

Creationism and Science: The Continuing War

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Abstract

The Young Earth Creationists (YEC) have become an influential force in the life of the American Church. They maintain that the inerrant and infallible Bible teaches the Earth is only 6,000 years old and the scientific evidence for an ancient Earth is erroneous.¹ As a result of their influence, many young people have come to view Christianity in opposition to science. This article traces the roots of the YEC to the work of the nineteenth century scientists (e.g., Phillip Gosse) and theologians (e.g., Charles Hodge and B.B. Warfield) as well as twentieth century advocates (e.g., Henry Morris and Ken Ham). Both the biblical and scientific arguments that they present to support the creation of a young Earth and the laying down of the geological column during a one year universal flood are examined. Opposing scientific evidence is surveyed to indicate problems the YEC have in defending their positions. Finally, an example of a theological option that is not in such intense conflict with science is offered.

I. Introduction

In his book *You Lost Me*, David Kinnaman, President of the Barna Group, writes, “Millions of young Christians perceive Christianity to be in opposition to modern science.”² He then explains, “One reason young Christians feel acutely the antagonism between their religion and science is that there is animosity on both sides—Western science has often seen itself as an opponent of faith. We could call this opposition ‘scientism,’ the assumption that science has cornered

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²David Kinnaman, *You Lost Me* (Grand Rapids: Baker Books, 2011), 131.

the market on knowledge, and something can only be true if it can be tested by scientific methods.”³ Part of the reason for this perceived antagonism is that many scientists such as Richard Dawkins, author of *The God Delusion*, are atheists.⁴ In his discussion of this problem, Kinnaman does not mention the tension generated by Young Earth Creationists (YEC) for their rejection of scientific theory, especially biological evolution. These creationists maintain that a “plain sense” reading of the Bible leads to the conclusion that the earth is only 6,000-10,000 years old. They believe that the Bible is absolutely infallible on every topic it addresses, and they reject evolution. The YEC particularly identify with Henry Morris and the Institute for Creation Research, and Ken Ham of the Answers in Genesis (AIG) organization located in Petersburg, Kentucky. Ham is now probably the most influential leader of the YEC since the death of Morris. Their role in the perceived antagonism between science and the Bible merits investigation.

A model of two fortress towers at war commonly illustrates how YEC view what is happening in our culture.⁵ The foundation on the left tower reads, “Evolution: Man Decides ‘Truth.’” The banner over this tower reads “humanism,” and the balloons floated by the men in this tower display an assortment of cultural expressions of sinfulness. Wearing bandanas, these men are obviously portrayed as pirates and are firing their cannons at the foundation of the tower on the right, which is labeled, “Creation: God’s Word Is Truth.” The defenders on the right are asleep, aiming in the wrong direction, aiming at their own foundation, or aiming at the wrong target, namely the balloons being floated by the pirates. Dr. Terry Mortenson of Answers in Genesis (AIG) states in the video “From the Dust” that evolution does not create the problems; sin does and “the more people build their thinking based on evolution, the more they use it to justify their sin.”⁶ This model graphically portrays the war with science as understood by the YEC.

The YEC distinguish themselves from other creationists who could be perceived as potential allies in this war. Among these are the Old Earth Creationists such as Fred Heeren and Hugh Ross, who agree with the YEC in rejecting evolution but nevertheless accept that the earth is billions of years old and rely on several different theories to explain how an old Earth is compatible with the Bible. Glenn Morton advocates that the six days of creation are literal days but separated by millions of years. Another theory is the day/age theory, which proposes that each of the six days are of unlimited time. Still another

³Ibid., 135.

⁴Richard Dawkins, *The God Delusion* (San Francisco: Houghton Mifflin, 2006).

⁵Terry Mortenson, “Where Did the Idea of ‘Millions of Years’ Come From?” in *New Answers Book 2*, n.p. <http://www.answersingenesis.org/articles/nab2/idea-of-millions-of-years>.

⁶Terry Mortenson, *From the Dust: Conversations in Creation* (DVD: Highway Media; Biologos), 2011.

theory is the gap theory, which was advocated by C. I. Scofield and suggests that there is a gap of unlimited time between God's initial creative act described in Gen 1:1 and verse 3, when God reforms the earth after some disrupting event such as the fall of Satan from heaven.

The YEC also distinguish themselves from still other creationists such as those who advocate Progressive Creation, which accepts much of the scientific evidence of a developing universe but holds that at strategic points God directly intervened to create new species. Additionally, the YEC have some dissonance with creationists who advocate Intelligent Design (ID) as well. The YEC can agree with the ID argument that the complexity of the universe points to a Designer, but they have a problem with the reticence of some ID creationists to specify who that Designer is, although many ID creationists personally maintain that the Designer is the Christian God. The main point of contention, however, is that ID creationists do not officially reject evolution, and Michael Behe, a prominent ID creationist, is a committed evolutionist.⁷ For a similar reason, the YEC reject creationists who advocate any type of Theistic Evolution.⁸

Although all of these creationists experience some dissonance with modern science, the tension is greatest with the YEC, who have declared war on modern science and are largely responsible for the disconnect many Christians, especially younger ones, see between Christianity and modern science. This paper describes the origins of YEC ideology as well as the ideology itself and seeks to understand the role of the YEC in creating the perceived impasse between religion and science.

