

**Institute for Christian Teaching**

**THE BIBLE AND THE PHILOSOPHY OF SCIENCE**

**John T. Baldwin**

**404-00 Institute for Christian Teaching  
12501 Old Columbia Pike  
Silver Spring, MD 20904 USA**

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**The Bible and the Philosophy of Science: Toward Identifying and Assessing Selected  
Core Principles and Implications of a Christian Philosophy of Science  
Drawn from the First Angel's Message**

by

John T. Baldwin, Ph.D.

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**The Purpose of the Essay**

In its character as a work in progress, the purpose of this paper is to move toward identifying and assessing five elements either related to or implications of a Christian philosophy of science which seem to be implied in a key line by the first angel urging us to "worship Him who made the heaven, and the earth, and sea, and the springs of waters" (Rev 14:7c) which is so central to mainline Seventh-day Adventist theology.

**Definitions and Method Employed in the Essay**

The philosophy of science deals with the general philosophical issues associated with the natural sciences such as a philosophy of nature. What is matter? Is it static or evolving? What is the nature of scientific knowledge? How do we know, and what are the limits of knowledge?<sup>1</sup>

Because working assumptions and definitions are crucial to this project, the essay first discusses the nature and status of the Bible and the writings of Ellen White used in respect to a Christian philosophy of science. The way one views the nature of the Bible profoundly influences how one understands the relation of the Bible and the philosophy of science. Conversely, one's understanding of the philosophy of science deeply impacts one's articulation of its relation to the Bible. Next the essay addresses five principles or implications relevant to a philosophy of science imbedded in the line noted above. Finally, the essay presents tentative conclusions.

### **The Nature and Status of the Bible Used in an Adventist Philosophy of Science**

As mentioned above, the way in which one defines the nature of the Bible deeply impacts the relevance the Bible has to a Christian philosophy of science. On the one hand, one might regard the Scriptures as the Word of God in propositional form. By contrast, as is generally known, some scholars understand the Bible along the general lines outlined by Karl Barth and others that the Bible is not the Word of God in propositional form in actuality apart from the contemporary speaking activity of God. These two contrasting positions represent a diverging watershed of such magnitude that it is safe to say that a settled response to this issue completely determines the shape of one's philosophy of science. For this reason, we turn to an analysis of these issues, first to the nature of Scripture, and second to the status of Scripture.

#### **The Nature of the Bible in an Adventist Philosophy of Science: The Propositional Word of God**

As early as 1771, the famous Johann Semler, sometimes characterized as the father of the higher critical method of biblical study, wrote these startling words: "The root of the evil (in

theology) is the interchangeable use of the terms 'Scripture' and 'Word of God.'<sup>2</sup> With one stroke Semler disconnects the Bible from the Word of God. The consequences of no longer identifying the Bible with the Word of God theoretically frees scholars to investigate, evaluate, and criticize the various narratives and claims of the Bible. For Semler this was a necessary move, because if the propositions of the Bible were themselves to be considered the actual Word of God, human criticism of the Bible would be restrained from dismissing biblical claims as no longer reliable theologically or historically.

Approaches taken by leading theologians of the twentieth century indicate that Semler's views on this point continue to thrive. The following words indicate that Paul Tillich agrees with Semler on this idea: "Probably nothing has contributed more to the misinterpretation of the biblical doctrine of the Word than the identification of the Word with the Bible."<sup>3</sup> Here, Tillich rejects the propositional view of the Word of God, and adheres to a non-cognitive view. This permits Tillich to say, "The 'Word of God' contains neither revealed commandments nor revealed doctrines."<sup>4</sup> A commonality exists between Tillich and Bultmann regarding this claim. The latter figure writes, "When the revelation is truly understood as God's revelation, it is no longer a communication of teachings, nor of ethical or historical and philosophical truths, but God speaking directly to me."<sup>5</sup> Theologian Karl Barth was so insistent on rejecting the concept of the propositional Word of God along with propositional revelation that in a famous characterization he said that were the Bible to be considered as the propositional Word of God, then the Bible becomes, as in the seventeenth-century usage, a "paper Pope"<sup>6</sup> wholly given up into the hands of its interpreters.

An Adventist philosophy of science, building upon the assumption of the unity of the Scriptures and other elements of a high view of Scripture can well return to the identification of the Scripture with the Word of God. Two of many biblical passages point us into this direction. When Jesus was confronted by Satan's taunt to demonstrate His divinity by commanding stones to become bread, the Lord equates the propositional Scripture with the Word of God in this language: "It is written, 'Man shall not live on bread alone, but on every word that proceeds out of the mouth of God'" (Matt 4:4).<sup>7</sup> By turning to the written source of His day to find the Word of God, Jesus effectively links the two as identical.

This view seems to be confirmed by Jesus' remarks to the Pharisees: "For Moses said, 'Honor your father and your mother . . .', and 'He who speaks evil of father or mother let him be put to death' . . . but you say . . . thus invalidating the Word of God by your tradition" (Mark 7:10-11,13). Jesus not only quotes from the ten commandments in this passage but also from other portions of the Pentateuch equating both with the remarkable concept "Word of God." This is the very identification disallowed by many contemporary theologians meaning that they too, from Christ's perspective revealed in this passage, are invalidating the Word of God by human traditions or reason.

Taking the Bible as the propositional Word of God carries significant consequences in a Christian philosophy of science in terms of responding to the crucial question of the relative authority of the Scripture in relation to science to which we now turn.

**The Status of the Bible in an Adventist Philosophy of Science:  
The Bible Holds an Authority Above Science**

In an Adventist philosophy of science, do the two sources of truth (knowledge, wisdom, and information) represented by the Bible and science carry equal authority? How does one deal with a potential conflict between the two sources? Does one of the two sources have the final word in potential conflicts of interpretation? Does science in the end carry more weight than Scripture? Francis Schaeffer comments regarding the challenge the last question poses:

There is a tendency for some who are Christians and scientists to always place special revelation (the teaching of the Bible) under the control of . . . science, and never or rarely to place . . . what science teaches under the control of the Bible's teaching. That is, though they think of that which the Bible teaches as true and that which science teaches as true, in reality they tend to end with the truth of science as more true than the truth of the Bible.<sup>8</sup>

Ground for Schaeffer's concern that too often we somehow permit science to have veto power over the Scripture appears in the classic biblical injunction: "To the law and to the testimony, if they speak not according to this word, it is because there is no light [dawn] in them" (Isa 8:20). Paul emphatically agrees, placing a christological significance to the standard: "We are destroying speculations and every lofty thing raised up against the knowledge of God, and we are taking every thought captive to the obedience of Christ" (2 Cor 10:5). This sound advice would seem to suggest that "every thought" of human reason will be wise to become subject to the teaching of Christ found in His inspired Scriptures which testify of Him (Luke 24:27). Thus, every discipline will be subject to the Scriptures. Every philosophy of science issue is to be subject to the teachings of Scripture. For us today the passage implies, for instance, that every geological, paleontological claim is to be subject to the teaching of Christ. The internal claims of the Scriptures seem to teach clearly that the Bible carries the final authority and is the standard

by which consistently, not occasionally, all other claims to truth are to be judged. Ellen White endorses this position as noted in the following paragraph.

Commenting on the issue of the relative authority of the Bible in comparison with other sources of truth, Ellen White states that

He who has a knowledge of God and His Word has a settled faith in the divinity of the Holy Scriptures. He does not test the Bible by man's ideas of science [emphasis supplied]. He brings these ideas to the test of the unerring standard. He knows that God's word is truth, and truth can never contradict itself, whatever in the teaching of so-called science contradicts the truth of God's revelation is mere human guesswork.<sup>9</sup>

The above quotation clearly places the Bible above human science and human reflections.

However, two basic reasons Ellen White suggests for the elevation of the Bible above science or human reason are very instructive and helpful. The first reason reads as follows: "The earth, marred and defiled by sin, reflects but dimly the Creator's glory. . . . Nature still speaks of her Creator. Yet these revelations are partial and imperfect. And in our fallen state, with weakened powers and restricted vision, we are incapable of interpreting aright. We need the fuller revelation of Himself that God has given in His written word."<sup>10</sup> Here Ellen White underscores the significant anthropological truth that the negative effect of sin upon human reasoning renders a person dependent upon the guidance of the Word of God. Why do scientists often contradict the claims of Scripture? Ellen White answers that, "The greatest minds, if not guided by the Word of God, become bewildered in their attempts to investigate the relations of science and revelation... and because these cannot be explained by natural laws, Bible history is pronounced unreliable."<sup>11</sup> Thus, the first reason some philosophers of science contradict the Bible is because they are not guided by the written propositional Word of God, supposing instead, that all things can be explained by natural law.

Ellen White formulates the second reason in these words: "the mind not enlightened by God's Spirit will ever be in darkness in regard to His power. This is why human ideas in regard to science so often contradict the teaching of God's word."<sup>12</sup> Thus, the passages of Ellen White presented in this subsection suggest that for two reasons human reason frequently contradicts the teachings of God's word. Contradiction occurs when the human mind is neither guided by the propositions of the Bible, nor illumined by the Holy Spirit who inspired the propositional Word of God. This conclusion carries sobering implications for a Christian philosophy of science in terms of the question of the method of knowing.

