biblical record supporting the action of water.	There is strong evidence for glacial action and ice ages and this can be fitted into the Flood theory.
The geologic column purporting to show a regularity of stratified rock types and succession of life forms is an <i>invention</i> by geologists to support the theory of evolution.	There is much more regularity to the stratified rocks than Price had recognised. The results of extended studies in mining geology suggest that, by the middle of the nineteenth century, the validity of the sequence of rock formations had become established beyond any serious question.
The idea of “overthrusts” is an <i>invention</i> by geologists to explain away the upside-down strata of rocks.	There is clear evidence for extensive lateral movements known as “overthrusts”—a point which had hitherto not been recognised by diluvialists.
All fossiliferous strata were formed as a result of the global Mosaic Flood.	The proposition that some Tertiary rocks may have been produced after the Flood seems to have some merit. Studies on Lower Palaeozoic rocks seem to indicate that some reefs may well have had their origin in the deep seas before the Flood, and this seems quite acceptable also.

What seems to have convinced Clark of the legitimacy of the column was the observation that in some places practically the whole

geological sequence could be seen at once. The example of the canyons of the Wind River mountains in Wyoming is given in this respect (Clark 1968, p. 55). This was in contrast to the many areas in which only two or three periods could be found in order in one locality.

Since its establishment, the GRI has followed its charter to provide educational tours as well as research and educational publications. Each of the directors has contributed to the flow of publications, among which can be found Ritland (1970), Marsh (1976), Brown (1979, 1980, 1981) Roth (1998), Gibson (2003, 2004, 2007, 2011), and Nalin (2016, 2018). Each of the other members of the GRI have also contributed to the research and publication output of the GRI, as may be observed in the list of publications in academic and church-related journals that have come from the pens of Ben Clausen, Raúl Esperante, and Tim Standish (www.grisda.org/home-office-staff). The GRI continues its work of responding to the challenges to the concept of a recent Creation that are posed by sciences such as geology and palaeontology. Its website, www.grisda.org, provides a helpful gateway into its current staffing and activities.

The Contributions of Leonard Brand

Leonard Brand is professor of biology and palaeontology at Loma Linda University, California, and has served on the editorial board of *Origins*, the official journal of the GRI. He is a rather distinctive Adventist author in this area, in that his work tends to be less apologetic and more neutral in his treatment of conventional geology and short-age geology, even though he states his bias towards short-age geology including a global flood. An even-handed approach to the topic is more in keeping with what we know about the importance of inquiry methods in science education (Lederman & Lederman, 2020). After discussing the issue of radiometric time data, Brand concludes that “the radiometric time scale is the most significant challenge to short-age geology” (2009, p. 379). While short-age geologists are still researching the issue of time, the current conclusion, according to Brand, is that “belief in a short-age geological model is still based mostly on faith in the Bible account as accurate history” (2009, p. 366). This position can prove problematic for Adventist teachers because the implication is that there is currently not enough scientific evidence to support a short chronology, and thus a six-day Creation event approximately 6,000 to 10,000 years ago, a position largely

supported by our teachers according to the statistical data reported in this chapter.

In his *Faith, Reason, and Earth History*, for example, Brand lists ten evidences that favour conventional geological understanding and megaevolution, alongside ten evidences that favour a short-age chronology in geology (Brand, 2009, p. 386). These are shown in Table 24.3.

Table 24.3

A Tentative List of Ten Evidences Favouring a Short-age Earth-chronology and a List of Ten Evidences Favouring Conventional Geology

Evidence Favouring Intervention and/or Short-Age Chronology	Evidence Favouring Megaevolution and Conventional Geology
Lack of fossil intermediates	Some biogeography
The problem of originating new body plans	Sequence of vertebrate fossils
The problem of originating life	Precise sorting of fossils in the fossil record
Sedimentation rates	Reptile/mammal fossil intermediates
Megabreccias (the larger clasts)	Time required for cooling of laccoliths
Small amount of sediment in the oceans	Glaciation (some of the evidence)
Gaps in the geological record with little or no erosion	Fossil reefs (some)
Rate of erosion of the continents	Stromatolites requiring growth time
Very widespread sedimentary formations	Tidal cycles in sediments
Extensive bedded sediments	Radiometric dating

Note: Megabreccias are sedimentary deposits in which angular rocks called clasts greater than one metre in diameter occur in a matrix of finer material and smaller rocks. Biogeography includes a study of how animal and plant groups distribute themselves across the terrestrial surface and through the oceans. A laccolith is a blister-like intrusion of magma through one sedimentary layer, pushing up a second overlying sedimentary layer without breaking the surface. Stromatolites are mound-like structures formed by cyanobacteria that begin to grow on rocks or other objects and then form layer after layer as sediment collects on the sticky cyanobacteria. It takes up to one thousand years to grow an average-sized stromatolite. Most stromatolites are no longer active.

Brand is aware of the potential criticism of his position from those who would argue that he is mistaken to entertain the idea of “intervention” in science, which relies on methodological naturalism. That is, science is usually seen to operate outside the realm of divine intervention as it encounters natural processes and natural law. Brand justifies his position as follows: “Most scientists would object to considering supernatural causes in geology. Yet the real question is not whether we like it, but whether it happened. If it did happen, it is possible that some evidence of that unique occurrence would be left in the rocks, and we should eventually be able to find that evidence” (Brand, 2009, p. 385). A challenging question for Seventh-day Adventists in relation to Table 24.3 is the following: Where do you think the weight of evidence is strongest; on the right side or left side of the table? Addressing questions like this is fundamental to engaging students and teachers in an open, supportive discussion of the evidences on both sides of the argument. There appear to have been two broad responses to this question in the survey of teachers.