II. The Precursors of YEC Ideology

In 1961, John C. Whitcomb and Henry M. Morris published *The Genesis Flood: The Biblical Record and its Scientific Implications*.⁹ The book was well received by many Fundamentalists and Evangelicals and has become the basic text for those who maintain that the earth and the universe are recent creations. The authors maintain that what we see today is the result of three supernatural events that cannot be adequately explained by science, namely the Creation, the Fall of Humanity, and the Flood. In the introduction, they cite B.B. Warfield, one of the nineteenth century "Princeton theologians."¹⁰ Along with Warfield,

⁷Ted Peters and Marinez Hewlett, *Evolution from Creation to New Creation* (Nashville: Abingdon, 2003), 103-106.

⁸For a fuller discussion of these various positions, see Robert T. Pennock, *Tower of Babel: The Evidence against the New Creationism* (Cambridge: The MIT Press, 1999), 8-31.

⁹John C. Whitcomb and Henry M. Morris, *The Genesis Flood: The Biblical Record and Its Scientific Implications*, 50th Anniversary Edition (Philipsburg, NJ: P & R Publishing, 2011).

¹⁰ *Ibid.*, xxxvi.

these theologians include Archibald Alexander, Charles Hodge, and Archibald Alexander Hodge. This citation of Warfield demonstrates the importance of these Princeton theologians for the development of YEC ideology, and the theological positions of these Princeton academics are foundational not only to Whitcomb and Morris' work but also to many other Young Earth Creationists.

Archibald Alexander (1772-1851), the first principal of Princeton Theological Seminary (1812), drew upon two primary sources for his theological work. The first was that of the Reformed scholastic scholar Francis Turretin (1623-1687).¹¹ The second source Alexander used was Scottish Realism or common sense philosophy. This philosophy assumes "the universe possesses a rational structure that corresponds with the structure of the human mind. Through the use of reason, the Common Sense philosophers believed, human beings could ascertain the intimate workings and causal processes of the natural world."¹² H. Ray Dunning notes this philosophy assumes that by the use of common sense one is able to grasp "an adequate understanding of the meaning and significance of the observable external world."¹³

As applied to the study of the Bible, the "plain sense" of the text is opposed to the medieval allegorical and spiritual interpretations and is to be taken as the proper interpretation.¹⁴ As such, the common person by the use of reason can apprehend the truth of the Bible; that is, true statements in which one can believe.¹⁵ Faith thus is not seen as "a personal relationship with God based on trust," but as "belief in or assent to true statements or propositions about God. Christian faith becomes primarily assent to infallible biblical propositions."¹⁶ Dunning recognizes that on a practical level, Fundamentalists stress "faith in Jesus Christ for salvation and the importance of Christian piety." Among

¹¹On Turretin, see also Jack B. Rogers and Donald K. McKim, *The Authority and Interpretation of the Bible: An Historical Approach* (New York: Harper and Row, 1979), 100-116, 172-183.

¹²David N. Livingstone, *Darwin's Forgotten Defenders: The Encounter Between Evangelical Theology and Evolutionary Thought* (Grand Rapids: Eerdmans, 1987), 102.

¹³H. Ray Dunning, "Comparing and Contrasting: Some Distinguishing Wesleyan and Fundamentalist Expressions of the Christian Faith," in *Square Peg: Why Wesleyans Aren't Fundamentalists*, ed. Al Truesdale (Kansas City: Beacon Hill, 2012), 64.

¹⁴The Princeton Theologians based their work on the plain sense of the Hebrew and Greek texts, not translations, although they believed the common person could understand the basic message of salvation in a translation.

¹⁵This point is compatible with Turretin's position that the Bible's teachings concerning salvation "can be understood by believers without the external help of oral tradition or ecclesiastical authority." See Rogers and McKim, *Authority and Interpretation*, 182.

¹⁶See Ken Ham and Greg Hall, *Already Compromised* (Green Forest, AR: Master Books, 2011), 108. Hall states, "Many highly credentialed scholars and pastor/teachers . . . believe the Bible to be an objective propositional revelation, verbally inspired in every word, absolutely inerrant in the original documents." See also Roger and McKim, *Authority and Interpretation*, 295.

fundamentalist apologists or spokespersons, however, faith becomes dependent on rational arguments rather than personal commitment to Christ.¹⁷

Alexander's most outstanding student was Charles Hodge (1797-1878), who became a professor at the Seminary in 1822 and its principal in 1851. In his *Systematic Theology*, Hodge argues for the absolute inerrancy and infallibility of Scripture not only for faith and practice but also for statements of facts, whether scientific, historical, or geographical. He comments that the infallibility of Scripture "is not confined to those facts of importance . . . or which are involved in matters of doctrine. It extends to everything which any sacred writer asserts to be true."¹⁸ Similar to Alexander, Hodge was also "an admirer of the inductive Baconian ideal both in science and theology. Put simply, this approach assumes that true knowledge is based on fact gathering, on painstaking data collection without prior recourse to theory."¹⁹ Hodge therefore rejected higher criticism of the Bible, such as denying the Mosaic authorship of the Pentateuch, as it contradicts the plain teaching of Scripture.