However, the benefit of being guided by these two lights yields beautiful harmony classically described by Ellen White in these terms: "In true science there can be nothing contrary to the teaching of the Word of God, for both have the same Author. A correct understanding of both will always prove them to be in harmony."<sup>13</sup>

A final cautionary reflection in this context may be useful. While elevating biblical authority to a level above science is crucially important, doing so can sometimes, surprisingly, be compromised if a person accepts less than a full hearing of what the Scripture teaches on a particular point. Take, as a case in point, Clark Pinnock's recent position regarding animal death before sin and the extent of the flood. Concerning these he writes:

If, for example, we were to ask whether there was animal death before the Fall; the fossil record says that there was, though Scripture is mute. It would seem wise to say that there was. Or, if we ask whether the flood was universal; geology says it was probably not and Scripture does not rule that possibility out. . . . In many such instances, science will indicate a likely path of interpretation.<sup>14</sup>

In the illuminating paragraph just quoted, Pinnock is suggesting, for instance, that one may properly accept the scientific denial of a global flood because the Bible allegedly does not rule

out the possibility that the biblical author may have thought that the flood was a local event. While Pinnock rightly invites us to hear both science and the Bible, one may be puzzled by the seeming ease with which Pinnock characterizes certain biblical positions. Is the Scripture truly "mute" regarding the issue of animal death before the Fall? Is the Scripture actually ambivalent on whether God's judgment flood was a local or a universal catastrophe, as Pinnock claims? The Scripture is clearly and emphatically not ambivalent on this point, as conclusively shown by Richard Davidson's forthcoming insightful, exegetical, and theological assessment of the teaching of Bible on the extent of the biblical flood.<sup>15</sup> This underscores the importance of first hearing the full teaching of Scripture on a particular point before allowing an interpretation of science to lead the way.

A final preliminary issue in a Christian and Adventist philosophy of science deals with the role of Ellen White in relation to a philosophy of science which is discussed in the following section.

### **The Relation of the Writings of Ellen White to the Bible and to an Adventist Philosophy of Science**

By 1885, a consistent, striking insistence can be discovered emerging in the writings of Ellen White to the effect that, "The Bible, and the Bible alone, is to be our creed . . . Let us lift up the banner on which is inscribed, The Bible our rule of faith and discipline."<sup>16</sup> Adventists are indeed people of the Book. This means that an "It is written," is the test of all experience and claims to truth, which has the effect of placing the writings of Ellen White properly in subjection

to the Bible. However, this relationship does not reduce the reliability or doctrinal authority of her works.

Current attempts to neutralize the divine, prophetic, doctrinal authority of the writings of Ellen White, thus effectively marginalizing her complete ministry, ignore a famous and important Aristotelean distinction between material and instrumental causality.<sup>17</sup> According to Aristotle, material causality is "that out of which a thing comes to be,"<sup>18</sup> while efficient or instrumental causality is "that which makes what is made."<sup>19</sup> Ellen White's use of sources was not for material cause purposes, but rather for instrumental or efficient cause purposes. Ellen White herself plainly indicates that at times she used language from selected authors for the purpose of rendering the delivery of a concept received from Jesus Christ more forceful, but not as a source of the concept itself. Thus, language of selected authors was sometime used because a particular statement from a writer, in her words, "affords a ready and forcible presentation of the subject."<sup>20</sup> Her description "forcible presentation" in this quotation signals instrumental causality. Failure to make and apply this simple, but profound and well-known philosophical distinction between material and instrumental causality sadly seems to represent irresponsible scholarship attempting to confuse people with nothing but bogus difficulties.

In this context the response to the following question is crucial: Did the living Lord communicate with Ellen White in genuine visions analogous to Christ's direct communications with John on the Island of Patmos? If so, then the writings of Ellen White immediately constitute a precious treasury of divinely caused instructions, counsel, and information from Jesus Christ, leading to a deeper appreciation of Scripture. If this is the case, then her writings should be cherished and used widely in Adventist scholarship.

After thorough and prayerful assessment of the life and ministry of Ellen White, the Adventist Denomination continues to offer an affirmative response to the question raised above. This does not mean that the writings of Ellen White should be added to a closed Canon. Rather, it does mean that the wise biblical injunction applies to her writings: "Believe His prophets so shall you prosper" (2 Chron 20:20). This raises the question whether an Adventist philosophy of science can fully prosper if it is "slow of heart to believe in all that the prophets have spoken" (Luke 24:25) including the writings of Ellen White, which disbelief can amount to stoning her contributions relevant to the philosophy of science. By contrast, a healthy Adventist philosophy of science will make wide use of the counsels in the writings of Ellen White related to the relation of science, philosophy and the Bible.

This analysis summarizes the possible relation of Ellen White's writings to the Bible and to a Christian philosophy of science adopted in this essay. We turn now to a discussion of five revolutionary concepts in the philosophy of science drawn from the First Angel's Message of Revelation 14:7.

### **Introduction to a Christian Philosophy of Science Imbedded in the First Angel's Message**

There is powerful Christian philosophy of science in the First Angel's Message. A minimum of five concepts relevant to a Christian philosophy of science appear to be implied in the passage.

Physicist Dale Pau suggests that occasionally, in the burgeoning field of the infrastructure of Internet scientific technology, a concept emerges which is so revolutionary, so

valuable that when developed and patented it literally transforms a niche, nullifying previous applications while making its owner very wealthy in the process.<sup>21</sup> Annalists refer to these revolution-making, paradigm-shifting new concepts as "killer applications."<sup>22</sup> Understandably, everyone participating in the new Internet era would like to be the one creating the next killer application. When this concept is introduced into the philosophy of science a killer principle represents a concept of such profundity that it has the power to revolutionize an entire reigning paradigm, for example, within the philosophy of science.

In light of the fact that the philosophy of science deals with overarching concepts such as: the function of meta-narrative or high-level theory in the natural sciences, methods of knowing, the method of origins, cosmology, a philosophy of nature, and so on, the following few words in the First Angel's Message, "Worship him who made the heavens, earth and sea and the fountains of waters," are particularly significant containing five revolutionary or killer principles of a Christian philosophy of science.

**A First Revolutionary Principle of a Christian Philosophy of Science:  
"Worship God"-- Start with a Personal Knowledge of God**

This principle is broached in the command to "worship him!" This imperative is analogous to the opening words of the First Angel's Message, "Fear God!" David concretizes the epistemological implications of Revelation's command to "Fear God," by causally linking human knowing and God: "the fear of the Lord is the beginning of wisdom" (Ps 111:10). This observation appears to be an unqualified claim which would seem to render it a universal claim, hence it would apply to the methodology of a Christian philosophy of science. Understood in

this way, the command to "Fear God or to Worship God" can carry profound implications for an epistemology of a philosophy of science. Where does one start in knowing anything? Revelation 14:7 seems to imply that the answer is to start with a personal knowledge of God. In a broad sense, put God first in all things one does. This means that in a Christian philosophy of science, the personal knowledge of Jesus Christ, the Word, plays a regulatory epistemological role.

The consequences of this first epistemological methodological principle of a Christian philosophy of science can be revolutionary indeed. The implications are significant for any philosophy of science which starts with humanistic, materialistic principles or parameters, and which limits the concept knowledge to that received through the fallen human senses (David Hume), or by that which the fallen human mind contributes (Immanuel Kant).<sup>23</sup> The epistemological constrictions of an empirical materialistic starting point can be illustrated, on one level, by a claim made by the geneticist Richard Goldschmidt: "There is no room for transcendental principles in experimental physics and chemistry."<sup>24</sup> In this instance, how does one factor into an understanding of reality the profound biblical claim that "[I]n Him all things hold together" (Col 1:17)? Presumably, even the laws of physics are involved in this divine action.

For us today, the implications of the imperative "Worship God" can mean that the contribution made by God Himself to human knowing is to be of first important to a Christian philosophy of science. This insures that the Christian philosopher of science will be guided by the written Word of God and by the illumination of the Holy Spirit. We turn to a second principle of philosophy of science in the First Angel's Message.

**A Second Revolutionary Principle of a Christian Philosophy of Science: Unchanging  
Meta Narrative in the Form of a Six-Day Cosmogony Continues to  
Exercise a Regulative Role**

In the current post-modern era, the concept of truth described by the metaphor of foundation or pillar as representing some unchanging meta-narrative valid for all time, seems to have vanished. Philosopher of science, Stephen Toulmin, warns that one should not be tied to one meta-narrative or single scientific paradigm of reality, because the natural sciences no longer make any claim to permanent or fixed ideas. He states that even "physical theory . . . is finally engulfed in the same historical flux as the human and social sciences."<sup>25</sup> According to Toulmin, the implications for a Christian philosophy of science is that the theologians should "free themselves from the seduction of 'new paradigms' and become frankly reconciled to being . . . 'paradigmless.'"<sup>26</sup> Otherwise, warns Toulmin, "They will simply lay up fresh trouble for theology a century or two down the road, when scientists have rethought the problems of their own disciplines, to the point of making radical changes for which theologians would once again be ill prepared."<sup>27</sup> However, a Christian philosophy of science embraced in this essay takes a different view of the role of meta-narrative to which we now turn.

In contrast to the mistrust of and the turning away from the concept of unchanging meta-narrative discussed above, the following line in the first message of Revelation 14, "who made the heaven and the earth and sea," implies a revolutionary perspective. In a recent exegetical study, New Testament scholar, Jon Paulien finds a direct verbal parallel between the words of Revelation 14:7c "made the heaven, and the earth and the sea," and the words of Exodus 20:11 "made the heavens and the earth, the sea."<sup>28</sup> According to Paulien, this parallel, along with thematic and structural parallels, shows that the latter portion of the First Angel's Message

constitutes a clear, definite allusion to the fourth commandment of the Decalogue within the broader context of a worldwide call to worship the only true God.<sup>29</sup>

Four distinct verbal parallels existing between Revelation 14:7c and Exodus 20:11 help to show that the New Testament passage is a definite allusion to the fourth commandment of the Decalogue. The first verbal parallel is between the verb "made" in Revelation 14:7c, and the same verb "made" in Exodus 20:11. The next three verbal parallels involve three specific nouns "heaven," "earth," and "sea" which appear in both passages, not only as the same three specific nouns, but also in the same specific order as shown above. Along with the thematic and structural parallels identified by Paulien, the striking verbal parallels establish that Revelation 14:7c constitutes a definite allusion, not merely an echo, specifically to the cosmogonic (origin of the earth) portion of the fourth commandment as articulated in Exodus 20:11.<sup>30</sup>

Building on Pauline's work, two considerations indicate that Revelation 14:7c endorses the items to which it alludes in Exodus 20:11. First, the allusion is made in the context of listing particular divine acts identifying the One whom human beings should worship, thereby clearly establishing these divine creative acts mentioned in Revelation 14:7c as approved identifiers of the true God. Second, when the Revelation passage alludes to the same acts of creation already mentioned in Exodus 20:11, the allusion thereby endorses the items mentioned in Exodus 20:11.

