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SPECTRUM

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of adventist forums

SPECTRUM is a journal established to encourage Seventh-day Adventist participation in the discussion of contemporary issues from a Christian viewpoint, to look without prejudice at all sides of a subject, to evaluate the merits of diverse views, and to foster Christian intellectual and cultural growth. Although effort is made to ensure accurate scholarship and discriminating judgment, the statements of fact are the responsibility of contributors, and the views individual authors express are not necessarily those of the editorial staff as a whole or as individuals.

SPECTRUM

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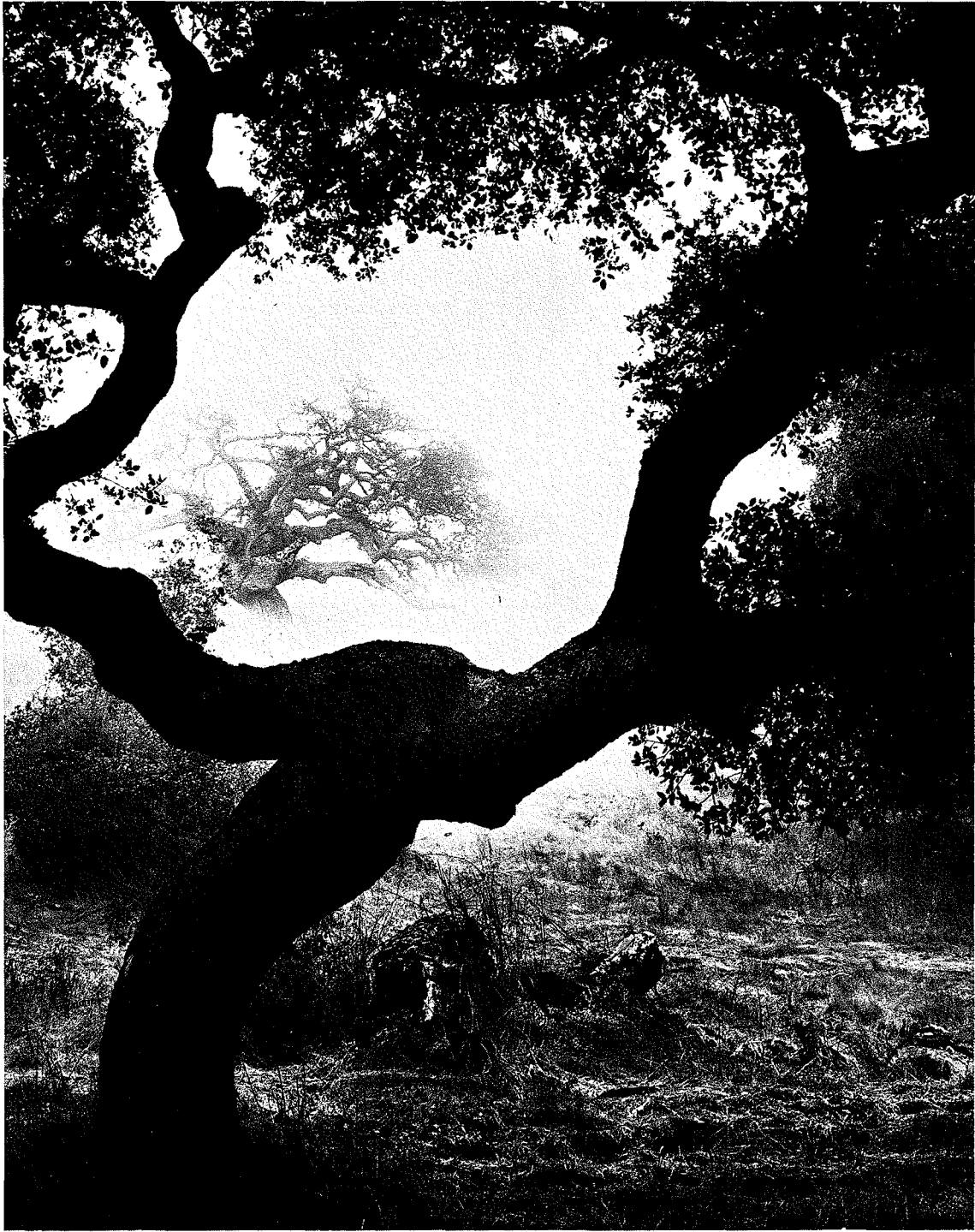
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CHARLES K. DAVENPORT

Science and Theology

MOLLEURUS COUPERUS

5

Recently the scientific community and a large segment of the public have been confronted again with the pros and cons of evolution and creation. This was occasioned by a controversy that started in 1969 over certain inclusions or omissions in the presentation of explanatory matter on origins in California elementary school science textbooks. The California discussion, which became especially active in 1972, was followed later by similar conflicts in several other states.

A number of the speakers at the meetings of the California State Board of Education, and some of the commentators, compared this controversy to the Scopes trial on evolution in Tennessee in 1925. There was one great difference, however, between the 1972 discussion in Sacramento and the Scopes trial in Dayton, Tennessee — and this was the presence in California of trained scientists who supported the creationists' position. In the Tennessee trial there were no scientists supporting William Jennings Bryan's defense of creation, whereas Clarence Darrow had several internationally known scientists aiding him in the vindication of evolution. Bryan, of course, was neither a scientist nor a trained theologian, but a politician.

This difference of open public support of creation by several scientists in 1972 no doubt resulted, to a large extent, from the founding after 1925 of a number of organizations of scientists who were also professed Christians. They studied, discussed, and wrote about the conflicts between science and religion, and particularly between evolution and creation. There had been such organizations before the Scopes trial: the Victoria Institute in England (founded in 1872), the Christian Society of Natural Scientists and Physicians in the Netherlands (1902), and the Keplerbund in Germany (1907), which is said to have had some 8,000 members in 1920 and which was dissolved by Hitler in 1941. All of these organizations published journals and (in some cases) books.

Also since 1925, the American Scientific Affiliation was founded (at present it has over 2,200 members); the Inter-Varsity Fellowship, with a special section called the Research Scientists' Christian Fellowship; the Creation Research Society; the Bible-Science Association; and the Creation Science Research Center. The Adventist church joined this movement of inquiry into the science-creation relationship through the establishment of the Geoscience Research Institute (1958). (All these organizations and centers have their own journals or papers, also.) Besides these, a number of smaller societies were formed, most of which are no longer active.

Through their regional and annual meetings and their periodicals, these societies encouraged investigations and discussions, and slowly the weaknesses in their own understanding and convictions (as well as in some of the claims of materialistic evolutionists) became evident. With awareness came greater freedom to state their views within the scientific community in regard to creation and evolution. Also, it became clearer that the views of these groups, and of individual members within each group, were far from uniform. This difference in perspective resulted in the formation of the Creation Research Society by former members of the American Scientific Affiliation, because the organizers of the new society insisted on one specific literal interpretation of the scriptural statement of creation.

At the 1972 meeting in Sacramento it became clear that at least one of the factors contributing to the tension between creationists and evolutionists was the failure to have had adequate dialogue earlier. This lack in turn prevented the formulation of a careful definition of the basic issues that separated them and likewise obscured recognition of the great variety of viewpoints present in each group, especially among the creationists. It is interesting that some of the evolutionists who contributed to the discussion before the Board of Education claimed to believe in some form of creation. In this connection it is worth noting that in 1951 Walter H. Belda said in the *Quarterly Review of Biology* (26:40):

It might be maintained that biology should be taught without religious implications. However, to assume the activity of a Creator is no more out of place in a textbook of biology than to defend a mechanistic interpretation of the origin of life, since biology as such offers evidence neither for nor against creation.

One may enthusiastically agree with Belda and still differ with him on his last statement — as I do, believing that the living world and the universe do indeed offer evidence for the existence of a Creator.

What should be the position of an Adventist scientist in such discussion? To some it may seem somewhat surprising that the answers by Adventist scientists will not always be the same — since besides being scientists, they are also indi-

vidual personalities with individual opinions, understandings, and beliefs, not to mention prejudices. I presume that the same could be said of Adventist theologians. The statements I will make, therefore, are my own and partake of the above limitations.

First, and perhaps self-evident, the scientist who is a Christian must know as clearly as he can the reasons for the beliefs he holds on creation, and he should have a thorough grasp, as well, of today's theory of evolution if he is going to participate in the current dialogue.

Second, he should ask himself regarding any point of controversy, "Is this point really valid? If it is, is it also important?" This self-questioning applies to details of the evolutionist's position as well as to the creationist's position. It is surprising how a problem sometimes loses much of its significance when one asks the question, "So what?"

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Third, the Adventist scientist, as much as anyone, and perhaps even more, must bring all kinds of evidence to bear on any problem he deals with, both in his theology and in science. Here one's concept of truth is basic. If I believe that truth is consistent with all other truth, then I must test my view of a detail of creation theory by all available facts and lines of evidence. If these do not harmonize with my beliefs, then further study and research are needed. If after more investigation my position still proves incompatible with other evidence, then I must have the fortitude to modify it, no matter how much I may have cherished that position. Doing this is not easy for most individuals. Usually it takes considerable time, especially if one has held a particular view for many years before it becomes evident that the view lacks validity.

Truth is never debased or threatened by being compared or checked with other truths. If it is really valid, it is only made clearer and stronger. The history of the Christian church (as well as the history of science) shows how often we have held on tenaciously to beliefs even when the accumulating evidence against them was clear. Such manifest bias has been described by Andrew White as resulting in a state of warfare between science and theology. For many Christians it is uncomfortable to admit that this warfare has developed. It is even more difficult to realize that the war is still going on — and that we may be involved in it personally unless we are willing to check our beliefs against the totality of evidence.

Truth has nothing to fear from close investigation and comparison, be it a church dogma, a personal belief, or a scientific hypothesis or theory that is involved. Such self-criticism has certainly taken place among the proponents of evolution ever since the days of Darwin. There has also been a continual discussion and evaluation of the doctrines of creation within the Christian community, including the Adventist church. And is it not one of the hallmarks of being human

and alive, created in the image of God, that one thinks and weighs evidence, as Augustine has pointed out so beautifully in his *Confessions*?

It seems to me particularly important, even essential, that in all biblical interpretation and Christian doctrine we recognize and accept as basic the principle that such interpretation and doctrine must not be incompatible with any facts known by man, and that any kind of evidence, from even the most critical scholarship that might be brought to bear on any position we hold, must be welcome. If one rejects this fundamental right of all areas of human research to be heard with utmost respect on any theological position where their findings are applicable, then such rejection by the theologian or the lay Christian will make further dialogue almost meaningless. Such denial of existing evidence may well aid in the alienation of still more members of the world of scholarship from possible interaction with those who claim inspiration for Scripture, and from receiving the real message of those Scriptures. If biblical interpretation is to become as meaningful as it should, it must be attentive to all the facts available to modern man.

8

When I state that I believe Scripture teaches that our earth may be only six to eight thousand years old, immediately I put that statement in a category where it is exposed to evidence from other disciplines that point to an earth and the life upon it as much older, and I must expect critical reaction to my position by these disciplines. If I believe that my view of the earth's age is indeed correct, I should not be afraid to expose it to other evidence, since truth is holistic, in harmony with all other truth. If I shrink away from this principle, I am denying the unity of truth, of God's creation and its order. The universe then becomes irrational, God stands in jeopardy of being accused of deception, and the very foundation of belief and trust in him begins to disappear.