Hodge did accept the concept of evolution but objected to Darwin's theory, for he thought that Darwin's concept of chance overthrows the argument of design or teleology and thus leads to atheism. First published in 1802, William Paley's *Natural Theology* was highly regarded by Hodge.²⁰ Paley argued that the animals and plants of nature display "marks . . . of contrivance, choice, and design" and that these marks point to a Designer.²¹ As the eighteenth and nineteenth centuries saw the rapid development of science, Hodge, along with many other Christian theologians and scientists, viewed the discoveries of science as evidence of the providence of God, who created all things. Darwin's theory of natural selection, however, was viewed by Hodge as inimical to design as it was "conducted by unintelligent causes."²²

Archibald Alexander Hodge (1823-1886) followed in his father's footsteps both in becoming a theologian and in teaching at the Princeton Seminary (1877-1886). A. A. Hodge accepted that God used human instrumentality to produce the Scriptures in that the writers "freely and spontaneously produced the very writing which God designed, and which thus possesses the attributes of infallibility and authority." The final result of inspiration is a Bible, which in each part and every word is fully the word of God.²³ A. A. Hodge made a major contribution by further developing the concept of placing the authority of the

¹⁷Dunning, "Comparing and Contrasting," in Truesdale, *Square Peg*, 64-66.

¹⁸Charles Hodge, *Systematic Theology*, 3 vols. (New York: Charles Scribner's Sons, 1889), 1:163.

¹⁹Livingstone, *Darwin's Forgotten Defenders*, 102.

²⁰William Paley, *Natural Theology: Evidence of the Existence and Attributes of the Deity, Collected from the Appearances of Nature* (Great Britain: Clays, 1802).

²¹*Ibid.*, Kindle edition, 48.

²²Livingstone, *Darwin's Forgotten Defenders*, 104.

²³A.A. Hodge, *Outlines of Theology: Rewritten and Enlarged* (New York: George H. Doran, 1878), 75-77.

Bible in the inerrancy of the autographs. He maintained that claiming an error in Scripture necessitates proving that the error existed in the autographs themselves.²⁴

Benjamin Breckenridge Warfield (1851-1921), the last of the “Princeton theologians,” also held the belief that the Scriptures are infallible in the autographs and that there is a human element in Scripture. Although the Scriptures in every part are a Divine as well as a human book, the final product that is produced by Divine verbal but not dictation inspiration is the word of God. Warfield did sense that there was a comparison between the human/Divine composition of the Bible and that of the Incarnation of Jesus, but Warfield thought that the issues were not the same.²⁵ The issue that Warfield tried to avoid is that of Docetism. As in the debates concerning the personality of Jesus, one ends up with a wholly divine book if too much emphasis is placed on the divinity. Thus he, like A.A. Hodge, emphasized the human element; however, the Bible is for them, in the end, the word of God, infallible in all it asserts. I do not think that they escape entirely the charge of scriptural Docetism.

In summary, the Princeton theologians provided a number of key concepts upon which Whitcomb and Morris relied and that continue to influence YEC to this day. Most importantly, these theologians provided the theological underpinning of the concepts of inspiration, inerrancy, and infallibility of the Scriptures. The Scriptures in the autographs are inerrant in all matters that they address, including science and history. They are to be read in their literal or “plain sense,” which even the common person is able to understand. The Bible presents truth in the form of propositional statements that are to be accepted as part of one’s faith in God. Higher criticism is rejected as it is contrary to the plain sense of Scripture. Although they accepted the concept of evolution, they nevertheless rejected Darwin’s work as conflicting with the idea of divine purpose or teleology and as leading to atheism. It is helpful to understand the positions the YEC take concerning the relationship between the Bible and science by being aware of their dependence upon the Princeton theologians.

III. Presuppositions of the YEC

The YEC presuppose first and foremost that the Bible is inerrant in all it addresses, including science and history. If science and the Bible as interpreted by the YEC conflict, therefore, the Bible is given greater authority than “man’s biased, incomplete, prideful, changing and fallible interpretations of nature.”²⁶

²⁴Ibid.

²⁵B.B. Warfield, *The Inspiration and Authority of the Bible*, ed. Samuel G. Craig (London: Marshall, Morgan and Scott, 1951), 143-163.

²⁶Mark Van Bebber and Paul S. Taylor, *Creation and Time: A Report on the Progressive Creationist Book by Hugh Ross* (Mesa, AZ: Eden Productions, 1994), 36.

The YEC also presuppose that the first eleven chapters of Genesis are to be read as factual history and that science is limited to studying the present world and cannot study earlier ages.²⁷ The Creation was accomplished by Divine fiat and thus by processes not available to science. Ken Ham makes the distinction between historical science and observational science.²⁸ Scientific methods are not adequate to examine God's actions of the past and thus are essentially limited to Baconian empirical methods to study only the presently existing universe.²⁹ As a corollary to this position, the YEC appreciate modern science and accept its findings as long as these findings do not conflict with what they believe the Bible teaches. Finally, the YEC hold that death did not enter the universe until Adam and Eve sinned and were expelled from the Garden of Eden.³⁰

IV. Creation According to the YEC

Based on these assumptions, the YEC hold specific positions regarding creation. The first chapters of Genesis are taken to be history, and thus the days of creation are held to be six, twenty-four hour days. Morris states boldly, "If the Bible is the Word of God—and it is—and if Jesus Christ is the infallible and omniscient Creator—and He is—then it must be firmly believed that the world and all things in it were created in six natural days and that the long geological ages of evolutionary history never really took place at all."³¹ Since the world was created in such a short period of time, the animals, plants, and even Adam and Eve were created fully mature. Morris states that the plants created on the third day were "full grown plants whose seed was in themselves." He also states that the light created on the first day included the light from the stars. The then

Henry M. Morris, ed., *Scientific Creationism*, 2nd ed. (Forest Green, AR: Master Books, 1985), 215.