Because Revelation 14:7c points with approval to the fourth commandment, partially mentioned in Exodus 20:11, the Revelation passage constitutes an approving allusion to the seventh-day Sabbath, and thus to the partial reason for its divine selection indicated in Exodus 20:11 by the words, "For in six days the Lord made . . ." This means that Revelation 14:7c, by implication, endorses the entire content of Exodus 20:11. If this is correct, Revelation 14:7c

implies an endorsement of the phrase "in six days" found in Exodus 20:11, even though the Revelation passage does not explicitly use the words, "in six days." This crucial exegetical conclusion carries implications for a worldview as suggested in the following discussion.

Knowing that Revelation 14:7c implicitly endorses the entire contents of Exodus 20:11, including the notion of a six-day creation, an exegete, theologian, philosopher of science, or lay reader is authorized hermeneutically, when interpreting Revelation 14:7c, to copy the temporal "in six days" concept specifically mentioned Exodus 20:11, and to insert this key notion into Revelation 14:7c at the location where this concept is assumed or implied as follows: ". . . worship Him who, in six days [assumed or implied by an approving allusion to Exodus 20:11 in total], made the heaven, earth and sea." The following diagram in Figure 1 illustrates this endorsement.

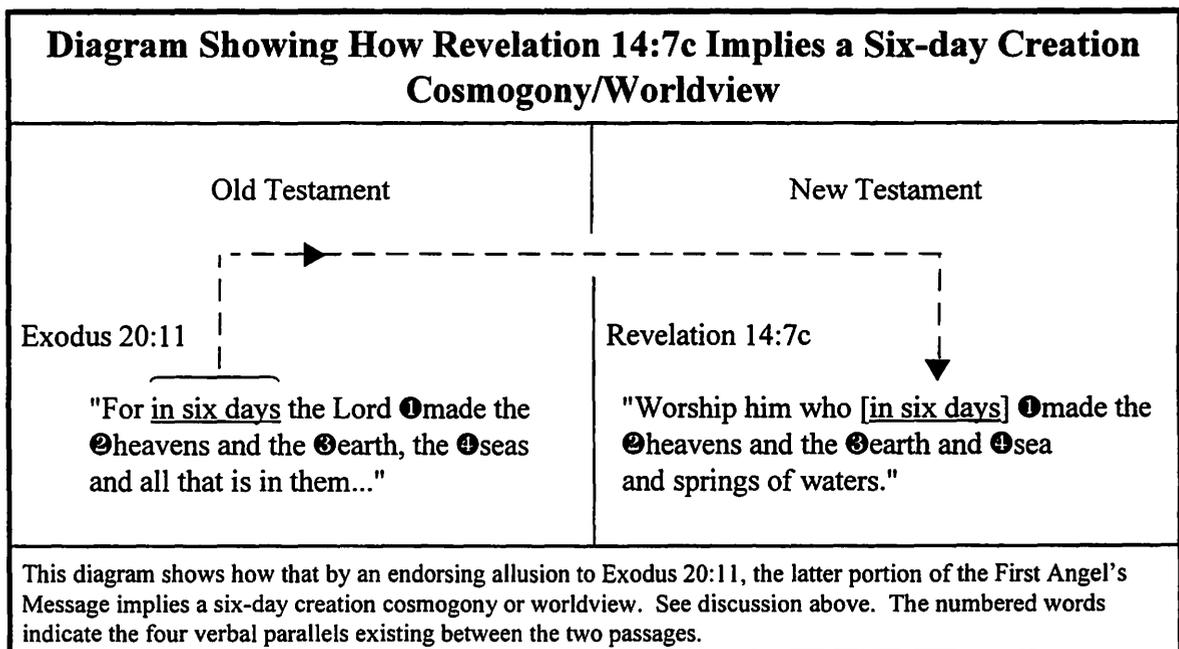


Figure 1

Figure 1 diagrams how Revelation 14:7c represents a divine endorsement of a literal six-day creation cosmogony. When considered from the perspective that the elements of this message are to be understood as present truth or as reliable history, by individuals living in the nineteenth century and onward, the meta-narrative implied in the message significantly impacts contemporary philosophy of science. Minimally, it suggests that indeed the natural sciences can make claims to permanent and fixed ideas about cosmology so long as they are guided by the written Word of God and illuminated by the Holy Spirit. In view of a Darwinian philosophy of science, this conclusion is a revolutionary concept.

The first message of Revelation 14 has other revolutionary principles relevant to a philosophy of science to which we now turn.

**A Third Revolutionary Principle of A Christian Philosophy of Science:  
A Christian Philosophy of Nature Is Radically Shaped by  
the Surprise Phrase "Springs of Waters" (Rev 14:7)**

A philosophy of nature is a sub-area of study within a philosophy of science. Questions related to a philosophy of nature include both broadly oriented questions and more narrowly focused queries. In the broad category of questions a philosophy of nature asks, for example, What is matter? Is it inert, or does it possess emergent qualities of itself? Representing more the narrowly focused questions, a philosophy of nature may ask, for instance, does the present earth as we see it today stand in unbroken continuity with the past history of the earth whatever that history may be?

The striking phrase "springs of waters" in the First Angel's message may offer assistance of a revolutionary magnitude in responding to the more narrowly focused questions of a

philosophy of nature noted above. However, in order to appreciate the possible significance of the phrase from a philosophy of science perspective, it is first necessary to discuss the possible exegetical identity and theological implications of the phrase "springs of waters" in relation to the interpretation of the content of the First Angel's Message itself.

#### The Possible Theological Implications of the Language "Springs of Waters"

Why, with a loud voice, would the messenger of Revelation 14 draw the attention of peoples living in every age, thus calling the attention of people representing all academic disciplines in the modern and postmodern eras, specifically to the claim that God created the "springs of waters" (Rev 14:7)? In other words, In light of the content of the first message, why might the angel have identified the "springs of waters," from among all other possible natural candidates within the created order which could have been mentioned for consideration? The messenger could have specified that God created the "beautiful cedar trees," or the "swift deer" or delicious "grapes." Why mention "springs of waters"?

On the one hand, one might claim that there is nothing of special importance about mentioning "springs of waters" in Revelation 14:7 other than that the statement simply represents one of the countless natural realities that God created and nothing more? On the other hand, could it be the case that God, through John, may be intending that all people, even those living in the nineteenth century and onward,<sup>31</sup> can discover concepts of deep importance by the surprising specificity of the phrase? The latter possibility is explored below.

Nowhere else in the Scriptures are the "springs of waters" mentioned in conjunction with language, as studied above, alluding, echoing, or quoting a portion of Exodus 20:11. In this sense, this singular connection might be called a hapax legomenon connection, i.e., a connection

found only once in the Bible, in Revelation 14:7c. Thus the phrase may have a special significance.

In attempting to discover what this significance might be, it is helpful to note the specific claim that God created "springs of waters" would include all springs of waters and thus those springs of waters called in the Bible "fountains of the deep" (e.g. Gen 7:11; 8:2; Prov 8:28). This means that the messenger is calling the attention of all people to the fact that God created the "fountains of the deep." Why?

As a background to answer the above question, a biblical chapter personifying divine wisdom states that "when the springs of the deep became fixed," then "I was beside Him as a master workman" (Prov 8:24, 28, 30). Importantly, the Greek form of "springs" or "fountains" in the phrase "springs of waters" recorded in Revelation 14:7 is pēgē, and parallels the LXX form of "springs" or "fountains" in the phrase "fountains of the deep" appearing in Proverbs 8: 24, 28; and in Gen 7:11). This links the notion of the springs of waters with the concept springs or fountains of the deep. Specifically, Solomon indicates that by wisdom God created the "springs of the deep" (Prov 8: 28, 30). Evidently they were part of the plumbing of this earth.

Why might the first angel refer to the springs of waters, which would include the fountains of the deep, in light of the content of his message? Is there anything special about the fountains of the deep which could constitute sufficiently good reason for God to single them out for implied+ reference in the First Angel's Message, beyond the fact that they simply represent one among many of the natural wonders God created? A possible biblical connection noted below seems to point the way to a deeper significance of the use of springs of waters in the First Angel's Message. We review the exegetical basis first.

As noted above, the Greek form of "springs" in the phrase "springs of waters" in the Revelation passage is, significantly, similar in construction with the LXX rendering of Genesis 7:11. With striking temporal specificity Genesis 7:11 states that "[i]n the six hundredth year of Noah's life, in the second month, on the seventeenth day of the month, on the same day all the fountains of the great deep burst open" (Gen 7:11). The breakup of the fountains of the deep represents the commencement of God's global flood sent as a divine universal judgment against human sin. By anticipation, any geologic record which a global flood might leave in the earth would therefore be properly interpreted as representing God's divine judgment against sin. This interpretation, if geologically true, would be a remarkable piece of a Christian philosophy of nature regarding a contemporary interpretation of portions of the earth's crust. This notion will be discussed subsequently.

For present purposes, it is helpful to analyze what possible connection might exist between the breakup of the fountains of the deep during the flood, and the mentioning of the "springs of waters" in Revelation 14:7? Could it be that by mentioning "springs of waters" in Revelation 14:7, a connotation to God's universal judgment flood is intended? Minimally, springs of waters include the fountains of the deep, which can refer one to the time they broke up at the flood, thus leading one to think of this global aquatic catastrophe. If so, why might God wish to provide an intimation to His global judgment flood in connection with the First Angel's message? This question is addressed below.