Some, like Brand, favour short-age geology primarily because of their fundamental commitment to a belief in the historical reality of the Creation and Flood narratives in Genesis and the metanarrative given by Ellen White on Creation and the Flood. This is also combined with some scientific evidence that some geological processes must have operated over shorter times than allowed in the conventional model. However, there is a recognition that the major sticking point for short-age geology is the evidence of long ages suggested by radiometric dating. So scientists like Brand encourage other Adventist scientists to focus on doing fundamental research into radiometric dating to try to resolve the issues faced by short-age geologists:

The trend toward more catastrophic processes [in geology] is a movement in the direction predicted by short-age theory. The field of geology will be benefited if more earth scientists actively use the short-age theory in proposing and testing hypotheses about radiometric dating and geologic history, as long as they use careful scientific methodology and benefit from scientific peer review. The excitement of discovery awaits those who are willing to break new ground in research and look at familiar things from a new point of view. But this viewpoint will still need to account for the radiometric age data, not ignore that data. (Brand, 2009, p. 385)

Brand is reasonably confident that progress will be made in this area of investigation:

Some of us predict that we will discover more reasons why radiometric dating, at least in the Phanerozoic, does not give correct times in years. It is only a relative scale of isotope ratios produced by some factor other than time and associated with geological events occurring in a much shorter period of real time. This factor will be a significant process that affects all radiometric processes and will not involve separate “fixes” for each dating method. (Brand, 2009, p. 383)

As far as we are aware, little to no progress has been made in this area.

Others, when looking at the evidence in Table 24.3, are persuaded that the weight of evidence is firmly on the side of conventional geology and biological evolution. They find the evidence on this side of Table 24.3 so profoundly convincing as practising scientists that to deny the overall legitimacy of the evidence would be to deny their profession. The big sticking point for a Seventh-day Adventist in this category is the issue of scriptural interpretation and the legitimacy of the writings of Ellen White. The focus of research amongst members in this group therefore is on biblical studies, theology, and Adventist history. This is not to suggest that scientific research is not important for this group and biblical research is not important for the first group. But it is where the sticking point lies for each group.

The 1980 Statement of the 28 *Fundamental Beliefs* of the Seventh-day Adventist Church and Its Revision in 2015

It was only after 120 years of official existence as a denomination that Seventh-day Adventists devoted themselves to the task of writing an official set of Fundamental Beliefs and to vote them in General Conference Session. This process is outlined elsewhere in the book (see discussion in Chapter 25; also Campbell 2016). While it is an oversimplification, a case can be made that at various points of their history, SDAs had three basic statements of belief—two unofficial, one official. The first set is attributed to Uriah Smith, who published an unofficial list of “Fundamental Principles Taught and Practiced by Seventh-day Adventists” in 1872 (Höschele, 2020; Kidder 2009). Smith provided a paragraph description of 25 separate beliefs, none of which were exclusively devoted to Creation. But Principle 1 noted that God created all things, when it said of him:

That there is one God, a personal, spiritual being, the creator of all things, omnipotent, omniscient, and eternal, infinite in wisdom, holiness, justice, goodness, truth, and mercy; unchangeable, and everywhere present by his representative, the Holy Spirit. (Olson & Haloviak, 1978, p. 7)

The statement of Fundamental Principles, published in the 1889 *Yearbook*, repeated this wording exactly (YB1889, p. 147). The statement of Fundamental Principles is missing from the SDA *Yearbook* between 1890 and 1930 (e.g., YB1890, YB1930).

A second major revision of the Fundamental Beliefs was undertaken by an *ad hoc* committee consisting of C. H. Watson (General Conference [GC] President), F. M. Wilcox (Editor of the *Review and Herald*), M. E. Kern (Associate Secretary of the GC), and E. R. Palmer (Manager of the Review and Herald Publishing Association). It was not taken to the General Conference Session for a vote (deliberately), but it was published with minor revisions under the title, “Fundamental Beliefs of Seventh-day Adventists” in each of the editions of the *Seventh-day Adventist Yearbook* between 1931 and 1979 (YB1931, p. 377–80; YB1979, p. 5–6).

While the 1931 set of *Fundamental Beliefs* retained much of the wording of the first two paragraphs of Uriah Smith’s set of beliefs, they pointed to Jesus Christ as the one, “through whom all things were created”. The wording of statement 2 reads:

That the Godhead, or Trinity, consists of the Eternal Father, a personal, spiritual Being, omnipotent, omnipresent, omniscient, infinite in wisdom and love; the Lord Jesus Christ, the Son of the Eternal Father, through whom all things were created and through whom the salvation of the redeemed host will be accomplished; the Holy Spirit, the third person of the Godhead, the great regenerating power in the work of redemption. Matt. 28:19. (YB1931, p. 377; YB1979, p. 5)

The third major revision of the *Fundamental Beliefs* of Seventh-day Adventists took place in a set of committees, initiated at the GC, but with major input from an ad-hoc committee of Andrews University, which co-opted several prominent academics from the Seventh-day Adventist seminary, who met with key General Conference personnel, as well as Robert Brown and Harold Coffin from the GRI (see helpful timeline in Trim & Baker, 2014, p. 45–47; Geraty, 2015, p. 5). This revision expressed the *Fundamental Beliefs* of the Seventh-day Adventist Church in 27 numbered paragraphs (subsequently changed

to *28 Fundamental Beliefs* in 2005; see *Fundamental Beliefs*, 2004). One of the paragraphs was devoted entirely to the doctrine of Creation (number 6). This particular paragraph was discussed on the floor of the General Conference Session in an afternoon business meeting on April 22, 1980. Several issues were raised from the floor:

- Should the word, “only” occur in the sentence, “God is Creator of all things, and has revealed in Scripture the [only] authentic account of His creative activities”? A comment from the floor of the business session inquired as to whether Ellen White’s visions might not contain authentic descriptions of Creation (GCB1980-06, p. 20).
- Should the word, “literal”, be added to the sentence, “In six [literal] days the Lord made ‘heaven and Earth’”? The answer given at the GC Session was that the days of 24 hours were implied by the linking of the seventh day of Creation and the Sabbath (GCB1980-06, p. 20).
- Whether the wording should be widened, as the wording presented to the GC Session only spoke of God’s creating the world, rather than God’s acts of Creation (GCB1980-06, p. 20).
- Whether the word, “inanimate”, should be included in the sentence, “The Lord made heaven and Earth and all living [and inanimate] things”? The General Conference President, N. C. Wilson, passed this question to A. A. Roth (who was appointed director of the GRI in 1980), who responded, “We have been discussing this point for well over a hundred years, and we have not settled it yet” (GCB1980-06, p. 20).