²⁷*Ibid.*, 203.

²⁸Ken Ham, <http://www.youtube.com/watch?v=JxX11clcSWU>. Van Bebbler and Taylor, *Creation and Time*, 26.

²⁹*Ibid.* Whitcomb and Morris, *The Genesis Flood*, 223-224. Dennis G. Lindsay, *Foundations for Creation Science*, Creation Science Series (Dallas: Christ for the Nations, 1990), 1:100-101.

³⁰Henry M. Morris and John D. Morris, *The Modern Creation Trilogy*, 3 vols. (Green Forest, AR: Master Books, 1996), 1:26-27. Bebbler and Taylor, *Creation and Time*, 16-17.

³¹Morris, *Scientific Creationism*, 251. While Morris (193-197) believes in the Incarnation of Jesus, he assumes a Docetic position. Jesus was not omniscient according to Mark 13:32, for the Son did not know the time of the "coming of the Son of Man," only the Father does. As to the genealogies of the Bible, they are accepted as factual, with some possible gaps such as are evident in Matthew (1:1-16) and Luke's (3:23-37) genealogies of Jesus. Therefore, there is some flexibility as to exactly when God created the universe, generally attributed to between 6,000 to 10,000 years ago.

asserts, “The light-trail from the star was created in transit, as it were, all the way from the star to the earth, three days before the star itself was created!”³²

Morris understands that on day two (Gen 1:6-8), a vault or dome was created to separate the waters below and those above. The waters above formed a vapor canopy over the whole earth and provided a uniform, mild climate conducive for rapid plant growth and protection from the sun’s harmful rays. Humans thus lived vastly longer lives.³³ Morris acknowledges that this concept lacks scientific support but thinks that subsequent work would justify it. However, Karl W. Giberson notes that the “idea received much attention, but nobody could come up with a model to show how it might have developed or been sustained. An ICR (Institute for Creation Research) physicist created computer models that yielded results even he described as ‘disappointing for advocates of a vapor canopy.’”³⁴

According to Morris and the YEC, God’s initial creation “was a perfect environment and man was perfectly equipped to manage it.” Humanity and all living creatures were free from death, disease, and suffering. It should be noted that God never pronounced his creation as “perfect” but only as “good.” Unfortunately, Adam and Eve sinned and “the bondage of decay” came upon the earth. This “decay” is equated with the Second Law of Thermodynamics. Prior to the Fall, this Law was not functioning.³⁵ Furthermore, the geological column did not exist when God created the earth. It was laid down during the Flood which was caused when “all the springs of the great deep burst forth, and the floodgates of the heavens were opened” (Gen 7:11, NIV 2011). These events also included an intense volcanic activity over all the earth.³⁶

The YEC accept the concept of natural selection as long as it is restricted to microevolution. The original “kinds” were created on days three, five, and six (Gen 12:11-12, 20-22, 24-24-26, 27). What is meant by the term “kind” is left undefined, but from the original “kind” variations inherent in the original genetic code can take place.³⁷ Touring the Creation Museum in Kentucky gives evidence of how flexible the original genes of the “kinds” were. Noah’s family included various human “races.” While macroevolution is denied, a kind may develop into related species including not only the varieties of dogs but also wolves, and possibly foxes. The “ancestors” who were on the Ark produced the various common animals of today by means of natural selection. The first two displays

³²Henry M. Morris, *The Genesis Record: A Scientific and Devotional Commentary on the Book of Beginnings* (Grand Rapids: Baker, 1976), 65-66. Morris, *Scientific Creationism*, 209-21. Whitcomb and Morris, *Genesis Flood*, 228, 232-234.

³³*Ibid.*, 121, 240-241, 253-258. Morris, *Scientific Creationism*, 210-211.

³⁴Karl W. Giberson, *Saving Darwin: How to Be a Christian and Believe in Evolution* (New York: Harper One, 2008), 139.

³⁵Morris, *Scientific Creationism*, 211-213. Van Bebbler and Taylor, *Creation and Time*, 16-20. Lindsay, *Foundations for Creation Science*, 58, 63.

³⁶Whitcomb and Morris, *Genesis Flood*, 242, 270-288.

³⁷Morris, *Scientific Creationism*, 217.

you come to in the museum portray children who are living with dinosaurs. Yes, the YEC believe there were dinosaurs on the Ark, but they became extinct during the Middle Ages.³⁸ A poster displays the development of the horse from the time the small mammal was on the Ark to the present day animal. With the Fall, genetic changes also were introduced, particularly as carnivores developed claws for ripping prey and teeth for eating meat.