The content of the passage in Revelation 14 may provide a key to the wisdom behind God's possible intimation, perhaps allusion, to His global judgment flood in the latter portion of the First Angel's Message. The unique message of the First Angel is stated as follows: "Fear

God and give Him glory, because the hour of His judgment has come" (Rev 14:7). As understood theologically, this message announces the commencement of a divine investigative judgment near the end of human history, which judgment itself prepares for a final global judgment, this time by fire. In the setting of a message about divine judgment, how fitting it is for God to present special language which can intimate to the reader God's earlier action of judgment upon all human beings.

Contemporary critics of God might complain that He is not a God of judgment because He is too merciful not to save all individuals. However, if a person doubts whether God is a God of judgment, the possible implication of the words "springs of waters" can be a forceful reminder that God indeed is a God of judgment by having sent a global aquatic destruction upon all unrepentant human beings in the past.

In this context, Peter specifically links the two global judgments together in a classic passage: "the earth was formed . . . by water, through which the world at that time was destroyed, being flooded with water, but the present heaven and earth, by his word, are being reserved for fire, kept for the day of judgment and destruction of ungodly men" (2 Peter 3:5-6).

If the above analysis is correct, how fitting and wise on the part of God to have the angel of Revelation 14 use language such as "the springs of waters" in his message, thereby alluding to God's global aquatic flood (the mabbûl), and thereby encouraging the hearers to accept as true the unique announcement of a pre-advent judgment. Thus, the theological implications of the flood imagery can serve both to reinforce the truthfulness of the first message in Revelation 14 and to implicitly warn of a subsequent global undoing of creation, this time by fire.<sup>32</sup>

The way is now prepared to turn to a discussion of the profound implications such a

possible intimation to a global flood carries for a key aspect of a twenty-first century Christian philosophy of nature.

### A Christian Philosophy of Nature Informed by Implications of the the Phrase "Springs of Waters"

Having analyzed the possible meaning of the phrase "springs of waters" in the immediate context of the First Angel's Message in relation to the interpretation of the unique portion of the First Angel's Message, we are now prepared to proceed to the original question of this section regarding the issue of a philosophy of nature and the phrase "springs of waters." For purposes of this new discussion, the central question can be formulated in somewhat Leibnizian fashion along the following lines: Does the present earth represent the best of what God originally had in mind for the earth? Or, does the present earth, in some fashion, stand in radical discontinuity with God's original intention?

By referring specifically to the surprise phrase "fountains of waters," in Revelation 14:7, and hence to God's global flood, the heavenly messenger can be understood to be alluding to the single most important physical phenomenon of earth history capable of responding to the philosophy of nature question noted above, asking whether the present earth represents what God originally intended for this earth, or whether the present world stands in discontinuity with the end that God originally designed for this world. The reality of a historical global flood suggests, contra Leibnitz, that this present earth is not the best of all possible worlds. By the devastating effects of the flood, the crust of the earth has become subjected to the divine wrath of God in response to human sin, and has been re-formulated by the high-energy event of the global flood.

Thus, for us today, the phrase "springs of waters" can imply that the present earth stands in sharp discontinuity when compared with God's original intention for the earth. This means that

the geologic column, interpreted in the light of the Word of God, represents the record of divine wrath against sin and not the record of millions of years of slow deposition.

This analysis indicates some of the far-reaching implications for a philosophy of nature and science which potentially lie imbedded in the First Angel's Message. A further revolutionary implication of the mabbûl intimated by the phrase "springs of waters" is discussed in the following section.

**A Fourth Revolutionary Principle in a Christian Philosophy of Science: Geologic Confirmation of a Christian Philosophy of Science Meta-Narrative of a Six-Day Cosmogony Established by the Phrase "Springs of Waters" of Rev 14:7**

By referring specifically to the phrase "fountains of waters," in Revelation 14:7 the messenger can now be seen to be alluding to the single most important physical phenomenon of earth history capable of scientifically legitimizing belief in a rapid six-day creation. God's global flood solves the following difficulty.

In the early nineteenth century the new sciences of geology and palenotology joined in disproving the possibility of a historical six-day creation in a very impressive fashion. Geology and paleontology discovered the fossil-filled geologic column with the fossils appearing in the column in a sorted fashion. The very simple forms are found at the bottom of the column while the forms become increasingly complex as one ascends the geologic column until human remains

appear in its top layers. William Buckland and other Christian geologists concluded, in the early portion of the eighteen hundreds, that this discovery confirmed the claims of James Hutton and Charles Lyell and other geologists that evidence of the multiple layers of the column and the ordering of the fossils in the layers proved, beyond a reasonable doubt, that the earth as it stands before us at present represents a history of long-age development in terms of millions of years.<sup>33</sup> This indicates that the discovery of the fossiliferous geologic column is regarded as irrefutable proof that a belief in a six-day creation must be abandoned in a proper Christian philosophy of science and that scriptural claims countering this conclusion must be reinterpreted to fit the new findings of science. Clearly, the seventh-day Sabbath as a memorial of a six-day creation was fatally undermined. However, the action of the global flood is God's geologic answer to the challenge presented by the discovery of the geologic column and hence is the single event in earth history which can establish in part geologically the possibility of a historical six-day creation.

If one believes in a literal six-day creation with no animals of any kind living on the earth before the six-day creation,<sup>34</sup> there should be no fossil filled geologic column. Why? In a recent six-day creation (assuming that no life forms existed on the earth in any form before creation week) all the animals created during the creation week, from the smallest to human beings, will all be living at the same time together. After the entrance of sin, why would not all the types of animals and plants die and be buried together in approximately the same layer? But in the geologic column the animals are sorted out, with "higher forms" in the upper layers. If this sorting is not associated with a global catastrophe, then it appears that long ages of evolution would be required to explain the order of fossils in the geologic record.

A sorted, fossil-filled geologic column described above exists. This means that the Christian philosopher of science can choose either to relinquish the reality of a six-day creation, or elect to look for an alternative account of the formation of the geologic column differing from the account offered by a conventional philosophy of science. Here is where God's global flood acquires revolutionary proportions for a conventional philosophy of science. If a Christian philosopher of science by faith accepts as true God's global flood, such a person can see that the power of the flood is able to rapidly sort and bury dead forms after the fall into the basic pattern seen in the present geologic column.<sup>35</sup> Just how the actions of God's global flood may have accomplished this sorting is an ongoing research interest of the Geoscience Research Institute, and of all individuals interested in this issue. While opting for another interpretation of the data, one geological text book indicates that existing geological data can reasonably be interpreted as being formed by a global aquatic catastrophe:

A catastrophist might contend that the twisting and breaking of strata, the transportation of huge blocks of rock, the violent cutting of canyons, and the wholesale destruction of life is within the power of a great universal flood--and he would be right.<sup>36</sup>

In view of the analysis above, only by the action of the global flood can the six-day creation become a historical possibility. This suggests that belief in a six-day creation requires belief in a global flood. The two concepts go hand in hand together. One cannot have a six-day creation without a global flood as indicated previously. This fact needs to be mentioned and uplifted more frequently and clearly so that believers can understand the importance of accepting God's global flood as historically true.

While some Christian geologists continue to suggest that geology does not support the reality of a global flood,<sup>37</sup> the truth remains that the global flood is the only geological

phenomenon that can possibly create large portions of the fossiliferous geologic column after the creation week, and thereby make geologically possible a continuing belief of the reality of a six-day creation week.

However, many contemporary theologians and Christian philosophers of science continue to reject a six-day creation because of the discovery of the fossil-filled geologic column. They subject the claims of the Genesis creation narratives, for example, to category translation as illustrated by these lines by Langdon Gilkey, dean of theologians studying the relation of science and religion: "[W]hile the knowledge that God created the world is a response to divine revelation, the early account in Genesis of how it was done [by a six-day creation] has no status as 'revealed truth,' even though it was the form in which the revelation was enshrined by the Hebrew mind."<sup>38</sup>

The discussion above shows the profound significance of accepting as true the historical reality of God's global flood and hence of the Sabbath as its proper memorial of a creation finished in six days. Furthermore, this shows the great wisdom of God in placing language into the First Angel's Message which points believers to the reality of His global flood, thus establishing the historical possibility of the literal six-day creation. Could it be that God, in His foreknowledge, anticipated the nineteenth-century discovery of the geologic column and the devastating interpretation which secular geologists would give of the geologic column as proof positive of the impossibility of a six-day creation which immediately destroys both the character of God and the seventh-day Sabbath? Did God intend, among other things, that the phrase "springs of waters", in its capacity of referring to the historical event of God's global flood, should serve to answer the challenge against a literal six-day creation week presented by the

discovery of the fossil-filled geologic column? If so, as suggested in this essay, the wisdom of God displayed in this instance is profound indeed. What a great God we serve. He is worthy to be worshiped and praised.

We now turn to a final revolutionary concept in a Christian philosophy of science.

**A Fifth Revolutionary Principle of a Christian Philosophy of Science: The  
Meta-Narrative of a Six Day Cosmogony Preserves the Goodness  
of God in View of the Alleged Reality of Paleo-Natural Evil**

The theodical issue of the goodness, and loving character of the creator God presented in the First Angel's Message is crucially important. On what basis should humans worship the Creator? Should human beings worship Jesus simply because He created all things? Is the fact that God is the creator of human beings enough reason to justify human worship of God? Or, is something more needed? Thus, on what basis is Jesus worthy of worship?

One proper response to the questions presented above seems to be that the worship of the Creator must be grounded not upon the general fact that He has power to create, but upon the truth that He is indeed a good Creator. But, how does one determine whether the creator is good? It turns out that the method of creation employed by the Creator determines whether He is either a good or a demonic creator as indicated in the following analysis of two contrasting methods by which God is described as creating life forms on this earth.