There are times when the data available on all aspects of a problem are insufficient to make an honest, intelligent choice between what the options appear to be, and I may have to suspend my judgment at that point and say, "I do not know." But I must not let my temporary inability to produce a harmonization of the facts, as I know them, become an excuse so that I avoid making an honest decision when further evidence becomes available. Time and further research may help me solve the problem.

To be able to live comfortably with such a situation and still continue to search for truth, I must be fully convinced that all truth is ultimately in unity, not contradictory in any of its aspects. I am not threatened, then, by new and perhaps unexpected facts, by differences of opinion, or by the appearance of seeming contradictions, since real contradictions do not exist. New facts and valid syntheses will always be welcomed — because they continually enlarge our understanding of the universe in which we live and of the God who made it.

If the harmony of all truth had been accepted as a guiding principle in the discussions between science and religion when the tensions between them began to develop, most of the heat, bitterness, and frustration that resulted would have been avoided. Working together toward the attainment of more and more understanding of all truth, theologians and scientists would have corrected and stimulated each other far more than has been the case generally. From a historical standpoint, I must say that dogmatic theology seems to have been more at fault in preventing this walking together in a common search than has dogmatic science — since by its very nature science has tended to become insatiably inquiring and investigative. Or perhaps the time was not yet ripe for such cooperation and understanding, and man needed more time to grow.

9

But certainly the day has now come for such a working together to obtain as clear a picture as possible of the truth about things as they are and of the God who is. One can hope that those who participate in the discussion of the conflicts that seem to exist between religion and science will base their approach to the problems on the concept of harmony and unity of all truth. If this occurs, it will indeed be a new day in the long warfare between science and theology.

Christian Commitment and Intellectual Achievement

FREDERICK E. J. HARDER

10

I

There are those who regard the expression Christian scholarship a contradiction in terms. If he is truly Christian, they argue, the scholar is more concerned with his religious commitment than with intellectual achievement. They conclude that such a commitment makes free inquiry impossible. Therefore, a dedicated Christian cannot be a scholar, and a scholar cannot be a practicing Christian.

This attitude is found within the church as well as without the church; for even in this age of unprecedented knowledge, some view with alarm any suggestion that the discovery of new truth is a legitimate function of a Seventh-day Adventist college or university. They demand that church-related institutions transmit the known, but they distrust research into the unknown. They insist on affirmation, but they shrink from inquiry. They are devotees of truth, but only to the extent that it requires no adjustment in belief.

The fear that there exists a fundamental disharmony between faith and knowledge, religion and education, piety and intelligence, Christian commitment and scholarly achievement, is not a new one. Atheists and skeptics always have suggested that faith is most compatible with gullibility, religion most at home with ignorance, piety most congenial with stupidity, and Christian commitment most fervid among the intellectually sterile.

Throughout the histories of Catholicism and Protestantism there have been voices and, often, prevailing attitudes in full agreement! Of course, usually they used a more sanctimonious vocabulary to express it. Frequently they made vague references to the need to become like children. Other times they gave out pious re-

minders that God reveals himself best unto babes, connecting this with pompous pronouncements about the foolishness of preaching, and the like. But whatever the language used to express it, the attitude represents the oldest heresy of mankind. It was proclaimed first from the Tree of Knowledge by the father of lies when he insinuated that God prefers to keep his creatures ignorant.

The fear of learning is not aroused as long as the learning is confined to the transmission of the adult culture and values to the young of any particular society or subgroup. When education moves beyond indoctrination, however, and becomes involved in the discovery of new knowledge, the fright whistles start blowing. The reason for this is inherent in the nature of the situation. People fear that new knowledge may undermine the indoctrination.

The context of a doctrinally oriented organization includes several conditions that encourage such fear. The first condition is the acceptance of a statement, or set of statements, as being synonymous with "truth" or "the truth." The second condition is the extension of church membership to a person upon his affirmation of all these propositions and the withdrawal of it upon his denial of any. The third condition is evident when a church regards its mission and, hence, its reason for existence, the perpetuation and proclamation of this particular set of propositions.

These conditions describe a creedal church or sect. The more detailed the creed, the greater the fear that additional discovery may cast doubt on some portion of it. Such a church is actually declaring, "We do not need the spirit of truth to guide us into all truth. We already have the whole truth." But throughout the history of the church, creeds have proved to be dismally poor substitutes for the Holy Spirit!

The founders of the Seventh-day Adventist church were very conscious of this. Many of them had been disfellowshipped by churches in which the creeds were so rigid that there was no latitude for the discernment of new truths. Thus these founders, fearing creeds as inhibitors of freedom and as obstacles to divine guidance, resolutely refused to adopt a creed for their new church.

John N. Loughborough regarded a creed as the road to apostasy.¹ James White held that a creed is in direct opposition to the gifts of the Spirit.² Ellen White wrote:

The Bible, and the Bible alone, is to be our creed, the sole bond of union.³

As men's minds become narrow, they think they know all, when they have only a glimpse of truth. They close their minds, as if there were no more for them to learn; and should the Lord attempt to lead them on, they would not accept the increased light. They cling to the spot where they see light, when that which they see is only a glimmer of the bright beams they might enjoy. They know very little of what it means to follow in the footsteps of Christ.⁴

Have we perpetuated sufficiently this fear of crystallizing into formal statements what we refer to as “the truth”? Attempts to officialize in increasing detail doctrinal statements and church standards frequently get enthusiastic support. Sometimes in Adventist councils — even in educational councils — the most impassioned speeches are those that call for the codifying of church teachings, principles, and standards so that “people will know what they believe”! We are assured that not only the young people but also the older members need to be told with authority what they can believe, what they ought to wear, where they may go, what they should or should not read or watch, what they may eat, etc. — and that it is high time we tell them straight and stop pussyfooting around with guidelines and basic principles!

The enthusiastic “amen” chorus to which such a speaker usually sits down is alarming evidence that the Judaizers might fare much better at some Adventist councils than they did at the council of Jerusalem. Just how much have we learned from the tragic experiences of the church through the ages with Pharisees and papists? Creedmakers among us are busy, and they are getting a hearing!

II

The New Testament concept of truth bears little resemblance to the way creed artists picture it. Our Lord declared, “I am the way, and the truth, and the life” (John 14:6).⁵ He associated truth with “the way,” which suggests movement, progression; and with “life,” which is the very antithesis of everything static and unchanging. Most startling of all, he identified truth with himself — the God-man. What concept could possibly be more dynamic than that?

When Jesus drew the ultimate contrast, it was in terms of truth and not-truth: “You seek to kill me, a man who has told you the truth. . . . You are of your father the devil. . . . He . . . has nothing to do with the truth, because there is no truth in him” (John 8:40, 44). When he spoke of being freed from the clutches of sin, he said, “You will know the truth, and the truth will make you free” (John 8:32). When he prayed that the Father should complete the work of renewal, he petitioned, “Sanctify them in the truth; thy word is truth. . . . For their sake I consecrate myself, that they also may be consecrated in truth” (John 17:17, 19). Then as if to guarantee forever the dynamic, ever-unfolding nature of truth, he promised before leaving, “When the Spirit of truth comes, he will guide you into all the truth” (John 16:13).

Both as a moral and as an intellectual quality, truth is the very essence of the Christian’s spiritual being. According to the foremost evangelist of all Christendom, it is also the power of the Christian witness. Concerning his evangelism, Paul wrote, “We have renounced disgraceful, underhanded ways; we refuse to

practice cunning or to tamper with God's word, but *by the open statement of the truth we would commend ourselves to every man's conscience* in the sight of God" (2 Corinthians 4:2). Truth is not only the *content*, but also the *method*, of living discipleship.

Commitment to any concept of truth short of this is unworthy of a Christian, and it is untenable for a church that is led by the Spirit bestowed to guide us into all truth. On the other hand, a commitment to guidance by the Spirit of truth will result in a mind-subduing awe at the wondrous unfolding of infinite knowledge. It will remove the fear of discovery. Ellen White had such a commitment, and she insisted on, rather than feared, continuing discovery. She wrote:

The more closely connected man is with the source of all knowledge and wisdom, the more he will feel that he must advance in intellectual and spiritual attainments. . . . Truth is eternal, and conflict with error will only make manifest its strength. . . . If the pillars of our faith will not stand the test of investigation, it is time that we knew it.⁶

Faith in a lie will not have a sanctifying influence upon the life or character. No error is truth, or can be made truth by repetition, or by faith in it. Sincerity will never save a soul from the consequences of believing an error. . . . The Lord does not want us to have a blind credulity, and call that the faith that sanctifies. The truth is the principle that sanctifies, and therefore it becomes us to know what is truth.⁷

Because man is finite and truth is infinite, any particular statement or system of truth must by its very nature be only partial. This assures the obsolescence of any creed that could be devised. Why can we not have a complete dedication to truth as such, to its continuing discovery, and to its practice and propagation as it becomes known? In such a commitment, tenets of faith or doctrinal formulations serve as progress reports in our eternal quest. Was this not precisely the situation at the founding of the church by Jesus? He made no pretense at having revealed a complete creed. Instead, he said:

I have yet many things to say to you,	(Infinitude of truth)
but you cannot bear them now.	(Finitude of man)
When the Spirit of truth comes,	
he will guide you into all the truth.	(Eternal discovery)

In a church so oriented, there need never be fear of discovery, for new truth can threaten nothing. It only adds, builds, enhances, broadens, glorifies, frees, sanctifies, gladdens. In a community fully committed to the discovery of all truth, the only heresies are the perpetuation of ignorance and the teaching of the demonstrably false. Should *anything* else *ever* be branded as heresy? Blessed be the backbone of Athanasius! Said he, "If the world goes against truth, then Athanasius goes against the world."⁸

III

A legitimate question may be raised at this point. Wherein does the peculiarity of the Seventh-day Adventist church consist in such a creedless commitment? And how does an Adventist scholar differ from others who are also seeking to discover truth? The Adventist role in man's quest for truth must be both cooperative and unique. It is cooperative in its adherence to sound procedures and techniques in research. It is unique in the basic assumptions by which it interprets its findings.

When a man seeks to wrest from the universe its secrets, he has a choice between two basic assumptions regarding its fundamental nature. He may assume that the universe is the result of matter plus chance and time. He will then interpret his discoveries in terms of materialistic evolution. In this system, matter is the basic reality, and personality is merely an incidental result. On the other hand, the researcher may assume that the universe is the result of person plus design and purpose. He will then understand his findings in terms of a theistic creation. In this system, personality is the basic reality and matter the result.⁹

The Seventh-day Adventist scholar accepts the second basic assumption. He holds that God is; that through God's free activity he created the universe; and that through God's continuing activity he supports and guides it in its dynamic state, which we call the natural processes. Therefore, as the scholar studies these natural processes, he understands that he is probing into the activity of God and that he can thereby come to know God. To the scholar the universe in its total dynamic complexity is the self-revelation of the creating God.

The Adventist scholar makes another assumption corollary to the first. Because God is personal, he relates to persons personally. That is, God reveals himself through communication and communion as well as by material activity. Thus, true fulfillment for any particular person may be realized only to the extent that he finds such communion with the personal God, the ultimate reality and existence. The Adventist also holds that the Bible constitutes a record of divine-human communions that were actualized over a period of about a millennium and a half, and that this record has been so uniquely attested that it provides a norm by which all supposed divine-human communication may be validated. The Adventist researcher goes one step further in his belief that more recently the writings of Ellen G. White have supplied another record of a divine-human communion, over a period of about seventy years, which is of particular worth, second only to the Bible itself, in revealing God and his will.