The wording of *Fundamental Belief*, no. 6, voted at the GC Session reads as follows [words added to the statement at subsequent GC Sessions are included in square brackets; words subsequently deleted at GC Sessions have been crossed out with a line]:

6. Creation

~~God is Creator of all things and~~ [God] has revealed in Scripture the authentic [and historical] account of His creative activity. ~~In six days~~ [He created the universe, and in a recent six-day creation] the Lord made “the heavens and the earth, the sea, and all that is in them” and rested on the seventh day. Thus He established the Sabbath as a perpetual memorial of the work. [He performed and completed during six literal days that together with the Sabbath constituted the same unit of time that we call a week today.]

The first man and woman were made in the image of God as the

crowning work of Creation, given dominion over the world, and charged with responsibility to care for it. When the world was finished it was “very good,” declaring the glory of God. (Gen. 1-2; [5; 11]; Ex[od]. 20:8-11; Ps. 19:1-6; 33:6, 9; 104; [Isa. 45:12, 18; Acts 17:24; Col. 1:16;] Heb. [1:2;] 11:3; John 1:1-3; Col. 1:16, 17 [Rev. 10:6; 14:7].) (GCB1980-09, p. 23; YB1980, p. 5; 28 *Fundamental Beliefs*, 2020)

On the basis of the authority of the Bible, the statement asserts that God created the world in six days. It also links Creation with the Sabbath, and confirms the Creation of men and women in the image of God.

Fundamental Belief, no. 6, was intended to underline the beliefs common to Seventh-day Adventists that Creation took place during a literal six-day period, that men and women are created beings, and, most importantly, that humans are not the product of a long period of evolution.

The issues surrounding the challenges of geology and palaeontology continued to simmer in Adventist academic circles through the 1990s. At the initiative of the General Conference Annual Council in 2001, a series of conferences on faith and science were organised in most Divisions of the World Church, which resulted in a statement affirming a six-day Creation and recommending that it should be taught in Adventist schools and universities (Pfandl, 2005, p. 13–15). The action voted at the 2005 General Conference Session included the following statement:

We call on all boards and educators at Seventh-day Adventist institutions at all levels to continue upholding and advocating the church’s position on origins. We, along with Seventh-day Adventist parents, expect students to receive a thorough, balanced, and scientifically rigorous exposure to and affirmation of our historic belief in a literal, recent six-day creation, even as they are educated to understand and assess competing philosophies of origins that dominate scientific discussion in the contemporary world. (<https://www.adventist.org/articles/response-to-an-affirmation-of-creation>)

In 2005, Gerhard Pfandl surveyed the range of ideas about Creation that he had found advocated by various Seventh-day Adventist scientists and theologians and published his results in the Church’s semi-official magazine for ministers, *Ministry*. He noted that as far back as M. C. Wilcox, in 1898, some Adventists interpreted Genesis 1:1 as the Creation of the universe, which took place billions of years ago, while the rest of Genesis 1 described the Creation of the earth

itself, which took place over a six-day period (Pfandl, 2005, p. 8). Other Adventists have considered Genesis Chapter 1 to describe the Creation of the universe, as well as our world, all of which took place in six days. Pfandl goes on to identify a new approach adopted by some Adventists that started sometime in the 1950s and which used a model that involved some kind of theistic evolution. He then notes that the first two decades of the work of the GRI was marked by tension between those that gave priority to the statements of Scripture and Ellen White and used these to try to make sense of the scientific data, and those who prioritised such evidence as radioactive decay to date Creation week hundreds of millions of years ago (Pfandl, 2005, p. 9–10). Since about 1980, though, he says,

Only scientists who accept the Scripture record as it reads were on the staff [of the GRI]. In Adventist schools and universities, however, the picture was different. A number of science teachers tended to lean more and more towards theistic evolution. (Pfandl, 2005, 10)

The growing rise of models based on theistic evolution was a matter of great concern to some teachers, scientists, and church administrators. There was concern that the wording of Fundamental Belief, no. 6 [Creation], had enough ambiguity to allow some forms of theistic evolution. For example, Sergio Silva argues that:

This means that Fundamental Belief #6, as it reads today, can be used to support any approach to the biblical account of Creation, including progressive Creationism, theistic evolution, etc. (Silva, 2010, 33)

David Trim emphatically denies that the intent of those formulating the original statement on Creation in 1980 intended the wording to allow theistic evolution. He says:

There is no contemporary evidence—none—that Fundamental Belief, no. 6, was written to allow for belief in theistic evolution; and that nobody at the time, even very conservative Seventh-day Adventists, criticised it on those grounds ... while the wording of Belief no. 6 was written to unite, rather than to divide, and to make room for different perspectives on creation, its authors never contemplated enabling or allowing for belief in the evolution of life forms over millions of years, via Darwinian mechanisms, presided over by a beneficent but distant deity. Rather, the wording of Belief no. 6 was meant to make room for different young-earth, seven-day creationist views. (Trim, forthcoming)

Eventually, the Biblical Research Institute (BRI) was given the task of developing suitable wording that ensured that the statement

about Creation in the *Fundamental Beliefs* clearly ruled out any possibility of being read to allow any evolutionary models for the development of life. The result of their extensive consultation was brought before the 2015 General Conference Session that met in San Antonio, TX. A reasonably complete summary of the discussion from the floor may be read in the official *General Conference Bulletins* (GCB2015-05, p. 37–38, 41 and GCB2015-06, p. 39–40; see also the summary provided in Geraty, 2015). A number of issues were raised from the floor:

- Whether the adjective “global” or “worldwide” should be used to describe the Flood (GCB2016-05, p. 37). The concerns were that “global” is a word not found in the Bible, but “worldwide” is sometimes interpreted to mean the world as it was known to the ancients (i.e., not global).
- That the statement’s wording implies that God created all things at once (including the entire universe). But Adventists believe that the great controversy occurred before the Creation of the earth. Time needs to be allowed for Satan’s rebellion in heaven (GCB2016-05, p. 37).
- The proposed changes will exclude members who are very loyal to the Church (GCB2016-05, p. 37).
- What is meant by the word, “recent”? Does it mean 6,000, 50,000, or 1 billion? (GCB2016-05, p. 38). Artur Stele (chair of BRI) responded, “Concerning the word ‘recent,’ no one knows exactly the number of years. To clarify ‘recent,’ we have added here a reference to Genesis 6”. (GCB2016-05, p. 38). In the business meeting, somebody attempted to have the word “recent” removed on the grounds that it was not used of Creation in Scripture. The comment was referred back to the committee that was considering the wording. The word “recent” was preserved in the version brought back to the floor of the business meeting the next day. The General Conference President, Ted Wilson, supported keeping the word “recent”, by saying, “We have come to the point where we need to clarify that this process [of Creation] is not old. So ‘recent’ is supposed to mean ‘not old.’ Personally I firmly believe what the Spirit of Prophecy has indicated and with what we have understood in terms of biblical historicity that the earth is approximately 6,000 years old” (GCB2016-06, p. 40).

- The wording “historic account” seems inappropriate given that Creation occurred in pre-historic times. Furthermore, “historiography is an atheistic endeavor, and it doesn’t operate with the supernatural” (GCB2016-05, p. 41).
- Clifford Goldstein said, “For decades now there has been an attempt, one way or another, to try to bring into our church an ideology that is completely, totally foreign and alien to biblical principle. We are doing this purposely to exclude evolution” (GCB2016-06, p. 40).

As may be observed in the final version of *Fundamental Belief*, no. 6, Creation, cited earlier in this section, the words “God is Creator of all things” were removed (he didn’t create the atom bomb, for example) and a sequence was introduced that permitted an interval between creating the universe and the six-day Creation that formed the earth, while the word “recent” remained.

Implications for Teachers in Adventist Schools in Australia

The demand that Creation science be taught alongside the theory of evolution in schools has for many years been a topic of intense debate in North America, and teachers in the South Pacific follow the debate from afar. Nor does the debate in North America appear to be subsiding, at least as far the teaching of evolution and/or Creation science in public schools is concerned (e.g., Scott, 2019, p. 1034–35; Wexler, 2019; Thorpe, 2018, *passim* but especially p. 14–17; Berkman, Pacheco & Plutzer, 2008).

In most states across the USA, private schools have leeway when it comes to the teaching of Creation vs. evolution. The situation in Australia is different. Australian Adventist teachers are now bound to a National Curriculum (<https://www.australiancurriculum.edu.au>). The concepts of long ages and biological evolution appear in the Year 10 science curriculum under biological science as follows: “The theory of evolution by natural selection explains the diversity of living things and is supported by a range of scientific evidence”, and under earth and space science as follows: “The Universe contains features including galaxies, stars and solar systems, and the Big Bang theory can be used to explain the origin of the universe”. These topics are further elaborated in Unit 3 of the senior curriculum, which deals with heredity and continuity of life. In the discussion that surrounds

evidence for evolution and human evolution it is stated that “Life has existed on Earth for approximately 3.5 billion years and has changed and diversified over time”. How do Adventist teachers approach such topics?

Teachers in Adventist schools have tended to respond by retaining both the short-age chronology and the long-age chronology alongside each other in creative tension. This is an approach that was suggested by Hasok Chang (2012), philosopher of science at Cambridge University, in dealing with changing ideas in chemistry. If chemists of the nineteenth century had allowed the *phlogiston* theory of combustion (the trigger for the reaction resides within a substance) to remain alongside the *oxygen* theory (the trigger for the reaction resides external to the substance), the development of the thermodynamic concepts of *internal energy* and *free energy* would, according to Chang, have developed sooner and have been richer in content than was the case after *phlogiston* was effectively removed from consideration when the French idea of *oxidation* surfaced.

One way of encouraging this creative tension approach is to consider the development of an Adventist version of the *Test of Faith Project* that was developed in the UK around 2009 (www.testoffaith.com). The materials consist of a DVD (*Does Science Threaten Belief in God?*), a book entitled *Spiritual Journeys with Scientists*, a study guide entitled “Science and Christianity Unpacked”, and a Leader’s Guide to the Study Guide. In relation to the Creation account in Genesis 1, three commonly held views (including the short- and long-age versions) are discussed in the DVD and students are asked to read Genesis 1 carefully and then discuss the following. What follows is just a sample from a larger project.

1. What are the most important messages of this passage? What does it say about God? About God’s relationship with the universe? About God’s relationship with people?
2. What part does the timescale have to play in thinking about the main messages in Genesis 1?
3. There are three views of Creation in Genesis 1 discussed in the DVD. They are: 1. A literal six-day Creation; 2. Creation over long periods of time; 3. Symbolic of God’s act of Creation. Many other views are variations of these. Which of these views have you come across before?

4. View 3 thinks of Genesis 1 as a piece of literature that describes a real event in non-scientific language that has a deeper meaning. Can you give any examples of stories in the Bible that have a deeper meaning?
5. Can you give an example of a story being used in the Bible to explain a real event?
6. What do you think of the idea that Genesis 1 might also have a deeper meaning?

An Adventist version could focus on the significance of the Sabbath in the Creation account. Books by Turner (2004), Guy (1999), Bull & Guy (2011), and Ball (2012) can be most helpful in this regard. An education that presents a range of options for teachers and students to discuss openly the range of views will be more effective in faith development than an education that forcibly silences a discussion of any option that sits outside of a belief system.