The theistic evolutionary method of creation is considered first. A Christian philosophy of science, wedded irrevocably to an evolutionary cosmology, cannot but fatally impact the goodness of God. Philosopher Bertrand Russell insightfully introduces the problem as follows:

Religion, in our day, has accommodated itself to the doctrine of evolution . . . . We are told that evolution is the unfolding of an idea which has been in the mind of God through out. It appears that during those ages . . . when animals were torturing each other with ferocious horns and agonizing stings, Omnipotence was quietly waiting for the ultimate emergence of man, with his still more widely diffused cruelty. Why the Creator should have preferred to reach His goal by a process, instead of going straight to it, these modern theologians do not tell us.<sup>39</sup>

Indeed, theologians advocating theistic evolution do not generally like to speak about this problem. In fact, in a recent Ph.D. dissertation, Gregory Elder argues that the Victorian theologians, who so quickly accepted a providential evolution, failed to address whether God can remain a moral God and at the same time guide the process of biological evolution.<sup>40</sup> In the following quotation philosopher David Hull responds to this question:

[The process of macro-evolution] is rife with happenstance, contingency, incredible waste, death, pain and horror . . . the God implied by evolutionary theory . . . is not a loving God . . . He is . . . careless, indifferent, almost diabolical. He is certainly not the sort of God to whom anyone would be inclined to pray.<sup>41</sup>

In the quotation just cited, notice the devastating characterization of God crafted by David Hull in the words, "almost diabolical." Hull at least is pointing toward a proper conclusion. However, attributing the process of evolution to the providential guiding hand of God does not make God "almost diabolical;" it makes God outright diabolical.

Recently, Dwight Nelson has published the most outspoken, passionate articulation implying brutality to God if He indeed uses evolutionary principles to create:

If God was the One who started the [macro-evolutionary] process billions of years ago and guided it through the eons, we are forced to believe that God used brutal pain and brutal death to finally achieve the evolution of humans . . . . What kind of God would subject His Creation to brutal death before there was even rebellion? . . . Dear reader, in the holy name of God, why would the Creator resort to such a strange and bloody method for the Creation and bringing into existence of a being after His own image?<sup>42</sup>

In the above paragraph Nelson rightly implies that attributing a providential macro-evolutionary process to God necessarily turns a loving God into a brutal, if not demonic God. This means that Nelson's assessment shows the tragic result which follows when a Christian philosophy of science places the interpretations of naturalistic science above the clear teaching of the Word of God as a whole regarding the true method which God used in creating life forms on this earth.

On the encouraging side, some contemporary philosophers of science are beginning to formally acknowledge that profound difficulties are associated with crediting God with direct responsibility for the macro-evolutionary process. One of these thinkers is Philip Clayton who offers a remarkable concession relating to the issue of how far God may be involved in the macro-evolutionary process. Concerning this question Clayton writes:

The process of evolution is extraordinarily wasteful, and it manifests arbitrariness to a much greater degree than his [Hatche's] article grants. . . . For instance, if we respect the autonomy of the evolutionary process, we cannot say that the God of evolution intended our particular physical form, our present environment, or the precise physical "goods" that we experience. . . . A God who allows countless billions of organisms to suffer and die, and entire species to be wiped out, either does not share the sort of values we do, or works in the world in a much more limited and indirect way than theologians have usually imagined. Since revelation rules out a pernicious God, it may ultimately be that one must let go of the idea that God directly brings about the details of the evolving biological world.<sup>43</sup>

Clayton's assessment is laudable and troubling at the same time. Commendably, he correctly observes that revelation disallows the existence of a pernicious God. However, rather than investigating an alternative Christian philosophy of science, Clayton embraces as historically true the conventional macro-evolutionary process and then concedes that the Christian may need to adjust the biblical account of God's relation to the world, rather than to adjust the interpretation of science to align with the clear teaching of the Word of God. This is the reason

why Clayton seems willing to allow that God may not directly bring about the details of the evolving biological world.

Ironically, this move only throws one onto the horns of a deeper dilemma. If God does not directly bring about the details of this life, or if He does not directly intend our particular physical form, our present environment, or the precise physical "good" that we experience, how can a human properly be called the masterpiece of God's creation? This conception robs Christ of the glory for creating humans in His image. However, a contrasting method of creation restores the lost glory to Christ.

The second and contrasting creation method is the six-day creation process. Contrary to a postmodern macro-evolutionary perspective, a Christian philosophy of science, which continues to accept the first angel's meta-narrative six-day cosmogony as the unchanging foundational true record of actual history, establishes the goodness of God's character in face of the alleged challenge of paleo-natural evil. The first angel of Revelation 14 calls all humans to worship the God "who made." But as indicated above, this is not enough information upon which to base our worship of God. In addition to the general claim that God is creator, something more is needed to call forth worship from human beings. God may be our creator, but before we give ourselves to Him in worship it matters immensely whether He is either a good or a cruel creator. The Bible clearly teaches throughout that He is good and faithful. On this point the words of Exodus 34:6 are a powerful witness: "Then the Lord passed by in front of him and proclaimed, 'The Lord, the Lord God, compassionate and gracious, slow to anger, and abounding in loving kindness and truth.'" He is the God who even makes a covenant with the animals that they will never again be subjected to destruction by a flood of waters (Gen 9:11-12). Would such a God deliberately

choose to create by the method of macro-evolutionary theory? The First Angel's Message offers an important response to this question.

The First Angel's Message carries language which helps to indicate that one crucial factor determining the goodness of the creator resides in His method of creation. If all that was necessary for humans to know about God in order to worship God was that He is our creator, then the text of Revelation 14:7 could stop with the statement of the fact that God is creator signaled by the phrase ". . . Him who made." Fortunately, the text does not stop there. The text adds the following utterly significant words: "the heavens, earth, sea." As established in the first section above, these additional words imply the very method by which God created. Thus, Revelation 14:7c establishes not only that God is creator, it also indicates that God created by a six-day method. When incorporated into a Christian philosophy of science, the six-day creation method becomes a revolutionary concept in light of the macro-evolutionary cosmology endorsed by a conventional philosophy of science and by many Christian biblical scholars and theologians today.

The beauty and importance of the six-day creation method is that the rapid creation process used by God preserves His goodness. Compared to the God of theistic evolution who is shown to be demonic by the cruel method He uses, a cruel process in which countless millions of animals suffer and die as higher forms come onto the scene, the God of the First Angel's Message is shown to be a good creator. How? The First Angel's Message uses language showing that God is good because He creates by a rapid method of creation, which is shown in Genesis to be a death-free and pain-free six-day process. This rapid method of creation establishes that Jesus is not a cruel demonic creator, which He would be, were He to create

through the millions of years required by evolutionary processes. Thus, Jesus is shown to be a good Creator working in a fashion commensurate with His goodness, thereby establishing that He is indeed worthy of worship.

### **Conclusion**

Assuming the propositional nature of the Word of God, the discussion has discovered five potential ways in which the strategically important biblical imperative, "worship Him who made the heaven, and the earth, and sea, and the springs of waters," may inform a Christian philosophy of science in the current post-modern era. First, the words "worship Him" can suggest that a Christian philosophy of knowing begins with a personal knowledge of God as a primary epistemological method of knowing in all projects, even in the natural sciences.

Second, while the words, "Him who made," give us the fact that God is creator, the next terms, "the heaven, and the earth, and sea," imply the historical reality of a meta-narrative regarding cosmology even in a postmodern context. These words indicate that God created by a six-day method.

Third, the final words, "the springs of waters," inform a contemporary Christian philosophy of nature by pointing to the earth-destroying action of God's flood, thereby showing that this present world stands in radical discontinuity with God's original plan for this earth. Contrary to Leibnitz, the present world is not the best of all possible worlds.

Fourth, the same words, "the springs of waters," establish geologically the possibility of the six-day method of creation in face of the devastating effect the discovery of the fossiliferous geologic column has upon the perception of the truth of a six-day creation. The two concepts

cannot be separated without destroying one another. If there is no global flood there cannot be a six-day creation. If there is no six-day creation, there is no need for a global flood.

Fifth, and perhaps above all, the words "Him who made the heaven, and the earth, and sea, and springs of waters," establish the goodness of God. For us today, these words can imply that God's method of creation is not a cruel process of slow, tortuous activity spanning millions of years. Rather, these words show that His method of creation is a profoundly good method because it is a brief six-day process which is death-free, as indicated by the Genesis creation narrative. By establishing the goodness of God, these words show why Christ is indeed utterly worthy to be praised and worshiped in the past, now and forever.

Thus, for just this time, God placed into Revelation 14 exactly the proper language which can directly speak to the fatal challenges to the gospel, to His character, and to the seventh-day Sabbath presented by the discovery of and the misinterpretation of the fossiliferous geologic column by a secular philosophy of science informed by Darwinian evolutionary principles. Without the historical fact of God's global flood, the devastating criticisms would indeed stand. There would be no gospel, no good God to worship, and no seventh-day Sabbath as a memorial of a six-day creation. In light of this conclusion, is it implying too much to suggest that if the global flood did not occur in actual history the Three Angel's Messages are of no value?

However, precisely when needed in earth's history, the surprise phrase, "springs of waters," acquires special significance to a Christian philosophy of science. By these words, God directs attention to the key for the proper interpretation of the formation of the geologic column, i.e., to His global flood which masterfully overturns, geologically, the fatal charges lodged by secular philosophy of science against the truths presented by the three messages in Revelation 14.

The implications indicated above show how the last line of the First Angel's Message can become so meaningful for personal Christian spiritual experience, for Christian Theology, and for a heaven-endorsed Seventh-day Adventist philosophy of science. The Lord is to be praised for embedding riches into the First Angel's Message.