These are basic assumptions made by the Seventh-day Adventist investigator regarding the nature of reality and the canons of evidence. He does not claim that

these can be proved, but he insists that they stand the pragmatic test. He does not question the integrity or the intelligence of fellow seekers after truth who reject these assumptions in favor of others, which also cannot be proved, even though he sincerely believes the weight of evidence to be on his side. In fact, he believes this so firmly that what we have called basic assumptions are actually matters of faith that become self-validating. He is convinced, therefore, that he can make significant and unique contributions to man's endeavor to roll back the frontiers of knowledge.

A church that claims the testimony of Jesus as one of its distinguishing marks has a very special mission in the discovery of truth. It has a great stake in the highest intellectual attainments possible. In the introduction to the Apocalypse, the testimony of Jesus is identified as the revelation of Jesus Christ, given him by God to show his servants. In the nineteenth chapter this testimony is called the Spirit of prophecy. Is this any other than the Spirit of truth that is to guide us into all truth? Then should not the very name *Seventh-day Adventist* be associated in the minds of all with the most vigorous pursuit of knowledge?

Adventist colleges and universities *must* become known for their high scholarly attainments, for their significant contributions to human knowledge, for their leadership in discovering God through his many revelations.

Regardless of how else they may succeed, if they fail in this they will cheat their students, who have a right to expect this. Also they will betray the church that established and supports them. And they will forfeit by default the respect of those in the world before whom they should "witness to the word of God and to the testimony of Jesus Christ" (Revelation 1:2) — which is the Spirit of truth.

NOTES AND REFERENCES

1/ "The first step of apostasy is to get up a creed, telling us what we shall believe. The second is to make that creed a test of fellowship. The third is to try members by that creed. The fourth is to denounce as heretics those who do not believe that creed. And, fifth, to commence persecution against such." J. N. Loughborough, Doings of the Battle Creek Conference, Oct. 5 & 6, 1861, *Review and Herald* (October 8, 1861).

2/ "Now I take the ground that creeds stand in direct opposition to the gifts. Let us suppose a case: We get up a creed, stating just what we shall believe on this point and the other, and just what we shall do in reference to this thing and that, and say that we will believe the gifts too. But suppose the Lord, through the gifts, should give us some new light that did not harmonize with our creed; then, if we remain true to the gifts, it

knocks our creed all over at once. Making a creed is setting the stakes, and barring up the way to all future advancement. God put the gifts into the church for a good and great object; but men who have got up their churches have shut up the way or have marked out a course for the Almighty. They say virtually that the Lord must not do anything further than what has been marked out in the creed. A creed and the gifts thus stand in direct opposition to each other. Now what is our position as a people? The Bible is our creed. We reject everything in the form of a human creed. We take the Bible and the gifts of the Spirit; embracing the faith that thus the Lord will teach us from time to time. And in this we take a position against the formation of a creed." James White, Doings of the Battle Creek Conference, *ibid.*

3/ Ellen G. White, *Review and Herald* (December 15, 1885).

4/ Ellen G. White, *Review and Herald* (July 12, 1898).

5/ Scriptural quotations herein are from the Revised Standard Version.

6/ Ellen G. White, The benefits of Bible study, *Apples of Gold Library*, no. 10 (March 1894).

7/ Ellen G. White, *Selected Messages*, 2 bks.

(Washington, D. C.: Review and Herald Publishing Association 1958), bk. 2, p. 56.

8/ Tryon Edwards (ed.), *The New Dictionary of Thoughts* (New York: Standard Book Company 1964), p. 688.

9/ This is a monstrous oversimplification, of course, but perhaps it will suffice for the purpose here.

The Age of the Earth:

HOW IT CHANGED FROM THOUSANDS
TO BILLIONS OF YEARS

P. EDWARD HARE

17

In the beginning God created the heaven and the earth. These opening words of Scripture have lost none of their beauty or majesty in the few thousand years since they were recorded. Man's concept of his planet and of its place in the universe has changed progressively and radically; but to each generation, with its limited view of nature, the scriptural account of the earth's origin has been widely accepted and harmonized with man's explanation of it.

In the mid-seventeenth century, when Archbishop James Ussher published his conclusion that the world was created in 4004 B.C., there was little difficulty in harmonizing this date with the facts of nature then known. During the seventeenth and eighteenth centuries, most scientists attempted to relate the evidence found in fossils and sedimentary rocks to the Genesis Deluge. Although many fanciful and absurd theories were proposed, there was relatively little conflict between theologians and scientists during this period.¹ In fact, most writers on the subject had been educated originally in theology!

An age of approximately 6,000 years for the earth and its inhabitants was almost universally accepted. Today most geology textbooks give a figure nearly a million times larger. The story of how this change came about is a fascinating chapter in the history of the conflict between science and religion. The debate goes back to the fifteenth and sixteenth centuries when Copernicus and Galileo suggested a theory for the structure of the universe that was not compatible with the theological teachings of their contemporaries — teachings that were based on a wrong interpretation of several passages of Scripture. Though more restricted, the argument continues even now; and much of it centers on the issue of Creation and the age of the earth.

It seems to me instructive to deal with the matter in its historical perspective to

determine, if possible, how we have arrived at the present state of the conflict between what many scientists say are "irrefutable facts" concerning the antiquity of the earth and what a number of theologians point to as "divinely inspired statements" that limit the earth's age to thousands of years.

The difference between a thousand and a billion is impressive. If you were one of a group of a thousand people among whom a thousand dollars were equally divided, you would be richer by one dollar. But if a billion dollars were equally divided among the thousand, you would become a millionaire (before taxes)! To change the earth's age from thousands to billions is no trivial change. This shift of opinion did not occur suddenly. Nor was it generally accepted without controversy — either in the scientific community or elsewhere.

NO SIGN OF A BEGINNING —
NO PROSPECT OF AN END

18

Toward the end of the eighteenth century, James Hutton, a Scottish geologist, proposed a theory of the earth that introduced the concept of uniformitarianism — a concept based on the assumption that existing geological processes had operated uniformly since the earth's origin. Earlier theories had accounted for the observed geological changes in the outcrops of the earth's crust as the result of one or more catastrophes. Hence, if the geological processes were regarded as having operated uniformly since the beginning, vast periods of time would be needed to accomplish the changes previously thought to have taken place in 6,000 years. Hutton never attempted to assign absolute ages to the rocks.

These phenomena, then, are all so many marks of the lapse of time, among which the principles of geology enable us to distinguish a certain order, so that we know some of them to be more, and others to be less distant, but without being able to ascertain, with any exactness, the proportion of the immense intervals which separate them.²

Hutton was the first to point out the significance of unconformities — where one series of strata rests on the upturned edges of another and thus is not continuous with it. He interpreted these upturned beds as originally having been deposited horizontally, then subsequently upheaved, folded, tilted, and partly eroded. After this sequence of events, the upper series of the strata was deposited on this eroded surface. To Hutton, vast periods of time were essential for the sequence of events to produce these unconformities.

One of Hutton's most significant contributions was the recognition that some rocks were not produced by the action of water. From field evidence he perceived that basalts (which he called whinstones) and granites had once been molten but subsequently had crystallized.

The reasoning that "subterraneous heat" must be involved — labeled the plu-

tonic theory — was violently opposed by those who held the neptunian theory advanced by A. G. Werner, a German mineralogist of great influence. The neptunists believed that virtually the entire crust of the earth had precipitated, or settled, out of a vast primeval ocean that once enveloped the earth. Furthermore, the neptunists claimed that their theory fitted the scriptural record of Creation and the Deluge far better than did the plutonic theory. The controversy between the plutonists and the neptunists was intense and bitter. The neptunists labeled the plutonic theory atheistic, primarily because of the vast time periods necessary to cool and crystallize molten rock and to produce the sequence of changes observed in the many unconformities of the geologic record.

On both sides of the vigorous debate were distinguished and able adherents. As often happens, much new information was obtained from the intensive study of the earth's crust conducted in the hope of proving one theory or the other. The controversy eventually ended with the general acceptance of the theories of the plutonists (or vulcanists, as they were sometimes called). Although the plutonic theory had been labeled atheistic by its opponents, it is interesting that the leading proponents strongly defended it as harmonizing with Scripture, as illustrated by a defense quoted from John Playfair.

On what is now said is grounded another objection to Dr Hutton's theory, namely, that the high antiquity ascribed by it to the earth, is inconsistent with that system of chronology which rests on the authority of the Sacred Writings. This objection would no doubt be of weight, if the high antiquity in question were not restricted merely to the globe of the earth, but were also extended to the human race. That the origin of mankind does not go back beyond six or seven thousand years, is a position so involved in the narrative of the Mosaic books, that any thing inconsistent with it, would no doubt stand in opposition to the testimony of those ancient records. On this subject, however, geology is silent; and the history of arts and sciences, when traced as high as any authentic monuments extend, refers the beginnings of civilization to a date not very different from that which has just been mentioned. . . .

On the other hand, the authority of the Sacred Books seems to be but little interested in what regards the mere antiquity of the earth itself; nor does it appear that their language is to be understood literally concerning the *age* of that body, any more than concerning its *figure* or its *motion*. The theory of Dr Hutton stands here precisely on the same footing with the system of Copernicus; for there is no reason to suppose, that it was the purpose of revelation to furnish a standard of geological, any more than of astronomical science. It is admitted, on all hands, that the Scriptures are not intended to resolve physical questions, or to explain matters in no way related to the morality of human actions; and if, in consequence of this principle, a considerable latitude of interpretation were not allowed, we should continue at this moment to believe, that the earth is flat; that the sun moves round the earth; and that the circumference of a circle is no more than three times its diameter.³

Rationalization? Probably in part. Nevertheless, the foregoing was an attempt to find harmony between God's words and his works.

During the controversy between Hutton's and Werner's followers, Georges Cuvier, a French biologist, studied the fossil-bearing strata around Paris.⁴ Cuvier,

the father of comparative anatomy and vertebrate paleontology, compared fossil shells and the skeletal remains of vertebrate fossils with those of living animals and concluded that many of the fossil forms represented species and genera distinct from any living animals. Furthermore, these fossil forms were found in a sequence of strata in which many fossils were restricted to particular sedimentary layers. By carefully comparing the associated fossils with their living counterparts, he was able to distinguish some beds as marine, others as fresh water, and still others as terrestrial.

A religious man and a creationist, Cuvier attempted to harmonize his findings with Scripture by proposing a series of creations and catastrophes — the most recent one being that recorded in Genesis, which he believed took place 5,000-6,000 years ago. He held that each catastrophe was followed by a special creation of new species that coincided with the sequence of fossils found in successive sedimentary strata.

In Great Britain, William “Strata” Smith, like Cuvier, also found a remarkable regularity in the fossil sequence that occurs in sedimentary strata.⁵ His geological map of Great Britain, published in 1815, earned him the title “father of English geology.” The map was the result of twenty-four years’ work in tracing the order of the strata with their associated fossils from one outcrop to another. Smith was the first to use fossils (“index fossils”) in correlating strata over large distances.