Survey Results

Five separate items were included in the survey that deal with Creation and creationism in one way or another. They are:

- Q62p/Q86h: “I believe God created the world”.
- Q62q: “I believe God created the world in exactly six days of 24 hours each”.
- Q62r: “I believe God created the world in the recent past (e.g., within the last 6,000 to 15,000 years)”.
- Q62s: “I believe the world is millions of years old”.
- Q62t: “Evolution is the best explanation for the origins of human life on Earth”.

Several of the issues about Creation/evolution/geology that have been discussed among SDAs, and which surfaced with urgency in the debate about the exact wording of the Fundamental Belief, no. 6, Creation, at both the 1980 and 2015 General Conference Sessions, are addressed in these items, *viz.*:

- Did God create the world and life upon it (Q62p/Q86h) or does evolutionary theory provide a better explanation of the origin of the diversity of life on earth (Q62t)?
- Was the world created in the recent past—say 6,000 or 15,000 years ago (Q62r)?
- Is the world itself millions of years old (Q62s)? (Note that in the wording of Q62s, the possibility of the existence of the earth long before the Creation of life on it is not mentioned.)

It is perhaps worth noting that Fundamental Belief, no. 6 only speaks of six days and does not, as does Q62q, specify the period of each day as 24 hours (although the 24-hour period is implied). Nor does it mention a figure of 6,000 years as the time elapsed since Creation, as does Q62r, only that the world was created “recent”-ly. The teachers’ responses may be observed in Tables 24.4 to 24.6.

Table 24.4
Responses to Items Relating to Creation/Evolution

	62p/86h: “I believe God created the world”			62t: “Evolution is the best explanation for the origins of human life on Earth”		
	AUC tot	AUC wkly	SIM	AUC tot	AUC wkly	SIM
<i>Strongly DISAGREE</i>	1.3%	0.9%	0.8%	87.3%	86.0%	79.2%
<i>Disagree more than agree</i>	1.3%	0.9%	0.0%	2.8%	4.0%	7.5%
<i>I really don’t know</i>	2.0%	0.9%	0.0%	2.8%	2.0%	5.7%
<i>Agree more than disagree</i>	1.3%	0.0%	4.8%	2.8%	4.0%	0.0%
<i>Strongly AGREE</i>	94.1%	97.2%	94.4%	4.2%	4.0%	7.5%
No. of responses	153	106	124	71	50	53

- Notes on Tables 24.4 to 24.6:
1. AUC = Australian Union Conference of Seventh-day Adventists; SIM = Solomon Islands Mission.
 2. AUC Tot/SIM Tot = AUC teachers who are over 20 years of age and employed in an Adventist school or Conference or mission.
 3. AUC Wkly = AUC Teachers who answered “yes” to the question, “Are you a Seventh-day Adventist”, and indicated that they attend church at least once a week. See explanation in Chapter 27.
 4. Solomon Islands = Teachers in Adventist schools in the Solomon Islands Mission of Seventh-day Adventists.

The two statements, which have responses reported in Table 24.4 (62p/86h and 62t), both relate to whether the origin of human life on Earth is to be understood as coming about by special creation, or whether it results from processes, including the process of evolution. It appears from the results reported in Table 24.4 that one of the fears that led to the revision of the sixth Fundamental Belief at the 2015 General Conference Session—that evolution is becoming widely accepted among Adventist teachers—is groundless. All the teachers

in the AUC and SIM, Adventist and non-Adventist alike, believe in Creation; almost all of them (more than 90% in both the AUC and SIM) reject evolution as an explanation of the origins of human life on Earth. This result might be compared to the 2013 survey, in which 70% of Australians stated that they believed “evolution is currently occurring” (Wyatt & Stolper, 2013, p. 15).

A separate statement was provided to assess whether teachers agreed that the world was created in exactly six days of 24 hours each. While a majority of teachers in both the AUC and SIM agreed with Statement 62q, “I believe God created the world in exactly six days of 24 hours each”, 24% of AUC teachers were either uncertain or disagreed (see Table 24.5).

Table 24.5

Responses to the Statement, “I believe God created the world in exactly six days of 24 hours each”

	AUC tot	AUC wkly	SIM
<i>Strongly DISAGREE</i>	5.7%	8.2%	0.0%
<i>Disagree more than agree</i>	5.7%	6.1%	1.9%
<i>I really don't know</i>	12.9%	12.2%	5.6%
<i>Agree more than disagree</i>	10.0%	4.1%	13.0%
<i>Strongly AGREE</i>	65.7%	69.4%	79.6%
No. of responses	70	49	54

The results recorded in Table 24.5 may be compared to the Global Church Member Survey of 2013, in which 69% of participants from the SPD strongly agreed that the world was created in six days of 24 hours. In that survey, 13% either strongly disagreed or disagreed more than agreed (Gane, 2013, p. 37). The same question was repeated in the 2017 Global Church Member Survey, in which 66% strongly agreed with the statement, and 4% either strongly disagreed or disagreed more than agreed. The teachers in the AUC and SIM clearly tend to reflect the general church understanding of the six-day Creation.

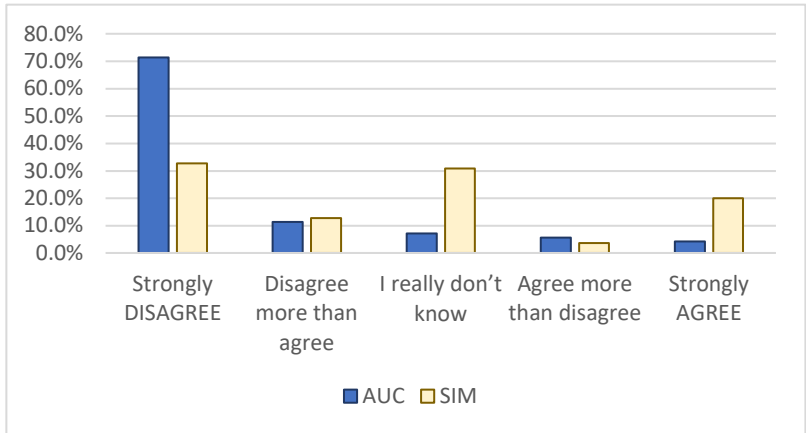
The responses to the questions recorded in Table 24.4 have revealed that almost all the teachers in the AUC and SIM believe that the world was created by God. Two further items on the survey allowed them to consider how recent this creation might be. The teachers were offered options of 6,000 to 15,000 years in Item 62r, and millions of years in Item 62s. Their responses are recorded in Table 24.6.