V. The Rejection of Evolution by the YEC

The theory of evolution is vociferously attacked by the YEC for they maintain that it subverts every major tenant of their belief system. Therefore, they reject the claims made by the “atheistic” evolutionists that the earth is old, some 4.5 billion years, and that the universe is over 13.75 billion. They also reject the ideas that death existed prior to the development of humanity and thus prior to the Fall, that the Scriptures cannot be read in their plain sense, that macroevolution has taken place as new species have evolved, that there could not have been a real Adam and Eve as the ancestors of all humans, that their transgression was not the beginning of sin or the redemption provided by Jesus, and that the Bible is just another sacred book of a religious community, but without universal authority for all of humanity.

The YEC and Henry Morris in particular develop a number of arguments to counter the scientific claims that the universe is old. In the opening pages of *Scientific Creationism*, the scope of science is limited by definition. Scientific methods are restricted to “experimental observation and repeatability.” Since science “can neither observe nor repeat *origins*” (emphasis in original), it can make no valid statements about how the earth came into being.³⁹ This methodology advocated by Francis Bacon does not take into consideration other scientific methods of studying the past. However, the main argument does not concern methodology; it is grounded in theology. God created the universe by means of supernatural forces that science cannot examine. According to the YEC, we can only know how the earth was created by reading Scripture.⁴⁰

Radiometric dating of rocks has been used to claim that the earth is some 4.5 billion years old. Certain isotopes of elements are unstable and change into other elements. Scientists know the rate of decay and by measuring the amounts of the elements in specific rocks, they can estimate the age of the rock. The YEC are quick to point out several difficulties with using this method. One problem is determining the amount of the daughter element, that is, the element into which the unstable isotope decays that was in the rock originally. Another problem is that the leaching of the elements from the rock can distort the test results as can

³⁸Morris and Morris, *Modern Creation Trilogy*, 1:210.

³⁹Morris, *Scientific Creationism*, 4. Donald B. DeYoung, *Astronomy and the Bible: Questions and Answers* (Winona Lake, IN: BMH Books, 2010), 131.

⁴⁰Whitcomb and Morris, *Genesis Flood*, 331-332.

the weathering of the rock. These are problems well known to geologists. However, the YEC use them to deny that accurate dates can be known, and if God created the earth with the appearance of age, accurate readings would be impossible anyway.⁴¹

In his major work *The New Geology* (1923), George McCready Price (1870-1963) challenges the historical accuracy of the geologists' claims. According to the geologists, there is no place on earth where the geological column is intact, nor would one expect it to be. Various areas of the earth have been covered by oceans only to rise above the waters and sink again. Geologists have "pieced together" evidence from around the world to construct a sequential pattern of the formation of the earth's crust. In contrast, Price proposes that one great catastrophe, namely the flood of Noah's day, laid down the geological column, which thus could not be used as a means of dating the age of the earth. As a Seventh Day Adventist, Price is following the teaching of Ellen G. White, who claims to have had a vision from God of the Flood and how it laid down the geological column.⁴² In *The Genesis Flood*, Morris borrows directly from Price's work but deletes "all but a few direct references to Price."⁴³ According to Morris and Whitcomb, the geological column was formed in rapid succession during the flood with first layers without any sign of life and then with fossils of the abundant plant life that blossomed during the days when the vapor canopy sheltered the earth. In the following layers, the various animals are present in the fossil record according to their ability to struggle to higher ground during the flood. This accounts not only for the geological column but also for the fossil record.⁴⁴

In addition to rejecting the ancient dating of the earth, the YEC commonly argue against evolutionists by citing disagreements among the evolutionists themselves about some aspects of evolution. Within the scientific community, there is indeed a continuing debate concerning the processes of evolution, but not over the theory itself. Scientists who accept the theory but debate the process are often misquoted by the YEC as denying evolution itself.⁴⁵ To the uninformed reader, however, the argument sounds impressive. If the biological scientists are in disagreement, as the YEC argue, then there must not be that much support for the theory.

⁴¹Ibid., 331-391. Morris, *Scientific Creationism*, 131-149.

⁴²For a history of Price's life and work, see Ronald L. Numbers, *The Creationists: From Scientific Creationism to Intelligent Design* (Cambridge: Harvard University Press, 2006), 88-119.

⁴³Ibid., 227. See also Whitcomb and Morris, *Genesis Flood*, 116-211; and Morris, *Scientific Creationism*, 91-130.

⁴⁴Whitcomb and Morris, *Genesis Flood*, 273-287. Morris, *Scientific Creationism*, 118-120.

⁴⁵For examples, see Morris, *Scientific Creationism*, 58, 90, 93-93.

Another argument the YEC make against evolution is to point out its evil origins. Henry Morris and his son John Morris trace the concept of evolution back to the Greeks, the Persians, and then to the Babylonians, specifically the original Babylon (Gen 11:1-9). According to them, the mighty hunter Nimrod (Gen 10:8-12) ruled over an empire with his capitol in Babylon. He and his priests met in the temple on the top of the tower of Babel with Satan and his evil spirits “to plan their long-range strategy against God and God’s redemptive purposes for the post-deluge world.”⁴⁶ According to the YEC, evolution was conceived by Satan as an alternative to God’s account of creation (Gen 1-2), and Satan convinced Nimrod to teach it to the people who then were dispersed to the various parts of the world. Thus, the evil concept of evolution was planted in all the religions and philosophies of the world from China to India, to Egypt, and to Greece and Rome.⁴⁷