THE PRESENT IS THE KEY TO THE PAST

After the publication of Cuvier’s and Smith’s findings, it remained for British geologist Sir Charles Lyell to bring the various theories into focus. Lyell’s *Principles of Geology*, an immediate success when it was published in 1830, went through twelve editions before he died in 1875. The book relied on Hutton’s uniformitarian approach and presented a rather convincing argument that the strata and the fossils were arranged in a definite sequence for which vast amounts of time must have been necessary. To Lyell the concept of time was crucial in the development of the science of geology. He believed that it was impossible for the pioneers in geology to make any progress “so long as they were under a delusion as to the age of the earth.”⁶

Lyell traveled extensively and documented geological changes that had taken place during past ages. The variations in sea level that were superimposed on manmade structures, the erosion of historically dated volcanic areas, the growth of the Nile Delta, and the recession of Niagara Falls were some of the many phenomena for which Lyell tried to obtain actual rates of change. His estimate of 35,000 years for the excavation of the Niagara chasm⁷ was considerably longer than the currently accepted time based on radiocarbon dating. An important

point as to this time estimate is made in a nineteenth-century geology textbook by Joseph Le Conte of the University of California.

All attempts to estimate *accurately* the time consumed in excavating Niagara gorge must be unreliable. . . . Mr. Lyell thinks, from personal observation, that the average rate could not have been more than one foot per annum, and probably much less. At this rate it would require about 36,000 years. But, whether more or less than this amount, this period must not be confounded with the age of the earth. The work of excavating the Niagara chasm belongs to the present epoch, and *the time is absolutely insignificant in comparison with the inconceivable ages* [italics supplied] of which we will speak in the subsequent parts of this work.⁸

Lyell was one of the first to recognize that fossils in the lower beds of a sequence of sedimentary strata had fewer living representatives than did fossils in the upper beds. In fact, he used this principle to classify the tertiary deposits of Europe into the New Pliocene, Older Pliocene, Miocene, and Eocene groups.⁹ From studying the uppermost layers — the New Pliocene (now called Pleistocene) deposits — he determined that from 90 to 95 percent of the fossil species were also found as living species. In the Older Pliocene strata only 35 to 50 percent were still represented among living species, in the Miocene deposits 17 percent, and in the Eocene beds only 3.5 percent. As stratigraphic studies continued, these percentages changed somewhat, but the concept that the “degree of strangeness” increases toward the base of a sedimentary sequence is still considered valid in geology and paleontology.

Nowhere is this principle better illustrated than in the deep-sea cores being collected in the JOIDES (Joint Oceanographic Institutions for Deep Earth Sampling) deep-sea drilling project. Fossil planktonic foraminifera and other microfossils show similar relationships to living species. Invariably the deeper one goes in a sediment core, the higher is the percentage of extinct microfossil species found. The stratigraphic ranges of many extinct species form the basis for correlating the sediments sampled in the large number of recovered deep-sea cores. The recognition of former worldwide magnetic reversals is now supplementing the use of fossils in correlating one core with another.

EXPRESS IT IN NUMBERS

“I often say that when you can measure what you are speaking about, and express it in numbers, you know something about it.” This quotation from Lord Kelvin (William Thomson 1824-1907) illustrates the problem geologists faced in the latter half of the nineteenth century, when Kelvin began to apply the principles of physics to solve the riddle of the earth’s age.¹⁰ Geologists generally had been wary of expressing geologic time in numbers of years. Most were content to regard geologic time as very long, vast, incomprehensible, or even unlimited.

Some, however, tried to “express it in numbers” by measuring the thickness of

sedimentary strata and relating this measurement to a supposed rate of sedimentation. Limestone was thought to accumulate at much slower rates than detrital sediment, such as sandstone or shale. Estimates of sedimentation rates were obtained by observing the great rivers of the world and measuring their sediment load. The measurements yielded crude estimates that varied from 10 million years to 6 billion years!¹¹ By assuming different rates of erosion and sedimentation in the past, one could end up with almost any desired age for the stratified rocks. Measuring the rate of salt accumulation in the oceans was another crude attempt to assign numbers for the years thought to be necessary for certain geological processes.¹²

Kelvin's final calculations in 1897 placed the age of the earth between 20 and 40 million years,¹³ which was far less than earlier estimates that had been based on assumed sedimentation and erosion rates. Kelvin's method assumed an original molten earth that cooled according to known physical laws until the temperature gradient observed in its crust equaled that predicted by the mathematical model. It was clear that there was a serious discrepancy between the rates he estimated and the earlier rates. Most geologists felt that something was wrong with Kelvin's assumptions. For instance:

That there must be some flaw in the physical argument I can, for my own part, hardly doubt, though I do not pretend to be able to say where it is to be found. Some assumption, it seems to me, has been made, or some consideration has been left out of sight, which will eventually be seen to vitiate the conclusions, and which when duly taken into account will allow time enough for any reasonable interpretation of the geological record.¹⁴

The exact formulas of a mathematical science often conceal the uncertain foundations of assumptions on which the reasoning rests and may give a false appearance of precise demonstration to highly erroneous results.¹⁵

Some geologists sought to accommodate Kelvin's age limitation by assuming what seemed very rapid erosion and sedimentation rates. Many ignored Kelvin and continued to use revised data on stratigraphic thicknesses and sedimentation rates to determine geologic time. Their estimates were generally ten to thirty times higher than Kelvin's figures.

DISCOVERY OF RADIOACTIVITY

Much of Kelvin's work (theory, assumptions, and results) seemed unassailable until a few years after the discovery of radioactivity. Scientists began to realize that radioactivity itself was generating heat in the earth's crust, and calculations showed the concentration of radioactive elements to be sufficient to account for the entire heat flux from the earth. Replacing the assumption of a cooling earth with this new concept of a radioactive heat-generating earth made Kelvin's calculations (which had been based on a cooling earth) meaningless.

Progress in the understanding of radioactivity was rapid. By 1905 Ernest Rutherford, a British physicist, applied radioactivity to the determination of geological time.

The helium observed in the radioactive minerals is almost certainly due to its production from the radium and other radioactive substances contained therein. If the rate of production of helium from known weights of the different radioelements were experimentally known, it should thus be possible to determine the interval required for the production of the amount of helium observed in radioactive minerals, or, in other words, to determine the age of the mineral.¹⁶

In spite of the problem of helium loss from radioactive minerals, Rutherford presented data showing probable ages for some mineral samples of around 500 million years. Because lead is also a product of the radioactive breakdown of radium and uranium, he predicted its use for dating — which would be more satisfactory, since lead, unlike helium, should not escape the mineral structure so easily.

In a 1917 comprehensive review paper, Joseph Barrell — using radioactive dating and geological methods — published a geologic time-scale that agrees remarkably with time-scales now being published in the literature.¹⁷

In the nearly seventy years since Rutherford's application of radioactivity to geology, a number of elements with radioactive isotopes have been used for age-dating purposes: potassium 40/argon 40, rubidium 87/strontium 87, spontaneous fission of uranium 238 (fission-track dating), pleochroic halos, uranium 238/lead 206, uranium 235/lead 207, thorium 232/lead 208, and others. While discrepancies are common, the methods that assign ages of a few billion years to the oldest rocks of the earth's crust are in general agreement.¹⁸

The currently accepted value for the age of 4.5 billion years is derived from the composition of lead isotopes in various samples of lead from the earth and from meteorites.¹⁹ Of course, assumptions are involved in radioactive age-dating methods. These assumptions may seem reasonable to some and unreasonable to others, but geoscientists generally accept radioactive age-dating methods because the results are consistent.

DISCUSSION

Different individuals are impressed in various degrees by different kinds of evidence. The data from radioactive age-dating studies impress many people because the data appear to give a series of precise numbers for the geological age of numerous samples.²⁰ Persons who are troubled about an age for the earth that exceeds 6,000 years feel that the difficulties would vanish if radioactive age-dating could be explained away. Not so!

I have attempted to present — not defend — what geologists since the middle

of the eighteenth century have concluded about the earth's age. As the science of geology developed and as data on the rocks and fossils of the earth's crust accumulated, theories were formed and vigorous debates took place.

But when radioactive age-dating techniques were introduced, there was little or no basic change in geological thinking. In other words, the conclusions of geologists as to the vast time periods of geology *had already been formed* during the nineteenth century *before* radioactivity was even discovered! True, radioactive age-dating provided numbers, but many geologists had been assigning similar numbers long before the discovery of uranium and radium. It may be added that these conclusions had largely been formed even before the concept of organic evolution was accepted.

Scientific theories are seldom entirely correct or entirely false; generally they are only approximations to the truth. A valid theory not only stands the test of time but usually is modified as subsequent discoveries are made. Because scientific method in reality is a method of trial and error, an incorrect theory will be discarded eventually as more and more conflicting data accumulate. Thus, if current geological theory is in error, eventually it will be corrected.

The questions asked should be concerned not only with the assumptions and results of radioactive age-dating methods but with such basic geological concepts as stratigraphic sequence and correlation and the rates of geological processes. No single individual nor even a single generation can collect sufficient data necessary to answer all the questions of geology. With humility we each must admit that there are far more data available than we can comprehend. But this fact should not discourage us from the attempt.

All possibilities should be considered, including the possibility that many details of current geological theories are indeed on the right track and are approximations to the truth. Many persons who believe such to be the case believe also in the inspired scriptural accounts of Creation and the Flood. For these persons there is little or no conflict between science and the Bible when scriptural accounts are interpreted in their historical context.

The book of nature and the written word shed light upon each other.²¹

Since both have the same Author, a correct understanding of both will prove them to be in harmony.²²

Within the geological sciences there are indications that some long-held ideas are being modified and even discarded. The concept that the *rates* of geologic change have always been uniform is no longer considered valid. "Substantive uniformitarianism as a descriptive theory has not withstood the test of new data and can no longer be maintained in any strict manner."²³

In answer to the question of why whole groups of animals have simultaneously died out, geologists and paleontologists now consider that a series of catastrophes is more likely the cause than are the slow, incessant geologic changes postulated by uniformitarianism.²⁴ To explain the often excellent preservation of fossils in the light of sedimentation rates of approximately one foot per several thousand years has always been a problem. At these slow rates, hundreds or even thousands of years would be needed to bury the fossils, and they would not be well preserved under these circumstances. Geologists are considering that rapid burial is necessary to explain the fine preservation often found. This does not mean, however, that geologists are considering a single catastrophe, such as the Flood, as an adequate explanation of the fossil record. Instead, numerous catastrophes are considered the more likely cause of much of the sedimentary record of the earth's crust.

Recently I made a three-hundred-mile geological field trip by raft on the Colorado River from Lee's Ferry to Lake Mead. Only a little more than a hundred years had elapsed since John Wesley Powell's first expedition, and early photographs from his second expedition were available for numerous areas along the river. In many cases it was possible to stand in the exact spot where Powell had taken pictures nearly a hundred years before. Sometimes almost every rock and boulder in the old photograph could still be identified, apparently little change having occurred in the intervening century. In other cases no rocks or boulders in the old photographs could be identified; the change was almost complete.

What made the difference? Sudden catastrophes! Some side canyons had experienced periods of extreme flooding that completely altered the surface features, whereas other nearby canyons had not. At Crystal Creek (mile 99) a 1966 flash flood carried debris down from the North Rim and, within the space of a few *hours*, completely altered the surface features at the point where the creek enters the Colorado River. In fact, that single event created what is now one of the most exciting and vigorous rapids along the entire river. The differences observed along the Colorado River over the last hundred years cannot be explained by slow, uniform changes. Rather, the explanation seems to be a series of sudden changes that have taken place, with most of the actual change occurring in the space of a few hours.

Geologists are using this kind of explanation for a variety of geologic phenomena. Volcanic action is sudden, and the changes are often dramatic. Floods and hurricanes can accomplish more in a few hours to change the surface features of parts of the earth than hundreds of years of normal climatic activity could. Earthquakes and landslides often cause rapid geologic changes. Whether the concept of sudden changes will alter the overall need for time in the geologic record re-

mains to be seen. But it seems certain that as new data are obtained from the earth, a closer approximation to the truth will be possible.