Table 24.6
Responses to Items Relating to Age of the Earth

	62r: “I believe God created the world in the recent past (e.g., within the last 6,000 to 15,000 years)”			62s: “I believe the world is millions of years old”		
	AUC tot	AUC wkly	SIM	AUC tot	AUC wkly	SIM
<i>Strongly DISAGREE</i>	11.6%	14.3%	20.4%	71.4%	74.0%	32.7%
<i>Disagree more than agree</i>	0.0%	0.0%	13.0%	11.4%	10.0%	12.7%
<i>I really don’t know</i>	8.7%	8.2%	22.2%	7.1%	6.0%	30.9%
<i>Agree more than disagree</i>	7.2%	4.1%	13.0%	5.7%	6.0%	3.6%
<i>Strongly AGREE</i>	72.5%	73.5%	31.5%	4.3%	4.0%	20.0%
No. of responses	69	49	54	70	50	55

The responses recorded in Table 24.6 reveal that a majority of teachers in the AUC believe in a short chronology for the age of the earth. In fact, 80% of AUC teachers believed that the world was created between 10,000 and 15,000 years ago—a result which might be compared to the fact that, in 2009, only 23% of the Australian population believed that the world was created about 10,000 years ago, while a further 32% of Australians thought that God guided a long process over time (Marr, 2009). That the results from the Solomon Islands are different is evident in Figure 24.1, below.

Figure 24.1
62s: “I believe the world is millions of years old”



Unlike their responses to Statements 62p/86h, 62q, 62r, and 62t reported above, the difference in the responses of the AUC and SIM teachers to Statement 62s is statistically significant [a Mann-Whitney Test gives the following result for Statement 62s: $U(N_{\text{AUC}}=70, N_{\text{SIM}}=55)=1056.000, z=-4.743, p<0.000$]. There are two likely reasons for the higher rate of agreement to Statement 62s found in the SIM teachers. Firstly, while some teachers in the SIM are well-informed about the debate about the age of the earth taking place in Adventist circles, a significant number of them are not, especially given that the “majority of our Adventist teachers in the Solomons have not been educated in our own [i.e., Adventist] tertiary institutions” (David McClintock, private communication). Secondly, there is a general feeling that the earth is ancient that is rooted in many traditional Melanesian cultures. In traditional Melanesian societies time is not necessarily conceived of as linear, so it is hard to know exactly how “ancient” might be understood. But given that 20% of participants strongly disagreed that the world is 6,000 to 15,000 years old (Table 24.6), the presence of the numbers in Question 62r appears to have presented participants with a time frame shorter than one with which many of them are comfortable. About the same proportion who strongly disagreed with Statement 62r, strongly agreed with the statement in Question 62s that the world is millions of years old (Table 24.6).

While anecdotal evidence from those that have grown up in Melanesian cultures has been unanimous that the Melanesian cultures

they are familiar with consider the earth to be very old, it has proved difficult to document conceptions among Melanesian cultures about the age of the earth from written sources. This appears to be a topic open to further research. No items equivalent to 62r and 62s were included in either the 2013 or 2017 Global Church Member Survey, so this potential source has also been unavailable as a benchmark. It is planned that in future the survey project will include results from teachers from many different cultures around the world, and it will be interesting to see how many of them show a response pattern similar to that observed among the teachers in the SIM.

Conclusions

It may be concluded from the data in Table 24.4 that an overwhelming majority of teachers in Adventist schools in the AUC and SIM believe that God created the world (more than 94% strongly agree). When the details of this belief are teased out, it is apparent that more than 65% strongly agree or agree that the world was created in six days of 24 hours. Furthermore, the AUC teachers think that this event took place as recently as 6,000 to 15,000 years ago (72% plus strongly agree or agree), although, possibly for cultural reasons, one in five teachers in the SIM disagreed with the short time frame. Over 85% of teachers either strongly disagree or disagree with the proposition that a mechanism of evolution is the best explanation of the origin of human life on Earth, and 83.5% of AUC teachers do not think that the world is millions of years old. From these data it appears to be true to say that the teachers in both the AUC and SIM support creationism, while a clear majority of teachers in the AUC also support a literal reading of a day of Creation as being 24 hours and they believe that Creation took place about 6,000 to 15,000 years ago.

References

- Ashton, J. F. (2000). *In six days: Why fifty scientists choose to believe in creation*. Green Forest, AR: Masters Books.
- Baldwin, J. T. (Ed.). (2000). *Creation, catastrophe and calvary*. Hagerstown, MD: Review and Herald.
- Ball, B. W. (Ed.). (2012). *In the beginning—Science and scripture confirm creation*. Nampa, Idaho: Pacific Press Publishing Association.