VI. Scientific Responses to the YEC

Chris Colby states bluntly, “Scientific creationism is 100% crap.”⁴⁸ Other scientists, particularly Christians who (as scientists) disagree with the YEC, may not be so frank, but they are as adamant that the YEC are wrong and have several reasons for maintaining that the universe is older than 6,000-10,000 years old. Geophysical scientists are well aware of the problems associated with radiometric dating. They are the ones who originally recognize the problems and work to overcome them. Modification of approach to achieve greater accuracy is what science does; it recognizes problems and then investigates to solve them. In 1982, Davis Young, a geologist who taught at Calvin College, writes *Christianity and the Age of the Earth*. The chapter on radiometric dating discusses the processes scientists use to date rocks, and he describes the care they take to make certain their tests are accurate.⁴⁹ For example, since fault zones or highly fractured zones allow the possibility of an influx of water that causes migration of minerals, geologists “avoid collecting specimens near or in” these areas.⁵⁰ In the same chapter, he also discusses the technical objections that members of the YEC such as D.O. Acrey, H. Slusher, Robert L. Whitelaw, and Melvin Cook raise and why their objections are not valid.⁵¹

In a more recent and expanded work, Young and Ralph A. Stearly go into greater detail about the geological evidence for an old earth. The two chapters on

⁴⁶ Morris and Morris, 3:55.

⁴⁷ Morris and Morris, *Modern Creation Trilogy*, 3:42-56.

⁴⁸ Chris Colby, “Introduction to Evolutionary Biology,” in The Talk Origins Archive, no pages. <http://www.talkorigins.org>.

⁴⁹ Davis A. Young, *Christianity and the Age of the Earth* (Grand Rapids: Zondervan, 1982), 93-116.

⁵⁰ Ibid., 98.

⁵¹ Ibid., 100-115.

radiometric dating describe the processes geochronologists use to date rocks, such as Samarium decaying by alpha emission into Neodymium and Rubidium by beta emission into Strontium. The discussions include the limitations, problems, and methods that are used to assure accurate results.⁵² Radiometric dating methods are continuing to be refined and scientists see no valid scientific reasons to reject the radiometric findings that the earth was created some 4.5 billion years ago.⁵³

Young earth creationists claim that the geological column was laid down by the Flood, a turbulent force that reshaped the earth in a year's time. Scientists point out many problems with this claim. The thicknesses of sedimentary rocks are quite extensive. In Michigan, sedimentary rocks reach a thickness in excess of 15,000 feet. "In northern Utah and southern Idaho, the collective thickness of these layered rocks runs well in excess of 30,000 feet and may range locally to at least 45,000 feet." Sedimentary rock shows evidence of being laid down not only on ocean floors but also in "identifiable contexts such as deserts, lakes, rivers, deltas, shores" as well as "in open oceans" and not just by a worldwide flood.⁵⁴ The sedimentary columns often contain sections deposited on beds of shallow seas, as indicated by the presence of fossil reefs that are thousands of feet thick and miles long. Young asks, "Can one possibly conceive of a structure this large as being a redeposited antediluvian reef? Could even the most spectacular flood be capable of transporting a reef that large?" He further notes that "none of the reefs are upside-down." How could a gigantic flood keep the reefs intact and right side up?⁵⁵

According to the YEC, all plant life was created on the third day only 6,000 to 10,000 years ago. The fossil record of the geological column contradicts this position. Fossils of non-flowering plant life appear in the Silurian Period, dated to between 443 and 417 million years ago. Yet, flowering plants do not appear in rocks until the Cretaceous Period, dated to 135 million years ago. If all types of plant life were covered and converted into fossils by a worldwide flood lasting

⁵²Davis A. Young and Ralph F. Stearley, *The Bible, Rocks and Time* (Downers Grove, IL: IVP Academic, 2008), 388-443.

⁵³"Much work has been done by the YEC and ID folks to refute radiometric dating. See Larry Vardiman, Andrew A. Snelling, and Eugene F. Chaffin, ed., *Radioisotopes and the Age of the Earth* (Waco: Institute for Creation Research, 2005). See the in-depth review of the book by Randy Isaac, "Assessing the RATE Project," *Perspectives on Science and Christian Faith* 2 (2007):143-146. Among other points, the review shows that if the acknowledged (even by ancient age opponents) amount of radioactive decay had occurred – and occurred in the short time span supposed by the YEC – then the heat involved in the radioactive processes would cook the surface of the earth and destroy all life. No credible response to this argument has been given. This information comes from a private communication from Dr. Max Reams, Professor of Geology at Olivet Nazarene University, on 28 February 2013.

⁵⁴*Ibid.*, 217-218.