SUMMARY

The purpose of this presentation has been to show that the current belief in enormous spans of time for the geological history of the earth *did not* result from the application of radioactive age-dating methods. This concept of vast time periods resulted largely from studies on rates of sedimentation and erosion and, contrary to some opinions, did not involve the theory of organic evolution.

The science of geology has its own methods and techniques. If one would learn from the earth the secrets of its past, one must learn to speak the language. The advice of Peter Severinus, the sixteenth-century Dane, to his students is still applicable today after 400 years:

26

Go, my Sons, buy stout shoes, climb the mountains, search the valleys, the deserts, the sea shores, and the deep recesses of the earth. Look for the various kinds of minerals, note their characters and mark their origin. . . . Observe and experiment without ceasing, for in this way and in no other will you arrive at a knowledge of the nature and properties of things.²⁵

No matter how man's theories about the age of the earth may change, never will it be old fashioned or outdated for the committed Christian to declare with the psalmist, "The heavens declare the glory of God; and the firmament showeth his handiwork," or to believe with the writer of Genesis, "In the beginning God created the heaven and the earth."

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Diverse theories held that fossils were "discarded patterns left over from the creation" or "sports of nature" from the spontaneous generation of the earth. In the eighteenth century, fossils were considered as relics of Noah's flood; and before Cuvier's careful work on comparative anatomy, many skeletal remains of the larger vertebrate animals were thought to be human remains of the antediluvians.

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In his study of the fossils of the Paris Basin, Cuvier was joined by his associate, Alexandre

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Love Freedom

DAVID PRESCOTT BARROWS

28

I bid you as my parting words,
to love freedom;
to defend freedom;
to set it higher than any other
condition of existence.

I do this with confidence, because
I believe that God created freedom.
And I believe that God has placed it
higher than human well-being.

How else can we explain the old dilemma
of the prevalence in the world of evil?
The heavenly Father permits it,
because to suppress it
would be to destroy freedom.
Therefore, his solicitude for freedom
must be greater even
than his purpose to extinguish evil.

Remarks from his commencement address
at Berkeley, California, in 1921, when he was
president of the University of California.

Genesis and Prehistory:

THE CONFLICTING CHRONOLOGIES

R. ERVIN TAYLOR

29

For over a hundred years the Seventh-day Adventist church, through its official church publications, generally has supported a view which posits that man has been on the earth 6,000-7,000 years — that is, the period of time assumed to have elapsed since the creation of our planet and/or life on it. Adventists have been firm in their insistence that the earlier chapters of the Genesis narrative contain an account that is both a literal record of how life first appeared on this planet and the basis of an accurate chronology of man's early history.¹ Increasingly, however, responsible Adventist scientists have begun to raise serious questions as to the validity of the traditional Adventist interpretation of the Genesis creation story, especially in terms of the *age* of the earth and the antiquity of man.²

Today there seems to be little doubt that the Adventist church soon (if it is not already) will be stretched between the Scylla of scientific evidence and the Charybdis of entrenched traditional theology. For those who wish that some nice quiet compromise might suffice to resolve the dilemma, the seemingly clear statements of Ellen G. White pose a problem. In a number of different contexts she specifically stated that "the world is now only about six thousand years old."³ The White Estate has collected eighteen references found in her writings (between 1864 and 1898) in which she seems to approve of the belief that all organic life and the world itself are about 6,000 years old. Statements in *The Seventh-day Adventist Bible Commentary* also endorse this view. For example, *The Commentary* states that "the figure 6,000 is undoubtedly a rough approximation of the time from creation."⁴

Many church members, on the other hand, have begun to question this view and to point out that evidence from such diverse fields as geology, archaeology,

physical anthropology, paleontology, and geochronology suggests an age of our planet and organic life on it (including man) far in excess of a few thousand years. Michael W. Holm has marshaled an impressive array of data to support a belief that the age of the earth and of certain organic forms is on the order of millions and hundreds of millions of years. After a lengthy discussion of several different lines of evidence that support his arguments, he concludes one article by noting: "Fundamentalists may attack one dating method or another, pointing out sources of error and uncertainty. But this is like walking into a forest and denying its existence because many of the trees have imperfections. The present system of geochronology is too coherent to be overthrown by attacking two or three or five or ten of the techniques employed."⁵

My essay is intended to build on Holm's excellent discussion by a brief outline, from an archaeologist's perspective, of some of the evidence suggesting that man has existed on this planet for a time far in excess of 6,000-7,000 years.

I

Until the beginning of the nineteenth century, the major source materials for the reconstruction of the chronology and history of the ancient Western world consisted of the historical narratives of the Old Testament and the extant works of classical Greek and Roman writers. The antiquity of civilization in the ancient Near East was recognized, but accurate chronology was difficult to obtain in the absence of adequate primary archaeological evidence. In contrast to the fragmentary and frequently distorted nature of much of the classical narrative for the period before the Persian Empire, the Old Testament's historical narratives seemed to provide an almost unbroken account of Hebrew history that stretched back from the Persian period, through an independent Hebrew monarchy, through a period of residence in New Kingdom Egypt, and through individual "patriarchal" links, to a creation in the remote past calculated in modern times at some 6,000-7,000 years before the present. Until the middle of the nineteenth century, "ancient history" for the preclassical period of much of the Christian world centered about a chronology derived largely from Old Testament narratives.⁶

In the nineteenth and early twentieth centuries, archaeological discoveries in southwestern Asia began to provide archaeologists and historians with essential primary data on which the main outline of nonbiblical Near Eastern history could be built. The pioneer excavations of Mariette and Maspero (in Egypt), of Petrie (in Palestine and Egypt), and of Botta, Layard, and Woolley (in Mesopotamia) laid the foundation of modern Near Eastern archaeology and provided the basis for the work of Albright, Garstang, Glueck, Kenyon, Emery, and many others. The decipherment of the hieroglyphic (Egyptian) and cuneiform (Mesopota-

mian) writing systems and the translation of historical materials (such as king lists) enabled researchers to begin to block out a chronology for the historic civilizations of the ancient Near East going back to the early dynastic period in Sumer (Mesopotamia) and the First Dynasty in Egypt.⁷

The same decades that saw the beginning of scientific archaeological work in the *historic* cultures of ancient western Asia witnessed the emergence of *prehistoric* archaeology. This field concerned itself primarily with the reconstruction of the development of human culture in the period before written records became available. Until recently, attempts at establishing some sort of chronological system for most prehistoric cultures were based largely (with certain exceptions to be mentioned) on indirect methods. In most cases these methods, such as stratigraphy (the principle that older materials generally rest below younger materials), ceramic and other artifact typological cross-dating, and the correlation of human remains and artifacts with geological events and climatic changes, achieved only relative sequencing.⁸ For example, a sequence of prehistoric cultures in Egypt was established originally by Sir Flinders Petrie, who utilized changing styles of pottery decoration.⁹ As archaeological work continued to progress, however, it became increasingly clear that significant social and cultural changes had occurred during prehistoric times. These prehistoric periods witnessed such fundamental technological and subsistence innovations as the domestication of plants and the invention of pottery. The term that came to be assigned to this period was Neolithic, or New Stone Age.¹⁰

In western Europe, archaeologists working along the river courses and in caves and rock shelters began to uncover clear evidence of human activity where stone was the predominating type of tool or was the only kind of tool that remained for archaeologists to recover. This period of time seemed to long antedate the period when man built permanent structures, made pottery, and domesticated plants and animals — that is, to long antedate the Neolithic Age. This earlier period was called the Paleolithic or Old Stone Age and seemed to coincide with a geological epoch known as the Pleistocene — an era characterized at least in western Europe (and in the northern portion of North America) by a series of advances and retreats (usually thought to be at least four in number) of large continental ice sheets called glaciers. Thus, the period was called the Ice Age. On the basis of changing techniques of the manufacture of stone tools, archaeologists built up a chronological sequence that was assumed to span tens of thousands of years.¹¹

By the twentieth century, a series of broad chronological categories had been set up that seemed to represent the sequence through which man's culture had developed — at least in parts of Europe and western Asia: Paleolithic, Mesolithic (a transition period), and Neolithic. A Bronze Age and an Iron Age completed

the sequence in late prehistoric/early historic times. The time-spans of these various units were more in the nature of "guesstimates." The beginning of the Paleolithic was estimated to lie between 100,000 and 1,000,000 years ago; the beginning of the Neolithic, between 6,000 and 8,000 years ago. The beginning of the historic period in Egypt, for example, at first placed at 6,000-8,000 years ago, was reduced further and further, until it was thought to be approximately 6,000-5,000 years ago, or 4000-3000 B.C.

To know whether these dates had any concrete validity, however, was difficult. What was real was the *relative* placement of the various units. For example, in a given area, such as western Europe or western Asia, the various stages of the Paleolithic clearly seemed to come before the Neolithic; and the Neolithic in turn antedated the historic periods. One major problem from a chronological perspective was developing a more rigorous means of determining accurate ages for these various periods. Techniques for estimating the actual passage of time in years were available, but they were restricted to specific areas (such as tree-ring dating, which was and is limited to a relatively small number of areas) or had been shown to be valid under only certain conditions.¹²

II

A new dating technique, developed within the last twenty years, surmounts most of the problems that plagued earlier attempts at establishing specific dates for prehistoric as well as historic sequences. The technique is applicable on a worldwide scale and can date organic material (wood, charcoal, etc.) routinely for periods of 40,000-50,000 years. More than two decades of experience with the technique have brought increasing confidence in the general validity of its results. This method, based on the radioactive decay of carbon 14 (radiocarbon), now potentially permits archaeologists to date, in terms of years, sequences that heretofore could be "dated" only relatively, as noted above.¹³

Radiocarbon dating was developed by Willard F. Libby and coworkers at the University of Chicago after World War II. (Libby received the Nobel Prize in chemistry in 1960 for his discovery.) Since a number of clear and concise explanations of the technique have been published, interested persons should have no difficulty gaining an understanding of the basic concepts.¹⁴ The first radiocarbon dates were published in 1949. Now, over sixty laboratories around the world are involved in dating archaeological and geological materials. Despite the problems of physical contamination of some of the earlier samples submitted for testing, and problems of uncertainty about some of the basic parameters of method, the general validity of the method now seems essentially established. This confidence is based in part on determinations made on samples of known age (historically

dated wood back to about 3000 B.C. and tree-ring-dated wood back to about 5000 B.C.) and in part on the consistent results obtained on samples with a known relative position in a stratigraphic column.¹⁵

When this new dating technique was applied to the problem of determining actual temporal placement of archaeological material, in most cases the *general* estimate of age assigned by the archaeologist to a specific period in a relative sequence was vindicated. This is not to say that many puzzling chronological problems do not exist even after the application of the C-14 method; what is being emphasized is that the *general* time depth of the major chronological divisions of the prehistoric period, as blocked out by modern prehistoric archaeology, was essentially confirmed (with a relatively small number of exceptions) by C-14 data. For example, radiocarbon dates on materials associated with the Paleolithic had values from about 8000 B.C. all the way back to the limits of the methods at about 50,000 years, with comparable younger dates on Neolithic and more recent periods.¹⁶

Radiocarbon dating is only one method, of course, of a rapidly increasing number of dating techniques that are being developed. Since space does not permit discussion of each one, a simple list of the most important is given: obsidian hydration, thermoluminescence, archaeomagnetic intensity and direction methods, amino acid, potassium-argon, fission track, dendrochronology (already mentioned), and varve dating.¹⁷ Where C-14 values have been checked against data obtained from another method, in most cases the general validity magnitude of the C-14 age was confirmed.¹⁸

From time to time, various persons writing in Seventh-day Adventist church publications have attempted to discredit dating techniques on the basis of alleged specific erroneous results.¹⁹ What is at issue is not the occasional anomalous results but the *general* validity of each method. Denying the total validity of a method on the basis of a few erroneous results is similar to the situation described by Holm of "walking into a forest and denying its existence because many of the trees have imperfections." Some have postulated what a universal flood "might" have accomplished in the way of disrupting the geophysical and geochemical parameters on which, for example, C-14 dating rests.²⁰ Speculations as to what a Genesis flood "might" have accomplished seem irrelevant unless specific scientific evidence can be introduced to support the assertions. What the evidence does seem to suggest is that it would be extremely difficult to fit the archaeological data, as known at the present time, into a chronological framework that allows only 6,000, 8,000, or even 50,000 years. Whole developmental sequences would have to be telescoped into seemingly impossible short spans.