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Footnotes

- 1.Cf., Alister E. McGrath, Science & Religion: An Introduction (Oxford: Blackwell Publishers Ltd, 1999), 57.
- 2.Quoted in Gerhard Maier, The End of the Historical Critical Method (St. Louis, MO: Concordia Pub. House, 1977); originally published in 1974. See J. S. Semler, "Abhandlung von freier Untersuchung des Canon," Texte zur Kirchen-und Theologiegeschichte 5 Guetersloh, 1967.
- 3.Paul Tillich, Systematic Theology, 3 vols. (Chicago: University of Chicago Press, 1951), 1:158-159.
- 4.Ibid., 125.
- 5.Rudolf Bultmann, Myth and Christianity: An Inquiry into the Possibility of Religion Without Myth, with Karl Jaspers, tr. Norbert Gutermann (New York: Noonday, 1958), 69.
- 6.Karl Barth, Church Dogmatics I/2, p. 525.
- 7.NASB translation of the Bible.
- 8.Francis A. Schaeffer, The Complete Works of Frances A. Schaeffer: A Christian Worldview, vol. 2, A Christian View of the Bible as Truth (Westchester, IL: Crossway Books, 1982), 140.
- 9.Ellen White, Testimonies to the Church vol. 8 (Mountain View, CA: Pacific Press Pub. Association, 1948), 325.
- 10.Ellen White, Education (Mountain View, CA: Pacific Press Pub. Association, 1903), 27.
- 11.Ibid.
- 12.Ellen White, Testimonies to the Church vol. 8, p. 258.
- 13.Ibid.
- 14.Clark Pinnock, "An Interactive Theory of the Relation between Science and Scripture," in Facets of Faith and Science vol 4 Interpreting God's Action in the World, ed. Jitse M. van der Meer (New York: University Press of America, Inc., 1996), 240-241.
- 15.Richard M. Davidson, "Biblical Evidence for the Universality of the Genesis Flood," in Creation, Catastrophe, and Calvary, ed. John T. Baldwin (Hagerstown, Review and Herald, 2000), 79-92.

16. Ellen G. White, Review and Herald, Dec. 15, 1885. Reprinted in Selected Messages vol. 1 (Washington, D.C.: Review and Herald Pub. Association, 1958), 416.
17. Aristotle, Physics Bk 2, ch. 3. in Richard McKeon, The Basic Works of Aristotle (New York: Random House, 1941), 240-241.
18. *Ibid.*, 240.
19. *Ibid.* 241.
20. Ellen G. White, The Great Controversy (Mountain View, CA: Pacific Press Pub. Association, 1911), xii.
21. Rick Overton, "Breakthrough: Cisco Rides the Microwave," Business 2.0 5:3 (March 2000): 98. Overton outlines a revolutionary development created by Greg Raleigh, a Stanford graduate. Raleigh's new smart chip solves the problem of reading "multipath distortion" from wireless signals bouncing off buildings and becoming weak, divided and distorted as they travel. Pau praises Raleigh by saying that "What Greg did is one of the few things that I would put in the revolutionary camp" (*Ibid.*).
22. Analyst Bob Metcalfe thinks that the high speed resulting from the new broadband rollout makes it possible for the Internet to be "always on." Here is his illuminating assessment of this possibility: "I think 'always on' is the killer application." See Rodes Fishburne and Michael Malone, "Voices of the Revolution: Laying Down the Laws: Gordon Moore and Bob Metcalfe in Conversation," Forbes ASAP (February 21, 2000): 100.
23. Cf., McGrath, Science & Religion, 57, 62-67.
24. Richard Goldschmidt, The Material Basis of Evolution (New Haven: Yale University Press, 1940), 397.
25. Stephen Toulmin, "The Historicization of Natural Science: Its Implications for Theology," in Paradigm Change in Theology ed. Hans Küng and David Tracy (New York: Crossroad, 1991), 236.
26. *Ibid.*, 237.
27. *Ibid.*
28. Jon Paulien, "Revisiting the Sabbath in the Book of Revelation," an unpublished paper presented at the Jerusalem Bible Conference, June 9-14, 1998.  
For information regarding biblical allusions, see Paulien's published doctoral dissertation: Jon Paulien, Decoding Revelation's Trumpets: Literary Allusions and the Interpretation of Revelation 8:7-12 Andrews University Seminary Doctoral Dissertation Series Vol. XI (Berrien Springs, Michigan: Andrews University Press, 1987).

29. Pauline, "Revisiting the Sabbath in the Book of Revelation," 10. Regarding the worship of the true God compare particularly the language of John 17:3, and secondly of Acts 4:12.

30. Ibid., 7-10. The thematic and structural parallels outlined by Paulien are not discussed in the present essay due to space constraints.

In this context it is helpful to notice that the Revelation 14:7c allusion to the fourth commandment mentioned in Exodus 20:11 is to be contrasted with the wording of the Sabbath commandment found in Deuteronomy 5:12-14. While Deuteronomy 5 mentions the Sabbath as the seventh day, it does not explicitly designate the time unit of which the Sabbath is the seventh day. This leaves the reader with the question whether the Sabbath is the seventh day of the lunar month, the seventh day of the year, or the seventh day of some other time unit? One needs to refer to Genesis 1 and 2, and to Exodus 20:11 in order to discover biblically that the Sabbath is the seventh day of the weekly time unit established at creation. In light of this consideration it is understandable why in Revelation 14:7c God intentionally focuses the attention of people upon the wording of the fourth commandment of the eternal covenant recorded in Exodus 20, rather than upon the Sabbath commandment mentioned in a deliverance setting in Deuteronomy 5.

31. As understood by the Seventh-day Adventist historicist interpretation of the First Angel's Message as becoming prophetically relevant in the nineteenth century as the profoundly important announcement to the world of the commencement in 1844 of the final phase of Christ's high priestly ministration in the heavenly sanctuary.

32. The author is indebted to Jon Paulien for linking the implication to the flood in Revelation 14:7c to the subsequent undoing of creation by another global catastrophe, but this time by fire.

33. Charles Coulston Gillispie, Genesis and Geology (New York: Harper & Row, 1959), 102-148

34. Sadly, while stating a belief in a six-day creation, some Seventh-day Adventists allow for an active gap between the time when the Spirit moved upon the face of the deep (Gen 1:2) and the first day of creation week (Gen 1:3). This active gap concept permits millions of years of animal development and death to be improperly inserted into Gen 1:2, thereby accommodating biblical history to evolutionary theory.

35. See Leonard Brand, Faith, Reason, and Earth History (Berrien Springs, MI: Andrews University Press, 1997).

36. William Lee Stokes and Sheldon Judson, Introduction to Geology: Physical and Historical (New Jersey: Prentice-Hall, Inc., 1968), p. 296. Elaine Kennedy drew my attention to this quotation.

37. The recent work by Davis A. Young is perhaps the most significant attempt by an evangelical geologist to show from a geological point of view that a biblical flood never occurred in real history as claimed by the Scriptures. See, Davis A. Young, The Biblical Flood: A Case Study of

the Church's Response to Extrabiblical Evidence (Grand Rapids, MI.; William B. Eerdmans, Pub. Company, 1995).

38.Langdon Gilkey, Maker of Heaven and Earth: A Study of the Christian Doctrine of creation (Garden City, N.Y.: Doubleday, 1959), 33.

39.Bertrand Russell, Religion and Science (New York: Oxford University Press, 1961), 73.

40.Gregory P. Elder, Chronic Vigour: Darwin, Anglicans, Catholics, and the Development of a Doctrine of Providential Evolution (New York: University Press of America, Inc., 1996), 183-184.

41. David Hull, "The God of Galapagos," Nature 352 (1991):486.

42.Dwight K. Nelson, Built to Last (Nampa, Idaho: Pacific Press Pub. Association, 1998), 65-67.

43.Philip Clayton, "Metaphysics Can Be a Harsh Mistress," CTNS Bulletin 18:1 (Winter 1998), p. 18.

## TOPICAL SELECTED BIBLIOGRAPHY

**General Theological Sources and the Philosophy of Science**

Barth, Karl. Church Dogmatics. Edinburgh: T. & T. Clark, 1975.

Bultmann, Rudolf. Myth and Christianity: An Inquiry into the Possibility of Religion Without Myth. New York: Noonday, 1958.

Maier, Gerhard. The End of the Historical Critical Method. St. Louis, MO: Concordia Pub. House, 1977.

Tillich, Paul. Systematic Theology, 3 vols. Chicago: University of Chicago Press, 1951.

**Selected Writings of Ellen G. White Relevant to a Philosophy of Science**

White, Ellen G. Education. Mountain View, CA: Pacific Press Pub. Association, 1903.

\_\_\_\_\_. The Great Controversy. Mountain View, CA: Pacific Press Pub. Association, 1911.

\_\_\_\_\_. Selected Messages, vol 1. Washington, D.C.: Review and Herald Pub. Association, 1958.

\_\_\_\_\_. Testimonies to the Church, vol. 8 Mountain View, CA: Pacific Press Pub. Association, 1948.

**General Articles on the Philosophy of Science**

Agassi, Joseph. "The Philosophy of Science Today." In Philosophy of Science, Logic and Mathematics in the Twentieth Century, ed. Stuart G. Shanker, 235-265. Routledge History of Philosophy, vol. IX. London: Routledge, 1996.

Butts, Robert E. "Science, 19th Century Philosophy of." Routledge Encyclopedia of Philosophy. London: Routledge, 1998.

Clayton, Philip. "Philosophy of Science: What One Needs to Know." Zygon 32 (1997): 95-104.

Danto, Arthur C. "Philosophy of Science, Problems of." The Encyclopedia of Philosophy. Edited by Paul Edwards. New York: Macmillan & Free Press, 1967.