- Berkman, M. B., Pacheco, J. S., & Plutzer, E. (2008). Evolution and creationism in America's classrooms: A national portrait. *PLOS Biology* 6(5), 920–24.
- Bootsman, C. B., Rogers, L. J., & de Berg, K.. (2020). Early Adventist understandings of the flood: Ellen White and other 19th century pioneers. In L. J. Rogers (Ed.). *The biblical flood: The context and history of Seventh-day Adventist understanding* (p. 115–48). Cooranbong, NSW: Avondale Academic Press.
- Brand, L. (2009). *Faith, reason, & Earth history: a paradigm of Earth and biological origins by intelligent design* (2nd ed.). Berrien Springs, MI: Andrews University Press.
- Brand, L. (2019). *Genesis and science: Where is the evidence going?* Nampa, ID: Pacific Press.
- Brown, R. H. (1979, August). Science and religion: Conflict and agreement. Biblical interpretations of origins, chronology, and geology are becoming less an effort of faith. *Ministry* 52(8), 26–27.
- Brown, R. H. (1980, November). Theistic evolution. *Ministry* 53(11), 24–25.
- Brown, R. H. (1981, March). How old is the world? *Ministry* 54(3), 24–25, 27.
- Bull, B. & Guy, F. (2011). *God, sky, and land*. Roseville, CA: Adventist Forum.
- Campbell, M. W. (2016). Seventh-day Adventism, doctrinal statements, and unity. *Journal of the Adventist Theological Society* 27, 98–116.
- Chang, H. (2012). *Is water H₂O? Evidence, realism and pluralism*. Dordrecht: Springer.
- Clark, H. W. (1966). *Crusader for creation: the life and writings of George McCready Price*. Mountain View, CA: Pacific Press Publishing Association.
- Clark, H. W. (1968). *Fossils, flood, and fire*. Escondido, CA: Outdoor Pictures.
- Coffin, H. G., Brown, G. H., & Gibson, R. J.. (Eds.). (2005). *Origin by design*. Hagerstown, MD: Review and Herald.
- de Berg, K. C. (2014). Teaching chemistry for all its worth: The interaction between facts, ideas, and language in Lavoisier's and Priestley's chemistry practice: The case of the study of the composition of air. *Science & Education* 23(10), 2045–2068.

- The Fundamental Beliefs and “Growing in Christ”: Proposal for a new Fundamental Belief. *Ministry* 76(6), 20–21, 23–26.
- Fundamental Beliefs of Seventh-day Adventists. (2020). <https://www.adventist.org/wp-content/uploads/2020/06/ADV-28Beliefs2020.pdf>
- Gardner, M. (1957). *Fads and fallacies in the name of science*. New York: Dover.
- GCB1980-06. (1980, April 24). Ninth business meeting, Fifty-third General Conference session, April 22, 1980, 3:15 p.m. *General Conference Bulletin No. 6, Adventist Review*, 18–23.
- GCB1980-09. (1980, May 1). Session actions: Fundamental Beliefs of Seventh-day Adventists—Church Manual Revision. *General Conference Bulletin No. 6, Adventist Review*, 23–27.
- GCB2015-05: (2015, July 8). *Adventist Review: General Conference Session Bulletin 5*. Retrieved 22 December 2020, from www.adventistreview.org/assets/public/issues/1518/1518.pdf.
- GCB2015-05: (2015, July 9). *Adventist Review: General Conference Session Bulletin 6*. Retrieved 22 December 2020, from www.adventistreview.org/assets/public/issues/1519/1519.pdf.
- Geraty, L. (2015, Summer). How the Adventist Church changed its Fundamental Beliefs in San Antonio. *Spectrum* 43(3), 69–72.
- Gibson, L. J. (2003). Contributions to creation theory from the study of nature. *Journal of the Adventist Theological Society* 14(1):138–149.
- Gibson, L. J. (2004). Issues in “intermediate” models of origins. *Journal of the Adventist Theological Society* 15(2):71–92.
- Gibson, L. J. (2007). God and nature: A biblical approach to origins. *Ministry* 79(11):16–20.
- Gibson, L. J., & Rasi, H. M. (Eds.). (2011). *Understanding creation*. Nampa, ID: Pacific Press.
- Guy, F. (1999). *Thinking theologically: Adventist Christianity and the interpretation of faith*. Berrien Springs, MI.: Andrews University Press.
- Holifield, E. B. (2004, March 25). *The odd couple: Theology and science in the American tradition*. [Lecture]. Emory University, Atlanta, GA..
- Höschele, Stefan. (2020). The 1872 Declaration of Fundamental Principles: on the contextual-theological significance of Adventism’s first statement of beliefs. *Spes Christiana* 31(2), 25–46.

- Howarth, H. (1892). *The glacial nightmare and the flood: A second appeal to common sense from the extravagance of some recent geology* (2 vols.). London: Sampson, Low & Marston.
- Jones, A. T. (1883). The uncertainty of geological science. *Adventist Review and Sabbath Herald*, 60(32), 497–98; 60(33), 513–14; 60(34), 529–30.
- Kidder, J. (2009). Creeds and statements of belief in early Adventist thought. *Andrews University Seminary Studies* 47, 101–16.
- King, G. A. (2011, June). Is biblical creation important? Seven reasons why it really does matter what we believe about creation. *Ministry* 83(6), p. 13–16.
- Lederman, N. G., & Lederman, J. (2020). Nature of scientific knowledge and scientific inquiry. In Akerson, V. L. & Buck, G. A. (Eds.). *Critical questions in STEM education, Contemporary Trends and Issues in Science Education*, 51. Cham, Switzerland: Springer, 3–20.
- Marr, D. (2009, December 19). Faith: What Australians believe in. *The Age*. <https://www.theage.com.au/national/faith-what-australians-believe-in-20091218-l5qy.html>
- Marsh, F. L. (1950). *Studies in creationism*. Washington DC: Review and Herald Publishing Association.
- Marsh, F. L. (1976). *Variation and fixity in nature*. Omaha, NE: Pacific Press.
- Marsh, F. L. (1947). *Evolution, creation, and science* (2nd rev. ed.). Washington DC: Review and Herald Publishing Association.
- Miller, A. M. (1922). The new catastrophism and its defender. *Science* LV(1435), 702–703.
- Nalin, R., & F. Massari. (2018). Storm-related sedimentation influenced by coastal configuration in the stratigraphic record of a tectonically active shelf (Upper Pleistocene Le Castella terrace, Italy). *Sedimentary Geology* 365, 34–53.
- Nalin, R., M. Ghinassi, L. M. Foresi, L. M., & Dallanave, E. (2016). Carbonate deposition in restricted basins: A Pliocene case study from the Central Mediterranean (Northwestern Apennines), Italy. *Journal of Sedimentary Research* 86, 236–267.
- Nelson, D. K. (2015). *Creation and Evolution*. Nampa, ID: Pacific Press.
- Nichol, F. D. (Ed.). (1953). *The Seventh-day Adventist Bible Commentary*, Vol.1. Washington, DC: Review and Herald Publishing Association.