Perhaps it would be appropriate to suggest that there is a need to reconsider

the whole problem of what constitutes a “biblical” chronology. Beyond the well-known breaks in the patriarchal lineages, the whole subject of the chronological reality of the Genesis narrative requires a much more critical appraisal. I would like to suggest that the major thrust of the Genesis story concerns *who*, not *when* or even *how*. It would seem that we Adventists have failed, in most church-published materials, to distinguish between *events* we associate with the Genesis accounts (chapters 1-10) and the *time* period or periods we associate with these events. That is, Adventists have neglected to make a distinction between *what happened* and *how long ago* it happened. It seems to have been assumed that to take the biblical narrative literally one must be literal not only about *what* but also about *when*.²¹

CONCLUSION

34

The Seventh-day Adventist movement was born in an era of intellectual, social, and political turmoil in American society. In the early nineteenth century, American sectarianism was taking shape, and at the same time a series of revolutions was shattering the Colonial institutional religious structures. Concurrent with this fragmentation of American Protestantism was a development that church, denomination, and sect alike were to face — the startling discoveries of the emerging scientific spirit in the Western world and specifically the problem of reconciling science (naturalism) and religion (supernaturalism). Until 1859, natural science had been regarded as a God-given support of religious orthodoxy. With the publication of Darwin’s *Origin of Species*, this association was soon dissolved, and the ill-named “conflict” between science and religion was joined. In many cases the dialogue, and sometimes diatribe, that ensued between Darwinism and religious orthodoxy quickly degenerated into polemic and impassioned oratory that generated much heat but little understanding. In the mid-nineteenth century, Boromé remarked:

Some scientists, restive under the [yoke] of religion, used Darwinism as a club with which to batter a way to independence, even to destroy the citadel of religion. Some religionists, fearful of the results, sought to pull down the columns of science that did not rest on the Scriptural foundation stone; they also set out to meet the dangers of civilization that lay in words now associated with Darwinism: whether chance, change, agnosticism, skepticism, atheism, relativism, free will, secularism, or modernism.²²

There would have been little question what viewpoint the spokesman (or, more correctly, spokeswoman) for a small rebel group of religionists was to take with respect to this controversy. The opinions of Ellen Gould Harmon White, the leading writer and charismatic visionary of the emerging Seventh-day Adventist church, did not differ significantly *on this point* from views expounded by a number of other religious writers of the late nineteenth century. And the posi-

tion thus taken by the church she was instrumental in founding was hardly unique. For example, the Tennessee Conference of the Southern Methodist Church in 1878 made a solemn resolve concerning the teaching of evolution in their university: "This is an age in which scientific atheism . . . walks abroad in shameless denudation. The arrogant and impertinent claims of this 'science, falsely so-called,' have been so boisterous and persistent, that the unthinking mass have been sadly deluded."²³

Thus, as the Seventh-day Adventist church took shape, one of the positions woven into the fabric of its theological traditions was a world view common to large segments of nineteenth-century rural Protestant America: that God had created the universe and/or the world and/or life on this planet in seven literal twenty-four-hour days approximately 6,000 years earlier. Like all other religious revolutions before and after it, Adventism inherited beliefs, attitudes, habits of thought, and customs that were compatible with its newly formulated "message," which focused in part on the Sabbath as a memorial of Creation.

Today, Adventists' perspective of the meaning and function of the Sabbath is broader. The commitment of the church to *present truth* should mean that its members are continually in the process of renewing and reevaluating the beliefs and opinions held by those of the movement who went before. Adventists must communicate and share with others what they believe to be their insights about the nature of God and the nature of man. Retaining a nineteenth-century world view — or, more specifically, the time frame of that world view — denies the Adventist church the opportunity of sharing these insights with modern man.

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The Early-Date Genesis Man

WILLIAM J. KORNFELD

37

This article from *Christianity Today* (written as a response to Robert Brow's "The Late-Date Genesis Man," September 15, 1972) is reprinted here from the June 8, 1973, issue of that journal, with the permission of the author and the editor. EDITOR.

The question of man's origin, which is closely related to the age of man on this planet, is not only pertinent but of fundamental importance to the kind of impact Christianity is making upon a non-Christian world. For instance, some years ago many Christian young people in the area of Latin America where I was living were confused on this subject, having been told by their pastors that belief in any kind of evolution was incompatible with Scripture and therefore incompatible with being a Christian. One survey showed that as many as three-fourths of the young people were lost to the evangelical community after they had come under the concentrated influence of the secular university's teaching of a materialistic interpretation [of] man and his origin.

In response, a group of Christian university students encouraged me to offer an open course related to the origin of man from a theistic viewpoint — in a local Marxist-oriented university. Interestingly enough, this series of some twenty lectures was well received by both students and faculty. The lectures took both the Bible and science seriously. As a result of the interest generated in this topic, the university published the entire lecture series, which actually presented a non-evolutionary alternative view of man's origin.

It seems that the best approach to this subject is to assume a humble and respectful attitude toward the findings of science and the facts of Scripture. In other words, our attitude is to be that of 1 Peter 3:15 — "Be always ready with your defense whenever you are called to account for the hope that is in you, but make that defense with modesty and respect" (NEB). And we should be really sure of the facts of both science and Scripture, realizing that God is the author of the

natural laws discovered by science just as he is of his revelation in the biblical record. Therefore there can be no real discrepancy between the two. I have found over the years that scientists are, for the most part, addressing themselves to a different set of questions than theologians. Scientific researchers are more interested in discovering *how* it all came about rather than in the deeper and more fundamental question of *why* man — to which the Bible clearly speaks.

Scientists are not automatically biased against facts that do not necessarily support their theories. While doing graduate work in anthropology at the University of Pennsylvania a few years ago, I could not help being impressed by the intellectual honesty of my professors and their genuine humility about what science could not tell us about man's origin as well as what it *could* tell us. When the facts did not support the assumed theory, they often readily admitted it. The strongest arguments I ever heard against evolution occurred while I was doing graduate work at Penn, because my professor, though an evolutionist, honestly presented both sides of the question.

With this background, let's now look at some of the facts of science as they relate to the question of the age of man upon earth. As a student of prehistory who lived in the Andean area of South America for many years, I have had opportunity to do archaeological fieldwork on a number of early-man sites, which date man earlier than 10,000 years ago (Kornfield, 1972); to my knowledge there are approximately 300 lithic workshops-campsites in the Andes that antedate Abraham by several thousand years. Consistent series of carbon-14 datings of organic materials found in association with artifacts and/or morphologically modern skeletal remains indicate that man is old even in the New World. The famous Folsom projectile point from Colorado, clearly dated in the 9,000-10,000-year range, was so skillfully made that present-day scientists have spent years — and with little real success — attempting to replicate this magnificently engineered spearpoint (Crabtree, 1966). It appears that the Folsom point represents the mind of a human being every bit as ingenious and as capable as we are today. A good number of prehistoric early-man sites have been discovered in the New World that are in the 10,000-12,000-year range (Jennings and Norbeck, 1964; Willey, 1966; Lynch, 1967; Rowe, 1967; Ravines, 1970). More recently a Harvard scientist's carefully controlled excavations near Ayacucho in the Peruvian highlands give strong evidence that man was probably living in the Andean area of South America 20,000 years ago (MacNeish, 1971). All skeletal remains found in conjunction with early-man sites in the New World are of fully modern man.

Neanderthal man (*Homo sapiens*), whose morphological variations are found among modern man today (Brace, 1964), is generally considered to have existed

between 40,000 and 70,000 years ago, with consistent radiometric determinations on a number of finds in the 40,000-to-45,000-year range — such as Shanidar man in Iraq and several of the Mount Carmel finds from Palestine (Braidwood, 1964; Brace, 1964, 1967; Howell, 1968). While the general skeletal and facial structure and dentition of Neanderthal appear to be more rugged than those of most modern men today, Brace (1964) says that “no one of these differences is outside the range of variation of modern man” and that “there is reason to believe that they were at least as intelligent as modern man, if not more so” (1967). Birdsell (1972) observes that there is “little reason to doubt that these early Europeans were intellectually as bright as present-day ones.” Binford (1969) has also observed, “Once considered to be a species separate from ourselves, Neanderthal man is generally accepted today as a historical subspecies of fully modern man. A great deal of archaeological evidence collected in recent years strongly suggests that the behavioral capacities of Neanderthal man were not markedly different from our own.” On the basis of his completely erect posture, a cranial capacity every bit as great as (and sometimes greater than) that of modern man, and the fact that his skeletal remains have been found in direct association with cultural artifacts and ceremonial burials, present-day anthropologists now consider Neanderthal man as *Homo sapiens*.

Nevertheless, whatever differences of opinion may still be held by a few scientists as to Neanderthal man’s being an integral part of our own species, there is decided unanimity as to the completely modern nature of Cro-Magnon man, who made his appearance approximately 35,000 years ago in Europe (Brace, 1967; Braidwood, 1964; Birdsell, 1972; Howell, 1968). From about 25,000 to 10,000 years ago there are abundant skeletal remains — including complete skeletons — of Cro-Magnon man, a superbly built specimen of modern man. Then in another part of the world, Australia, there are confirmed early-man sites with accurate carbon-14 samplings that go back at least 16,000 years (Mulvaney, 1966).

From these observations, I would project Neanderthal and Cro-Magnon man as being modern man, as evidenced not only by morphological criteria but by the artifacts he left behind, which are of far-reaching significance: bone awls and needles, excellently manufactured pressure-flaked tools and burial goods found in association with planned burials of different types (Bordes, 1968; Braidwood, 1964; Birdsell, 1972; Howell, 1968). One of the most striking finds of early man is that of Shanidar in Iraq, who was buried upon a bed of hyacinths and hollyhocks and then covered with floral wreaths of similar flowers (Birdsell, 1972). Does not man do much the same thing in funerals today? Confirmed radiocarbon datings of Shanidar man consistently place him over 40,000 years old (Brace, 1967; Howell, 1968). Another evidence of modern man in the Paleolithic is seen

in the magnificent Aurignacian cave murals of 30,000 years ago (Howell, 1968; Comas, 1962; Leroi-Gourhan, 1968). Considering the beautiful Solutrean laurel-leaf projectile points with delicately tooled pressure-flaked edges, the wide selection of other skillfully made implements in the Paleolithic period of Europe, together with the abstract nature of highly developed cave paintings, one cannot help being impressed with the quality of the being that was responsible for these cultural artifacts. These were certainly human qualities.