- Durbin, Paul T. Dictionary of Concepts in the Philosophy of Science. New York: Greenwood Press, 1988. Each entry has a useful list of references and sources.
- Harré, R. "Philosophy of Science, History of." The Encyclopedia of Philosophy. Edited by Paul Edwards. New York: Macmillan & Free Press, 1967.
- Hatfield, Gary. "Scientific Method." Routledge Encyclopedia of Philosophy. London: Routledge, 1998.
- Reese, William L. Dictionary of Philosophy and Religion: Eastern and Western Thought. Atlantic Highlands, N.J.: Humanities Press, 1996, s.v. "Philosophy of Science."
- Sklar, Lawrence. "Philosophy of Science." The Cambridge Dictionary of Philosophy. Edited by Robert Audi. Cambridge: Cambridge University Press, 1995.
- Worrall, John. "Science, Philosophy of." Routledge Encyclopedia of Philosophy. London: Routledge, 1998.

### **The Historical Context of Scientific Development**

- Butterfield, Herbert. The Origins of Modern Science 1300-1800. New York: Macmillan, 1962. A classical historical exposition on the background of modern science.
- Dillenberger, John. Protestant Thought and Natural Science: A Historical Interpretation. Notre Dame, IN: University of Notre Dame Press, 1960.
- Klaaren, Eugen M. Religious Origin of Modern Science: Belief in the Creation in Seventeenth-Century Thought. Grand Rapids, William B. Eerdmans, 1977.
- Russell, C. A., ed. Science and Religious Belief: A Selection of Recent Historical Studies. London: University of London Press, 1973.

### **Science and Philosophy of Science from non-Christian Perspective**

- Brisson, Luc and F. Walter Meyerstein. Inventing the Universe: Plato's Timaeus, The Big Bang, and the Problem of Scientific Knowledge. Albany, N.Y.: State University of New York Press, 1995. Addresses questions about the scientific knowledge and the type of knowledge conveyed by science.
- Feyerabend, Paul. Against Method. London: Verso, 1993. An anarchistic philosophy of science: there is no philosophy of science.

- Gross, Paul, Norman Levitt, and Martin W. Lewis, eds. The Flight From Science and Reason. New York: The New York Academy of Sciences, 1996. Four essays in the section on religion.
- Harré, Rom. The Philosophies of Science: An Introductory Survey. London: Oxford University Press, 1972. Harré denies the acknowledged Christian basis of science.
- Horgan, John. The End of Science: Facing the Limits of Knowledge in the Twilight of the Scientific Age. Reading, MA: Addison-Wesley, 1996.
- Hull, David L. "A Revolutionary Philosopher of Science." Nature (382) 1996: 203-204.
- Kitcher, Philip. The Advancement of Science: Science without Legend, Objectivity without Illusions. New York: Oxford University Press, 1995.
- Knowles, Dudley, ed. Explanation and Its Limits. Royal Institute of Philosophy Lectures Series 27. Cambridge: Cambridge University Press, 1990.
- Kuhn, Thomas S. The Structure of Scientific Revolutions. Chicago, University of Chicago Press, 1975. The theory of paradigm changes in science.
- Lakatos, Imre and Alan Musgrave, eds. Criticism and the Growth of Knowledge. Cambridge: University Press, 1970. Debate between Kuhn and Popper.
- Medawar, Peter. The Limits of Science. Oxford: Oxford University Press, 1984.
- Newton-Smith, W. H. The Rationality of Science. Boston, MA: Routledge & Kegan Paul, 1981. Criticism of Popper, Kuhn, Feyerabend and Lakatos. He defends a realist view of science.
- Papineau, David, ed. The Philosophy of Science. New York: Oxford University Press, 1996.
- Popper, Karl. R. Conjectures and Refutations: The Growth of Scientific Knowledge. New York: Basic Books, 1965.
- \_\_\_\_\_. Objective Knowledge: An Evolutionary Approach. Oxford: Clarendon Press, 1972.
- Silver, Brian L. The Ascent of Science. Oxford: Oxford University Press, 1998.
- Sorell, Tom. Scientism: Philosophy and the Infatuation with Science. London: Routledge, 1991.

- Sproul, R. C. Not a Chance: The Myth of Chance in Modern Science and Cosmology. Grand Rapids, MI: Baker Books, 1994. Sproul sustains that chance should have no place in scientific explanation.
- Toulmin, Stephen. "The Historicization of Natural Science: Its Implications for Theology." In Paradigm Change in Theology: A Symposium for the Future, ed. Hans Küng and David Tracy, 233-241. New York: Crossroad, 1991.
- \_\_\_\_\_. The Philosophy of Science: An Introduction. New York: Harper & Row, 1960.
- Trigg, Roger. Rationality and Science: Can Science Explain Everything? Oxford: Blackwell, 1993.
- Weyl, Hermann. The Open World: Three Lectures on the Metaphysical Implications of Science. Woodbridge, CN: Ox Bow Press, 1989.

#### **Science and Philosophy of Science from a Christian Perspective**

- Barbour, Ian G. Religion in an Age of Science. The Gifford Lectures, 1989-1991, vol. 1. New York: Harper & Row, 1990.
- Clark, Gordon H. The Philosophy of Science and Belief in God. University Series -- Philosophical Studies. Nutley, NJ: The Craig Press, 1964. A conservative work.
- Clark, James Patton. "Fact, Faith and Philosophy: One Step Toward Understanding the Conflict Between Science and Christianity." Perspectives on Science and Christian Faith 46 (1994): 242-252.
- Clouser, Roy A. The Myth of Religious Neutrality: An Essay on the Hidden Role of Religious Belief in Theories. Notre Dame, IN: University of Notre Dame Press, 1991. A powerful exposé of the myth of neutrality. It shows how a distinctive biblical perspective for theorizing can work.
- Collingwood, R. G. The Idea of Nature. New York: Oxford University Press, 1960. A conservative approach.
- Duce, Philip. Reading the Mind of God: Interpretation in Science and Theology. Leicester: Apollos, 1998.
- Faith and Science in an Unjust World: Report of the World Council of Churches' Conference on Faith. Science and the Future, 2 vols. Philadelphia: Fortress Press, 1980.

- Foster, M. B. "The Christian Doctrine of Creation and the Rise of Modern Natural Science." Mind 43 (1934): 446-468.
- Fretheim Terence E. and Karlfried Froehlich. The Bible As Word of God In a Postmodern Age. Minneapolis: Fortress Press, 1998.
- Giberson, Karl. "Jerusalem and the National Academy of Science: Is There a Christian Philosophy of Science?" Christian Scholar's Review 23 1993: 194-202.
- Gierer, Alfred. "Gödel Meets Carnap: A Prototypical Discourse on Science and Religion." Zygon 32 (1997): 207-217.
- Gilkey, Langdon. Religion and Scientific Future: Reflections on Myth, Science, and Theology. New York: Harper & Row, 1970. A liberal Christian viewpoint.
- \_\_\_\_\_. Maker of Heaven and Earth: A Study of the Christian Doctrine of Creation. Garden City, N.Y.: Doubleday, 1959.
- Gillispie, Charles Coulston. Genesis and Geology. New York: Harper & Row, 1959.
- Gunton, Colin E. ed., The Doctrine of Creation: Essays in Dogmatics, History and Philosophy. Edinburgh, T. & T. Clark, 1997.
- Harrison, Peter. The Bible, Protestantism, and the Rise of Natural Science. Cambridge, Cambridge University Press, 1998.
- Jaki, Stanley L. Chance or Reality and Other Essays. Lanham, MD: University Press of America, 1986.
- McKeon, Richard. The Basic Works of Aristotle. New York: Random House, 1941.
- McMullin, Ernan. "Galileo on Science and Scripture." In The Cambridge Companion to Galileo, ed. Peter Machamer, 271-347. Cambridge: Cambridge University Press, 1998.
- Mooney, Christopher F., S.J. "Theology and Science: A New Commitment to Dialogue." Theological Studies 52 (1991): 289-329.
- Moreland, J. P. Christianity and the Nature of Science. Grand Rapids, MI: Baker Book House, 1989. Moreland shows that science has no method or definition and develops an eclectic approach to the realism/antirealism debate.
- Ostovich, Steven T. Reason in History: Theology and Science as Community Activities. American Academy of Religion Academy Series no.71 Atlanta, GA: Scholars Press, 1990.

Pannenberg, Wolfhart. Theology and the Philosophy of Science. London: Darton, Longman & Todd, 1976. A liberal Christian viewpoint.

Physics, Philosophy, and Theology: A Common Quest for Understanding. Vatican City: Vatican Observatory, 1995.

Popkin, Richard H. "Newton's Biblical Theology and His Theological Physics." In Newton's Scientific and Philosophical Legacy, ed. P. B. Scheurer and G. Debrock, 81-97. International Archives of the History of Ideas no.123. Dordrecht: Kluwer Academic Publishers, 1988.

Ratzsch, Del. Philosophy of Science: The Natural Sciences in Christian Perspective. Downers Grove, IL: InterVarsity Press, 1986. Gives an initial understanding of natural sciences from a Christian approach.

Reisz, H. Frederick, Jr. "Knowing the Word and the World?" World & World 13 (1993): 263-268.

St. Augustine. The Literal Meaning of Genesis. Ancient Christian Writers, No. 41. New York: Newman Press, 1982.

Snoke, David W. "Toward a Unified View of Science and Theology." Perspectives on Science and Christian Faith 43 (1991): 166-173.

Torrance, Thomas F. Christian Theology and Scientific Culture. New York: Oxford University Press, 1981.

\_\_\_\_\_. Reality and Scientific Theology. Theology and Science at the Frontiers of Knowledge no. 1 Edinburgh: Scottish Academic Press, 1985.

Trefil, James. Reading the Mind of God: In Search of the Principle of Universality. New York: Charles Scribner's Sons, 1989.

Wilcox, David. "Covenantal Science: Impossible or Required?" Christian Scholar's Review 22 (1993): 367-379.

\_\_\_\_\_. "Athens and the National Academy of Sciences: Is There No Christian Philosophy of Science?" Christian Scholar's Review 23 (1993): 203-207.

Wright, John H. "Theology, Philosophy, and the Natural Sciences." Theological Studies 52 (1991): 651-668. A thesis on how to relate science and religion. Wright affirms that theology and science give meaning to each other.