⁵⁵Young, *Christianity and the Age of the Earth*, 85.

only 375 days, why do not all types of plants appear together? If all plant life were created on the third day only 6,000 to 10,000 years ago and the fossil record were established during the flood, why do flowering plants appear only in rocks laid down in the higher levels of the geological column and non-flowering plants in lower levels?⁵⁶

Young earth creationists claim that dinosaurs were contemporary with humans. Not only did early humans create tools out of rocks, but, according to Gen 4:22, they also forged them out of bronze and iron. Yet, no human remains whatsoever, let alone their tools, have been found in the fossil beds in the same rock strata as dinosaur remains. In conclusion, it should be clear that there is no scientific evidence that the geological column was laid down by the flood. One might be more logically consistent by arguing like Phillip Gosse that God created the world with the marks of age including the geological column containing the fossils.⁵⁷

Scientists find two arguments by the YEC concerning the Fall very problematic. First, the YEC claim that there was according to the Bible no death before Adam sinned. On the fifth day of the creation narrative, the fish and fowls were created (Gen 1:20-23). Bacteria are essential for several functions including the digestion of food. Even termites that eat wood are dependent upon bacteria to digest cellulose.⁵⁸ However, bacteria reproduce by asexual division every 20 minutes. Dr. Kimberly Lyle-Ippolito has calculated that if there were no death before Adam sinned and one bacterium reproduced every twenty minutes, the mass of bacteria would equal the weight of the earth in just twenty-seven hours and twenty minutes.⁵⁹ By the time Adam was created and named the animals, he would have been up to his neck in bacteria.

Second, the YEC claim that the Second Law of Thermodynamics was not functioning before the fall in the Garden. According to the Second Law of Thermodynamics, "energy is constantly moving to establish equilibrium. This is accomplished by regions of higher energy expanding into less energetic regions."⁶⁰ This movement is called entropy. Heat such as that coming from the sun is a type of energy. Cold is the absence of heat and thus of energy. On a cold day, heat is constantly being lost by moving from a warmer body to a cooler body. The earth is constantly radiating into space heat received from the sun. On the fourth day of the creation narrative, the sun and stars were created. The sun by means of nuclear fusion produces energy in the form of light and heat. As it travels through space, this light and heat are dissipating in accordance with the

⁵⁶"What is a Flowering Plant?" n.p. <http://www.backyardnature.net>.

⁵⁷Phillip Henry Gosse, *Omphalos: An Attempt to Untie the Geological Knot* (London: John Van Voorst, 1857).

⁵⁸Margaret Gray Towne, *Honest to Genesis: A Biblical and Scientific Challenge to Creationism* (Baltimore: PublishAmerica, 2003), 96.

⁵⁹Private communication from Dr. Kimberly Lyle-Ippolito, Anderson University.

⁶⁰Private communication from Dr. John Millis, Anderson University.

Second Law.⁶¹ To suggest that the Second Law was not functioning at the beginning of creation is ludicrous because the full blast of non-dissipated energy from the sun would have destroyed the earth. To save these two arguments, one would have to suppose that God intervened in some manner to protect the earth from God's own creation.

One of the growing problems with the position of YEC is their inability to explain away the biological evidence that continues to accumulate in support of evolution, particularly with recent studies in genetics. One example is the genetic inheritance of the even-toed ungulates. Genes are made up of strings of DNA that contain the plans to build particular protein molecules, such as hemoglobin. These genes replicate themselves with marvelous accuracy from generation to generation. As an illustration, let us suppose that the message of one gene is the command, "gototherefrigerator." Occasionally a stretch of meaningless gibberish called an intron enters the gene and becomes replicated in the following generations. The cell however is able to read the command perfectly by skipping over the gibberish as in our illustration, "gotozxxxytherefrigerator. DNA also has floating gibberish, called retroposon, which can be attached inside an intron. As long as the retroposon is inside an intron, the original command can be read without difficulty as in "the retroposon SINE CHR-1," which "is found inside a specific intron of a particular gene in a group of related animals."⁶² So our illustration would now read, "gotozxxSINECHR-lxytherefrigerator." The command can still be accurately read, as the cell would skip over the intron as well as the retroposon contained in the intron. Also, the gene with the intron and retroposon would be accurately copied from generation to generation. It is significant that all even-toed ungulates, except camels and pigs have the SINE CHR-1 retroposon. The species that do have it are cattle including bison and water buffaloes, sheep, goats, deer, antelopes, giraffes, hippopotamuses, whales, and dolphins.⁶³ How could an intron with a specific retroposon enter the genes of such varied species? One answer is that when God created the species he created them with genes that carried mistakes. This option is not likely if God created the "perfect" world. A second and more probably answer is that the cells of a common ancestor passed on a gene that first had an intron inserted into it. A later ancestor that had a retroposon inserted into an intron of that same gene passed it on to generations that evolved into the various species.

These problems represent only a small portion of the scientific responses to the YEC, who are waging war with modern science. The battlefield is wide-

⁶¹See the discussion of the Second Law of Thermodynamics in Karl W. Giberson and Francis S. Collins, *The Language of Science and Faith* (Downers Grove: IVP Books, 2011), 162-169.

⁶²Darrel R. Falk, *Coming to Peace with Science* (Downers Grove, IL: IVP Academic, 2004), 190. While Falk uses the term "retroposon" other biologist prefer the term "retrotransposon." SINE CHR-1 is a virus.

⁶³*Ibid.*, 182-192.

ranging, and the gulf between the two sides continues to widen with both sides considering the other to be just plain wrong on many of the issues. Considering the impasse between the two sides, perhaps it is time for a reassessment.

VII. Other Options

Where does this war leave us? Must we choose between the Bible and science? The mounting evidence leaves Christians wondering what to think. Is the Church forced to admit what most young minds already believe and what the findings of Kinnamin's survey indicate, namely that the Church is anti-science and is stuck in a seventeenth century war against science? I believe there are better options. Ted Peters and Marinez Hewlett, for example, briefly survey Roman Catholic, Eastern Orthodox, and liberal Protestant traditions allowing for interpretations of Genesis that are compatible with Neo-Darwinian evolution.⁶⁴ Let me add yet another option from my own theological tradition.