As to the possibility that *Homo sapiens* or modern man is older still, there seems to be some evidence in this direction: the sapiens nature of the Steinheim, Swanscombe, and Fontechevalde finds (Brace, 1964, 1967; McKern, 1966; Birdsell, 1972), as well as the more recently discovered Vertesszöllos human fossil remains (Scientific Research, 1967; Birdsell, 1972). It should be pointed out, however, that all these earlier dated finds not only are fragmentary but are based on relative methods of geological dating; therefore, unlike Neanderthal and Cro-Magnon man, their absolute chronology cannot be confirmed at this stage of investigation.

In view of how much has often been read into Scripture that is really not there, it is significant to know not only what Genesis tells us about man's origin but also what it leaves unsaid. For example, what about an actual description of Adam's physical features from the Genesis account of man's creation? Could he have been a Neanderthal — in other words, a perfectly legitimate variation of modern man? What about his color? What does the Bible actually say? Was he black, yellow, brown, white, or none of these? Do we really know anything about his race?

Then what about the crucial question that is before us in this essay, the time in which he made his appearance on this planet? I must take exception to Robert Brow's statements that "the Bible tells us that this kind of person was created suddenly in comparatively recent times, let us say roughly 3900 B.C. . . . Given Abraham's dates as 1952-1777 B.C., the closely interlocking chronology of Genesis 11 would place the biblical flood at 2244 B.C., and the dates of Genesis 5 if we take them literally then place the origin of Genesis man as 3900 B.C." (Brow, 1972). There is certainly a difference of opinion among biblical scholars as to Brow's way for assessing the date for Adam. Samuel Schultz of Wheaton College points out, "Nowhere do the Scriptures indicate how much time elapsed in Genesis 1-11. . . . Regardless of what date man may approximate for the beginning of the human race it is still within the scope of the scriptural account. . . . By using the genealogies of Genesis 5 and 11 to calculate time Bishop Ussher (1654) dated the creation of man at 4004 B.C. This date is untenable since genealogies did not represent a complete chronology" (Schultz, 1970). Francis Schaeffer re-

inforces this: "Prior to the time of Abraham, there is no possible way to date the history of what we find in Scripture. . . . When the Bible itself reaches back and picks up events and genealogies in the time before Abraham, it never uses these early genealogies as a chronology. It never adds up these numbers for dating" (Schaeffer, 1972). Old Testament scholars also recognize that the numbers given in these genealogies vary in the Massoretic, Samaritan, and LXX texts so that we cannot be sure just what the original manuscripts stated in this regard. If one day is really as "a thousand years" and "a thousand years as one day" with the Lord (2 Peter 3:8), then why couldn't Adam have been a Neanderthal — as the Mount Carmel caves of modern skeletal remains may indicate — and lived 50,000 years ago? It seems significant that the Holy Spirit has not seen fit to give more detailed answers to these questions in the Genesis account of creation. If the reader should choose to ignore Neanderthal man as a legitimate human being, created in the image of God, what about Cro-Magnon man, who lived at least 30,000 years ago and whose every indication is 100 percent modern? Then of course there are the many early-man sites of morphologically modern man in the New World that clearly antedate 10,000 B.C. In the light of these facts, is the 3900 B.C. date projected in the "Late-Date Genesis Man" article really tenable?

A word about a so-called pre-Adamic "race" is also in order as this concept is mentioned by several evangelical theologians, including Brow. There is, however, no real basis for this in Scripture, as Brow himself points out: "It is wise to remind ourselves that the Bible tells us nothing whatever about the first animals that stood upright, or that may have looked like men. The Bible begins with a very particular species of person. Let us call him Genesis Man. This is the race that began with Adam." The concept of a pre-Adamic creature looking like man but not being man appears to be a way of avoiding implications of all the fossil and cultural evidence for the existence of man early in time. I find it most difficult to believe that God would make a being so very much like us physically and mentally, with a definite cultural tradition, along with a capacity to bury the dead in a carefully planned ritual manner, that yet was not created in His image. This type of culture-bearing being is exemplified in both Neanderthal and Cro-Magnon man, and this would, on the basis of the evidence at our disposal, qualify him as being part of the Adamic race. As Dr. Schultz recently told me, he sees no problem in postulating the creation of Genesis man 50,000 years ago (personal interview, 1973). In view of the significant amount of modern skeletal remains found in clear association with definite cultural artifacts early in time, it is increasingly difficult to understand how present-day evangelicals can still hold to an Ussher type of chronology for the creation of man.

It appears that the major problem of the time of man's origin lies more in the area of interpretation than in a reconciliation of facts for or against a specific theory. The problem becomes more acute when scientists attempt to push the evidence too far by stating, for example, the concept of evolution as "fact," or, on the other hand, when theologians attempt to push the Scriptures too far into science and thus beyond that which the Holy Spirit intended. A case in point is Luther's remark that Copernicus, who later became the father of modern science, erred in his "stupid notion" that the earth revolves around the sun since the "Scriptures (Joshua 10:12) prove that the sun goes around the earth" (MacKay, 1965)!

As far as science is concerned, noted physical anthropologist Loren Eiseley warns us that "the gap between man and ape is not as the early Darwinians saw it — a slight step between a gorilla and a Papuan. . . . Instead, it stretches broad and deep as time itself. . . . The key to the secret doorway by which he [man] came into the world is still unknown. The fortunate thing in terms of modern anthropology is that we know the disparity between man and ape is great, not small" (Eiseley, 1955). What distinguishes man from the rest of the primate world and makes him unique is his brain size (more than three times greater than that of the gorilla), his tool-making ability (one of the great hallmarks of man), and his complex language (there is no such thing as a "primitive" language anywhere on earth). Only man has culture, which for a number of anthropologists constitutes a difference in kind rather than degree from the animal world. It would seem that God made Adam separate from the primate world with all his physical, mental, moral, and spiritual characteristics present at the same time.

One wonders, nevertheless, about the mind-set of Moses when he gave us that beautiful description of man at the top of God's creative order. In fact, would it be so far out to say that possibly the Holy Spirit was not really addressing himself to twentieth-century scientific theory at all but rather to God's great purpose for man on the earth?

I conclude by saying that man is unique in the animal world and that his uniqueness is best reflected in the fact that he alone was made in the image of God. As a student of prehistory and physical anthropology I see that same kind of uniqueness in Neanderthal man, Cro-Magnon man, and the many examples of early man in the New World — whose burial offerings and cave murals seem to indicate an intelligent belief in the supernatural, whose cranial capacities and skeletal morphology are clearly within the scope of present-day man and whose skills were highly developed. All this, in my opinion, places Genesis man early and not late in time. Is it then really necessary to have a late-date Genesis man to substantiate one's faith?

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The earth is the Lord's,
and everything in it.

1 CORINTHIANS 10:26 RSV.

Jann

PAULINE WICKWIRE WHITSON



My Hand Has Made

Thus says the Lord:

Heaven is my throne
and the earth is my footstool.
What is the house
which you would build for me,
and what is the place of my rest?
All these things my hand has made,
and so all these things are mine,
says the Lord.

But this is the man to whom
I will look:
he that is humble and contrite
in spirit, and trembles at my word.

ISAIAH 66:1-2 RSV.

The Doctrine of Creation

ARTHUR J. PETERSON

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I

The Christian Doctrine of Creation has been the subject of controversy throughout the centuries as churchmen strove to bring the inflow of new knowledge and thinking into harmony with established religious thinking. At times these engagements have been violent, and to achieve resolution has been difficult — because the most convincing conclusions deduced from carefully derived information would be regarded as unquestionably fallacious whenever they differed from existing views of nature based on extreme biblical literalism.¹

Nevertheless, the Doctrine of Creation has not only survived these engagements but has emerged with significantly greater vitality and meaning. So, as a result of this process of continuing argumentation and resolution, it can be said today, with a degree of satisfaction, that Christian theology has indeed evolved. It has progressed from the interpretation of a “magic” view of natural data to large accommodation of the recognized and respected disciplines of the physical and chemical sciences.

Actually, the age-of-the-earth controversy is one in a long series of major theological controversies. When stripped of all its irrelevancies, it is no more than an impasse between those who hold to a relatively inflexible age of about 6,000 years (calculated on the basis of biblical genealogies) and those who hold to a more flexible age of about 5 billion years (calculated on the basis of scientific study, research, methodology, and technology).² Unfortunately, then, the scientists who are Christians are the ones who frequently bear the brunt of the thrusts of churchmen. It is at this juncture that the polemic gets vigorous, heated, and schismatic; and, tragically, the debate becomes a conflict between Christians.

But many changes in thinking have come to pass — largely by the erosion of insupportable theological arguments for the young-earth view, and by the presen-

tation of convincing, solid, irrefutable scientific information. The Doctrine of Creation will indeed survive the controversy — but with yet greater scope and strength of meaning and with accommodation for and acceptance of the earth's age in harmony with continuing scientific investigation and observation.

The discussion that follows — on the Doctrine of Creation and its relation to the physical sciences that bear on the age of the earth — is based on the historical fact that Christian theology (man's fallible intellectualized ideas about God) is continually changing and emerging. No one can stay this process.

Man — who is fallible, not superhuman or omniscient — does not possess an absolute mandate from God to determine which theological doctrines will or will not change. Therefore, man must accept the principle that any one tenet is subject to change:

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Man's understanding of God's truth is progressive. "The path of the just is as the shining light, that shineth more and more unto the perfect day." . . . We surely should know more of God's will and purpose than did righteous men of earlier ages. And in days to come we should rightly expect further unfolding of Bible truth.

While we accept the Bible and the Bible only as our rule of faith and practice, we clearly recognize that we do not understand perfectly all truth which God would have His children know today.³

A thoughtful person will undoubtedly concur with Bernard Ramm's observation:

Evangelical Christianity of today owes to science a great debt in setting us free from the superstitious, the magical, the animistic, and the grotesque and has helped in the purification of our theology, our exegesis, and our spiritual life. *Whoever doubts this . . . has not made himself acquainted with the history of these matters.*⁴

Alfred North Whitehead likewise observed:

Theology itself exhibits exactly the same character of gradual development, arising from an aspect of conflict between its own proper ideas. This fact is a commonplace to theologians, but is often obscured in the stress of controversy.⁵

And Wernher von Braun also contributed to these thoughts when he wrote that he believes with all his heart that religion, like science, is growing and changing in the light of further revelations by God — adding that he knew of no comment Christ ever made on scientific work, yet Christ said, "Ye shall know the truth, and the truth shall make you free" (John 8:32). Von Braun concluded his statement by expressing the belief that were Christ among us today he would encourage scientific research as modern man's most noble striving to comprehend and admire his Father's handiwork.⁶

That theology can and must advance in harmony with the advances in understanding the physical world seems implied in a statement by Raymond F. Cottrell that beyond the elementary knowledge of the Bible, which anyone with a sincere intent can understand, there is "*an almost infinite revelation of truth sufficient in*

scope and depth to tax even the greatest of intellects for a lifetime” (emphasis supplied).⁷

II

Langdon Gilkey alludes to the tensions between theology and science as follows:

In the recent theological past, the massive influence of science on the character and status of theological talk has hardly been a popular point to emphasize. Theology has barely been prepared to admit the influence of philosophy on its understanding of religious truths, much less that of science. . . . The most important change in the understanding of religious truth in the last centuries — a change that still dominates our thought today — has been caused more by the work of science than by any other factor, religious or cultural.⁸

49 These tensions, forerunners of doctrinal change, can be understood better if a few examples of typical fundamentalist thrusts at scientists and the new conservatives are set forth, along with their targets’ reactions.⁹

“*The Bible never contradicts ‘true science.’*” This dictum is used by many to counter scientific evidence threatening their opposing views on a subject. It is a paradoxical position, for churchmen accept similarly reliable methods of scientific research and technology in other areas, such as nutrition, medicine, communication, and transportation. Carried to its ultimate, the expression *true science* implies that scientists practice *false science* — which, in the words of Ramm, makes the statement “a pious dictum in need of severe qualification.”¹⁰

“*Scientists keep changing their minds.*” This charge is used to cast doubt on scientists’ tentative and changing views within the normal process of their scientific methodology. Wernher von Braun reasserted scientific method when he wrote that a scientist who discovers a new bit of knowledge does not tear down his model of reality, but merely changes it to agree with a new set of experiences. By so doing, the scientist admits he has no claim on ultimate truth. His laws are simply observations of reality.¹¹

“*The data are not all in.*” When churchmen use this dictum, it is intended to delay laymen in arriving at conclusions that may be in favor of the scientists. They do not understand that the scientific methodology does not produce absolutes; hence all of the data are never in. Scientific progress is dependent on hypotheses, theories, probabilities, and so on. If we had waited for all the data — we would not have reached the moon; we would not have submitted to recent surgery; and we would not have come to believe in God. It is doubtful that churchmen would approve a delay in arriving at a belief in God until all the data on him are in.