### Scientific and Popular Works on Science and Religion

- Barnes, Thomas G. Science and Biblical Faith: A Science Documentary. El Paso, TX: Thomas G. Barnes, 1993. Figures of scientists from the past and present showed faith in God and the Bible.
- Barrow, John D. The World within the World. Oxford: Oxford University Press, 1990. Describes the different views of science.
- Berry, R. J., ed. Real Science, Real Faith. Eastbourne : Monarch, 1991. A number of Christian scientists explain how science and their faith cohere.
- Bessinger, Donivan. Religion Confronting Science: And There Was Light. Greenville, SC: Orchard Park Press, 1991.
- Blocher, Henri. In The Beginning: The Opening Chapters of Genesis. Downers-Grove, IL: Inter-Varsity Press, 1984.
- Brand, Leonard. Faith, Reason, and Earth History. Berrien Springs, MI: Andrews University Press, 1997.
- Brümmer, Vincent. Interpreting the Universe as Creation: A Dialogue of Science and Religion. Kampen: Kok Pharos Publishing House, 1991.
- Clayton, Philip. Explanation from Physics to Theology: An Essay in Rationality and Religion. New Haven: Yale University Press, 1989.
- \_\_\_\_\_. God and Contemporary Science. Edinburgh Studies in Constructive Theology. Grand Rapids, MI: William B. Eerdmans, 1997.
- Davidson, Richard M. "Biblical Evidence for the Universality of the Genesis Flood." In Creation, Catastrophe, and Calvary, ed. John T. Baldwin, 79-92. Hagerstown, Review and Herald, 2000.
- Easterbrook, Gregg. "Science and God: A Warming Trend?" Science 277 (1997): 890-893.
- Elder, Gregory P. Chronic Vigour: Darwin, Anglicans, Catholics, and the Development of a Doctrine of Providential Evolution. New York: University Press of America, Inc., 1996.
- Fennema, Jan, and Iain Paul, eds. Science and Religion: One World -- Changing Perspectives on Reality. Papers presented at the Second European Conference on Science and Religion, March 10-13, 1988. Dordrecht: Kluwer Academic Publishers, 1990.

- Ferré, Frederick. Hellfire and Lightning Rods: Liberating Science, Technology, and Religion. Maryknoll, N.Y.: Orbis Books, 1993. Deals with the issue of explanation in science and theology.
- Fischer, Robert. B. God Did It, But How? Ipswich, MA: American Scientific Affiliation, 1997.
- Frame, John M. The Doctrine of the Knowledge of God. Phillipsburg, N.J.: Presbyterian and Reformed Publishing Company, 1987.
- Giem, Paul A. L. Scientific Theology. Riverside, CA: La Sierra University Press, 1997.
- Gilbert, James. "Burhoe and Shapley: A Complementarity of Science and Religion." Zygon 30 (1995): 531-539.
- Goldschmidt, Richard. The Material Basis of Evolution. New Haven: Yale University Press, 1940.
- Griffin, David Ray and Huston Smith. Primordial Truth and Postmodern Theology. Albany, N.Y.: State University of New York Press, 1989.
- Helm, Paul. "Is There a Preferred Philosophy of Science for Christians?" Science & Christian Belief 2 (1990): 3-14.
- Horrobin, David F. Science is God. Chiltern House, Aylesbury: MTP, 1969.
- Laudan, Larry. Science and Values: The Aims of Science and Their Role in Scientific Debate. Berkeley, CA: University of California Press, 1984. A book about the role of cognitive values in the shaping of scientific rationality.
- Liben, Paul H. "Science Within the Limits of Truth." Perspectives on Science and Christian Faith 44 1992: 163-168.
- Maatman, Russell. The Unity in Creation. Sioux Center, IA: Dordt College Press, 1978.
- Mandelbaum, Maurice. Philosophy, History, and the Sciences. Baltimore: The Johns Hopkins University Press, 1984.
- Margenau, Henry. Cosmos, Bios, Theos: Scientists Reflect on Science, God, and the Origins of the Universe, Life, and Homo Sapiens. La Salle, IL: Open Court, 1992. Contains the answers of 60 scientists on six key questions, including the relationship between science and religion, and their view of God.

- McGrath, Alister E. Science & Religion: An Introduction. Oxford: Blackwell Publishers Ltd, 1999.
- Midgley, Mary. Science as Salvation: A Modern Myth and Its Meaning. London: Routledge, 1992.
- \_\_\_\_\_. "Strange Contest: Science Versus Religion." In The Gospel and Contemporary Culture, ed. Hugh Montefiore, 40-57. London: Mowbray, 1992.
- Morrison, J. H. Christian Faith and the Science of Today. Nashville, TN: Cokesbury Press, [1938].
- Nelson, Dwight K. Built to Last. Nampa, Idaho: Pacific Press Pub. Association, 1998.
- Noll, Mark A. The Scandal of the Evangelical Mind. Grand Rapids, MI: William B. Eerdmans, 1994.
- Numbers, Ronald L. The Creationists. New York: Alfred A. Knopf, 1992.
- O'Connor, Robert. "Criteria of Success in Science and Theology." Science and Christian Belief 10 (1998): 21-40.
- Pinnock, Clark. "An Interactive Theory of the Relation between Science and Scripture." In Facets of Faith and Science. Vol. 4, Interpreting God's Action in the World, ed. Jitse M. van der Meer, 233-244. Ancaster: The Pascal Centre for Advanced Studies in Faith and Science, 1996.
- Polkinghorne, John. Beyond Science: The Wider Human Context. Cambridge: Cambridge University Press, 1996. The book has chapters on the origin, sense and future of life and world.
- Rice, Richard. Reason and the Contours of Faith. Riverside, CA: La Sierra University Press, 1991.
- Rolston, Holmes, III. Science and Religion: A Critical Survey. Philadelphia: Temple University Press, 1987. Chapters on modern physics, biology and psychology.
- Russell, Bertrand. Religion and Science. New York: Oxford University Press, 1961.
- Schaeffer, Francis A. The Complete Works of Francis A. Schaeffer: A Christian Worldview. Vol. 2, A Christian View of the Bible As Truth. Westchester, IL: Crossway Books, 1982.

- Sheldrake, Rupert. The Presence of the Past: Morphic Resonance and the Habits of Nature. New York: Times Books, 1988.
- Snoke, David W. "Toward a Unified View of Science and Theology." Perspectives on Science and Christian Faith 43 (1991): 166-173.
- Stanesby, Derek. Science, Reason & Religion. London: Routledge, 1988.
- Stannard, Russell. Science and Wonders. London: Faber and Faber, 1996.
- Stoner, Don. A New Look at an Old Earth: What the Creation Institutes Are Not Telling You About Genesis. Paramount, CA: Schroeder Publishing, 1992.
- Taylor, John. "Science, Christianity and the Post-Modern Agenda." Science & Christian Faith 10 (1998): 163-178.
- Vanderkooi, Garret. "A Theistic Approach to Science." In Evidence for Faith: Deciding the God Question, ed. John Marwick, 41-60. Montgomery Dallas: Word Publishing, 1991.
- Watts, Fraser, ed. Science Meets Faith. London: SPCK, 1998.

#### **New Books on Science, Religion and Philosophy of Science (1999-2000)**

- Azzouni, Jody. Knowledge and Reference in Empirical Science. London: Routledge, 2000.
- Chalmers, A. F. What Is This Thing Called Science? Indianapolis, IN: Hackett, 1999. A valuable introduction to the philosophy of science.
- Evangelicals and Science in Historical Perspective. New York: Oxford University Press, 1999.
- Gibson, Roland. The Disappearance of God and Science. Lewes: Book Guild, 1999.
- Hanzel, Igor. The Concept of Scientific Law in the Philosophy of Science and Epistemology: A Study of Theoretical Reason. Dordrecht: Kluwer Academic, 1999.
- Klee, Robert. Scientific Inquiry: Readings in the Philosophy of Science. New York: Oxford University Press, 1999.
- Kockelmans, Joseph J. Philosophy of Science: The Historical Background. New Brunswick, NJ: Transaction Publishers, 1999.
- Krausz, Ernest. The Limits of Science. New York: Peter Lang, 2000.

- Kukla, André. Social Constructivism and the Philosophy of Science. New York: Routledge, 2000
- McErlean, Jennifer. Philosophies of Science: From Foundations to Contemporary Issues. Belmont, CA: Wadsworth, 2000.
- Moreland, J. P. Christianity & the Nature of Science; A Philosophical Investigation. Ada: Baker Books, 1999.
- Newton-Smith, W. H. A Companion to the Philosophy of Science. Oxford: Blackwell, 1999.
- Niiniluoto, Ilkka. Critical Scientific Realism. Oxford: Clarendon, 1999.
- Norris, Cristopher. Minding the Gap: Epistemology and Philosophy of Science in the Two Traditions. Amherst: University of Massachusetts Press, 2000.
- Oldroyd, David Roger. The Arch of Knowledge: An Introductory Study of the History of the Philosophy & Methodology of Science. Sydney: University of New So. Wales Press, 1999.
- Philosophy of Science: A Collection of Essays. 6 vols. New York: Garland, 1999.
- The Proper Ambition of Science. New York, Routledge, 2000.
- Rescher, Nicholas. The Limits of Science. Pittsburgh, PA: University of Pittsburgh Press, 1999.
- Salmon, Merrilee, ed. Introduction to the Philosophy of Science. Indianapolis: Hackett Publishing, 1999.
- Schick, Theodore. Readings in the Philosophy of Science: From Positivism to Postmodernism. Mountain View, CA: Mayfield, 1999.
- Sklar, Lawrence. Theory and Truth: Philosophical Critique Within Foundational Science. Oxford, Clarendon, 2000.
- Ziman, J. M. Real Science: What It Is, and What It Means. New York: Cambridge University Press, 2000.