- Numbers, R. L. (2006). *The creationists: From scientific creationism to intelligent design* (exp. ed.). Cambridge, MA: Harvard University Press.
- O'Toole, G. B. (1926). *The case against evolution*. New York: MacMillan.
- Olson, R. W. & Haloviak, B. (1978). Who decides what Adventists believe?: A chronological survey of the sources. Ellen G. White Research Centre, DF326.
- Pfandl, G. (2005, June). "In the beginning God ..." A historical review of the Creation debate among Seventh-day Adventists. *Ministry* 77(6), 8–15.
- Price, G. M. (1902). *Outlines of modern Christianity and modern science*. Oakland, CA: Pacific Press.
- Price, G. M. (1906). *Illogical geology. The weakest point in the evolution theory*. Los Angeles, CA: The Modern Heretic.
- Price, G. M. (1913). *The fundamentals of geology and their bearings on the doctrine of a literal creation* Mountain View, CA: Pacific Press.
- Price, G. M. (1923). *The new geology: A textbook for colleges, normal schools, and training schools; and for the general reader*. Mountain View, CA: Pacific Press.
- Price, G. M. (1925). *The predicament of evolution*. Nashville, TN: Southern Publishing Association.
- Richarz, S. (1925, December 1). Evolution in the light of geology. *Fortnightly Review* 6, 485–488.
- Richarz, S. (1926, January 1). Evolution in the light of geology (Part 3). *Fortnightly Review* 7, 7–11.
- Ritland, R. M. (1970). *A search for meaning in nature*. Mountain View, CA: Pacific Press.
- Roth, A. A. (1998). *Origins: Linking science and Scripture*. Hagerstown, MD: Review and Herald Publishing Association
- Schuchert, C. (1924). A review of "The New Geology" by George McCready Price. *Science* 59(1535), 486–487.
- Scott, E. C. (2019). Response by Eugenie C. Scott for the presentation of the 2018 Paleontological Society Pojeta Award. *Journal of Paleontology* 93, 1034–35.
- Silva, S. (2010). Development of the Fundamental Beliefs statement with particular reference to the Fundamental Belief #6: Creation. *Journal of the Adventist Theological Society* 21(1–2), 14–44.

- Smith, U. (1858). Geology. *Advent Review and Sabbath Herald*, 13(4), 28.
- Thorpe, P. L. (2018). Christian high school science teachers' perspective transformation: the journey from evolution to Creation. [Doctoral Dissertation, Liberty University].
- Trim, D. J. B. (Forthcoming) "Making room for two creationist positions": The origins and evolution of Seventh-day Adventist Fundamental Belief number 6. *Journal of Adventist Archives*.
- Trim, D. J. B., & Baker, B. J. (2014). Fundamental Belief 6: Creation. A descriptive inventory of documents in the archives of the General Conference of Seventh-day Adventists, relating to the drafting and adoption of Seventh-day Adventist Fundamental Belief no. 6. *General Conference Archives Finding Aids*: Number One. Office of Archives, Statistics, and Research Seventh-day Adventist Church World Headquarters.
- Turner, L. (2014). *Back to the present: encountering Genesis in the 21st century*. Grantham, England: Autumn House.
- Weinberg, C. R. (2014). "Ye shall know them by their fruits": Evolution, eschatology, and the anticommunist politics of George McCready Price. *Church History* 83(3), 684–722.
- Wexler, J. D. (2019). Darwin, design, and disestablishment: Teaching the evolution controversy in public schools, *Vanderbilt Law Review* 56, 751–855.
- Whitcomb, J. C. & Morris, H. M. (1969) *The Genesis flood: The biblical record and its scientific implications*. Philadelphia, PA.: The Presbyterian and Reformed Publishing Company.
- White, E. G. (1864) *Spiritual gifts* (Vol. 3.). Battle Creek, MI: Seventh-day Adventist Publishing Association.
- White, E. G. (1890 [1958]). *Prophets and kings*. Washington, DC: Review and Herald.
- Wise, K. P. (2018). Contributions to creationism by George McCready Price. In J. H. Whitmore (Ed.). *Proceedings of the Eighth International Conference on Creationism*, (p. 683–94). Pittsburgh, PA: Creation Science Fellowship.
- Wyatt, N, & Stolper, D. (2013). Science literacy in Australia: a report prepared for the Australian Academic of Science. <https://www.science.org.au/files/userfiles/learning/documents/ScienceLiteracyReport2013.pdf>

- YB1889. *Seventh-day Adventist Year Book of statistics for 1889*.
<https://documents.adventistarchives.org/Yearbooks/YB1889.pdf>
- YB1890. *Seventh-day Adventist Year Book for 1890*. <https://documents.adventistarchives.org/Yearbooks/YB1890.pdf>
- YB1930. *Year Book of the Seventh-day Adventist denomination: The official directories 1930*. <https://documents.adventistarchives.org/Yearbooks/YB1930.pdf>
- YB1931. *1931 Year Book of the Seventh-day Adventist denomination*.
<https://documents.adventistarchives.org/Yearbooks/YB1931.pdf>
- YB1979. *Seventh-day Adventist Yearbook 1979*. <https://documents.adventistarchives.org/Yearbooks/YB1979.pdf>
- YB1980. *Seventh-day Adventist Yearbook 1980*. <https://documents.adventistarchives.org/Yearbooks/YB1980.pdf>