The Arminius-Wesley tradition has long challenged some of the positions of the Reformed tradition. James (Jacobus) Arminius (1560-1609) was educated in Geneva and studied with Theodore Beza. However, Arminius soon rejected some of the basic tenets of Calvinism such as supralapsarian predestination (God predestined Adam and Eve even before the Fall that they would sin) and irresistible grace (God grants grace to whomever he chooses and they cannot resist his choice).⁶⁵ John Wesley (1703-1791) was an Anglican priest who accepted many of Arminius' theological positions and who along with George Whitfield, a Calvinist, brought about a revival of spirituality in England. Theologians who have followed Arminius and Wesley's teachings have modified the Reformed view of inspiration and advocated a dynamic theory that limits inerrancy to teachings of faith and practice only.⁶⁶

Albert Gray, a Wesleyan theologian of the Church of God (Anderson), specifically rejects the Reformed view as developed by the Princeton theologians because "it is not possible to reconcile this view of inspiration with the fact that writers report the same instances or the same words differently, even words of Christ." Gray states, "Rather, God gave only the idea and left each writer to express it in his own words. This theory seems to fit most of the facts better than the others." This position avoids scriptural Docetism by recognizing the human element in Scripture. Gray further states, "An acknowledgment of human

⁶⁴Peters and Hewlett, *Can You Believe*, 98-114.

⁶⁵For a statement of his theological positions, see James Arminius, *The Writings of Arminius*, 3 vols., trans. by James Nichols and W.R. Bagnall (Grand Rapids: Baker, 1956), 1:211-264.

⁶⁶For a brief survey of the Wesleyan theological tradition, see Robert D. Branson, "How the Discoveries of Science and Archaeology Shift Interpretations of Genesis," in *Divine Grace and Emerging Creation*, ed. Thomas Oord (Eugene, OR: Pickwick Publications, 2009), 150-154.

limitations in Bible writers will explain some apparent misconceptions. Divine perfection should not be expected in a book that is partly human. The divine element is very apparent, and so is the human element.”⁶⁷

What is meant by “apparent misconceptions,” Gray does not specify, but they apparently arise from the Bible’s creation and use by a people who lived in a pre-scientific age. These people believed that the earth does not move (Ps 93:1; 104:5), that they lived in a geocentric system where the sun rotated around the earth (Josh 10:12-13; Ps 19:6), that the earth was established on foundations (Job 38:4; Ps 102:25; 104:5; Isa 48:13), and that a solid dome on which the sun, moon, and stars were fixed held back waters above the earth (Gen 1:6-7,14-18). These examples are indications of the human aspect of the Bible. According to the Wesleyan Tradition, they are not to be received as revelations from God concerning the structure of the universe but as examples of how God used the common understanding of the writers and their culture to convey to the readers what is essential. A. M. Hills states, “In spite of all discrepancies, and disagreements, and errors, and minor inaccuracies, the Bible still remains God’s inspired and infallible book. But infallible for what? . . . It infallibly guides all honest, and willing and seeking souls to Christ, to holiness, and to heaven.”⁶⁸

The Wesleyan tradition and other theological positions that do not insist on an infallible Bible in regard to matters of science allow scholars to compare the biblical account of creation to those current in the broader cultures of the Ancient Near East. In so doing, scholars such as John Walton recognize both the similarities between these accounts and the distinctive theological message of Genesis.⁶⁹ In contrast to the polytheistic beliefs of the Babylonians and Egyptians, Genesis 1 proclaims that there is only one God, who is separate from the creation itself and who brought order to the world to support human, plant, and animal life. Such an approach to scripture is of course resisted by the YEC. Ken Ham dismisses Walton’s work by stating that “he is using pagan, idolatrous mythology to supposedly help us to understand what God and Moses really meant!” Ham thus demonstrates his rejection of Old Testament studies in general and specifically how the study of the Ancient Near East cultural background of Israel informs the meaning of the text.⁷⁰

⁶⁷Albert F. Gray, *Christian Theology: Volumes I and II* (Anderson, Indiana: The Warner Press, 1944 and 1946), 1:71-73.

⁶⁸A.M. Hills, *Fundamental Christian Theology*, 2 vols. (Pasadena, CA: C.J. Kline, 1931), 1:134.

⁶⁹John Walton, *The Lost World of Genesis One: Ancient Cosmology and the Origins Debate* (Downers Grove, IL: IVP Academic, 2009).

⁷⁰Ham and Hall, *Already Compromised*, 189.

VIII. Conclusion

As long as the biblical accounts of creation are interpreted from a theological position of absolute inerrancy more authoritative than science, the war between creationism and science will continue. People might be forced into a false position of having to choose between accepting modern science and believing the Bible or rather a specific interpretation of it. When they become persuaded by the overwhelming scientific evidence of the old age of the universe, those in religious traditions dominated by the YEC ideology might feel betrayed. They may realize that the interpretation of the Bible they were taught is not credible, and many may turn away from the Church and their belief in God. However, other orthodox theological options are available that provide a solid basis upon which to build a strong spiritual life and also a way to live in a modern age that is shaped by valid findings of science. The war between religion and science is neither inevitable nor necessary.



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