“*Science has not interpreted the evidence correctly.*” Some make this accusation when their literal scientific interpretations of the Bible do not square with the

findings of the sciences. Even though the Bible is infallible, they seem to forget that an infallible Bible does not assure that the method of interpretation is proper — nor that the interpreter is infallible (an impossibility even though the interpreter is under inspiration). If one doubts this statement, then one raises the inspired interpreter to a perfection that was in Christ alone. If churchmen were as well grounded in hermeneutics as scientists are grounded in scientific methodology, churchmen would find little fault with scientific conclusions.¹²

“Scientific age-dating methods are unreliable.” This accusation is groundless within the state-of-the-art of scientific methodology and understanding. Often arguments against these methods are made by utilizing examples of dating methods which vary widely, but without mentioning those which are more sophisticated and accurate. Scientists remind churchmen that there are many new and highly developed techniques in age dating that can be utilized in combination to corroborate findings within a credible time-span.¹³

“An old-earth age destroys the biblical day of rest concept.” I believe that Moses’ inspired motive for recording Genesis was most probably religious, not scientific; that his method was mythological, not literal; and that one of his primary concerns in recording the Creative Event was to take into consideration the Sabbath that already existed when he wrote. As I have used “mythological,” it does not mean *fantasy* but *religious truth*. As Gilkey states:

We can say that creation is “like” some process or event in our experience, only if at the same time we assert the deep way in which it is “unlike” that process. Thus because what God is and does transcends the finite experience with which we are familiar, all theological ideas must use symbols or analogies, [which] we shall . . . call “myths,” to describe God and His acts.¹⁴

Paradoxically, a myth can only be true as a *religious* affirmation, if it is untrue as a literal description of fact. As literal truths, myths are “prescientific,” and must be discarded — but it is precisely at this point that they have no relevance for religion.¹⁵

Whether a person accepts the religious meaning of Genesis via the literal or the mythological method, or in combination, the message of salvation is the same in both — the age of the earth does not pertain to the biblical day of rest. It is considered relevant only by those who use the young-earth age for circular reasoning in support of the theologies they have developed. That is, a young earth will counter the evolution theory, support a literal understanding of the Genesis creation narrative, and support the Sabbath as derived literally from the Genesis narrative. This type of circular reasoning is really a religious syndrome, each element being used to support the overall theology — when actually the age of the earth, the evolution theory, and the Sabbath can and should stand on their own merits.¹⁶

“An old-earth age will support the evolution theory.” This charge — used by

some (in circular reasoning again) to get support from laymen who have been indoctrinated with the theory that man ascended from “brutes” — is an “abhorrent” notion a young earth would rule out. If those who use this charge would read, try to understand, and utilize the data being made available by paleontologists on discontinuities in the fossil records, they would have a more credible defense against the evolution theory, and still would be able to accept the old-earth age.

The foregoing examples, indicative of the harsh nature of the controversy, cause one to wonder what brought about such thrusts and exchanges. Generally, these attitudes have their roots in fundamentalism per se. And, not surprisingly, fundamentalism has borne the brunt of many unkind thrusts, such as the label “a religious phenomenon,” “a queer doctrine,” and the like — several church organizations being the targets.¹⁷

Fundamentalism as a religious entity was born about a hundred years ago — although germination started about four hundred years before that, in orthodoxy as a countermovement against the then-modern science of Copernicus and Galileo. Later, fundamentalism moved against liberalism, which was then adopting literary and historical biblical criticism, leaning toward scientism, and accepting the new geology. These and other “extreme heresies” were so threatening and alarming that the ultraconservative wing of orthodoxy took every means to oppose them.

Among other things, this opposition assumed a form of crass literalism in biblical interpretation. With the resulting development of a myriad of detailed doctrines necessary to counter each real and imagined threat, eventually almost all flexibility in religious thinking was crowded out. This swing toward the extreme right brought about theological positions aptly described by Ramm thus: “It is possible not only to have slack theological views, but to have views far more rigid than Scripture itself.”

Extreme literalism overlooked much biblical truth conveyed symbolically, parabolically, typically, poetically, and so on. Since fundamentalism of that era had no understanding of modern hermeneutics, and deliberately avoided early concepts of hermeneutics, its interpretations took strange positions. The same biblical passages, for example, might be interpreted literally in one fundamentalist church and allegorically in another — with no clear justification for their differences other than to keep interpretation in line with and in support of theologies each had previously developed.

It can be understood, therefore, why fundamentalism has always been irritated with science. But, says Ramm —

Hyperorthodoxy [fundamentalism] does not believe its platform "to the hilt." . . . It is willing to retain faith in the Bible no matter what the scientists say. But would it really believe the Bible if at *every* point the Bible and science conflicted? If the differences between the sciences and the Bible were to grow to a very large number and were of the most serious nature, would it retain faith in Scripture? True, we may believe *some* of the Bible "in spite of" science, but certainly the situation would change if we believed *all* of the Bible in spite of science. That is to say, the hyperorthodox have made a virtue of disagreeing with science, and have not set any sort of limits as to how serious the divergences with science may go before they must rethink their position. Their guiding principle cannot be extended without making their entire position indefensible or simply absurd.¹⁸

Many young thinkers of today's intellectual age are asking penetrating questions on scientific and theological issues, seeking credible answers, and perceiving reasons to believe that fundamentalists can reconcile their thinking with that of the scientists without changing the essence of their salvation theology. Could it be that these thoughtful Christians — who might be called the "new conservatives" — may contribute to sounder thinking and stronger faith within Christianity as well as to improving relationships and witnessing effectively outside Christianity?

III

The biblical Doctrine of Creation is surely one of the most profound religious concepts in Christendom, and in it should be found a solution to the age-of-the-earth controversy. With this possibility in mind, I will mention briefly several major aspects bearing on such a solution.

AGE-DATING PROBLEMS IN GENEALOGICAL TIME

The 6,000-year age-of-the-earth theory is arrived at by summing up biblical genealogies that in themselves present many obvious and subtle problems. To arrive at a credible earth-age by this method, one has to determine, first of all, if the Genesis narrative is so structured that the method can be utilized. This means that, for dating purposes only, the narrative must:

- 1/ Evidence unquestioned and continuous family trees;
- 2/ Be capable of being understood in terms of today;
- 3/ Fit into established historical dates and events; and
- 4/ Contain no mythological numbering systems that cannot be explained satisfactorily.

If any one of the foregoing criteria are lacking, the genealogical method of calculating the earth's age cannot be considered of scientific value. Some of the vast number of problems involved in this method of age dating are indicated in a few representative examples in subsections 1, 2, and 3.

Sarna points out:

The literalist [extreme] approach to Scripture cannot stand the test of critical scholarly examination. Literalism involves a fundamental misconception of the mental processes of biblical man and ignorance of his modes of self-expression. It thus misrepresents the purport of the narrative, obscures the meaningful and enduring in it, and destroys its relevancy. At the same time, literalism must of necessity become the victim of hopeless inconsistency.¹⁹

This "inconsistency" is very real and can be seen in two examples. One position is that "we take the Bible in its entirety, believing it not merely *contains* [emphasis in text] the word of God, but *is* [emphasis in text] the word of God." In a following sentence from the same source, another affirmation revealing a decided departure from the "*contains*" and "*is*" concept reads: "Its [the Bible's] truths, revealed, are 'given by inspiration of God,' . . . yet are *couched* [my emphasis] in the words of men."²⁰

Biblical writers often had more profound thoughts in mind than those which seem "most natural" to the eyes and thinking of the late twentieth-century reader. There is profound and wise counsel in Cottrell's words when he cautions, "We shall give each [Bible] writer an opportunity to tell us what he means, by what he wrote," and adds, "We are all prone, perhaps more often than we realize, to read our own preconceived opinions into the words of Holy Writ, unaware, betimes, that the inspired writer never intended to say what we construe his words to mean."²¹ The serious student of theology is keenly aware that to understand difficult passages of Scripture often requires more than the approach of the literal method. He frequently requires the ultimate in the art and science of hermeneutics to penetrate and understand their messages.

To return to the main line of thought: There is the question as to whether the biblical numbers in the patriarchal and tribal periods are intended to be schematized and rhetorical, rather than literal. Experts say a close study of the year numbers reveals a combination of the sexagesimal (sixty-based) system that prevailed in Mesopotamia with the decimal system used in Egypt, with the occasional addition of the sacred number seven.

In response to my inquiries on the extent of literal and mythological biblical interpretation methods used throughout Hebrew history, two noted Hebrew professors and authors provided interesting information.

According to Heschel, the literal understanding of Genesis extends into antiquity, and (probably surprising to many) the mythological meaning is not something new, for it can be traced back into ancient history to the Hellenistic times.²²

Sarna indicated that the literal approach to Genesis was certainly held by many

Hebrews in the past and still finds adherents in some orthodox circles.²³ On the other hand, he observed, there is evidence of a nonliteral interpretation quite early in the history of Hebrew exegesis. The question of whether the narrative was taken literally in biblical times, he noted, is very complicated, because it involves a detailed examination of the thought processes of biblical man and his manner of self-expression. Perhaps the most important observation Sarna made, and probably a provocative one, is that the distinction between literal and nonliteral interpretation is a Western notion and not entirely applicable to biblical culture.

Despite all this, it appears that the centuries-old methods of literal and mythological interpretations offer no problems in presenting the religious views of the Bible, but that neither one holds any potential for arriving at a credible age of the earth — simply because of the vagaries of literalism and the inherent content and structure of mythology.

2/ HISTORICAL PROBLEMS

In discussing the problems of biblical genealogies of the patriarchal period, Sarna says: "It is one thing to speak of the Patriarchal Age, quite another to determine the exact period into which it fits. No external sources have as yet been uncovered that refer by name to any of the patriarchs or to any personages associated with them. Without such synchronistic controls, we have solely the biblical data to fall back on, and here, unfortunately, the problems are thoroughly complex."

He makes the well-known point that the length of the time covered by the patriarchal period can be calculated very simply, but adds that complications arise when it is attempted to fit this period into the framework of history. He then states that calculations according to years and according to generations cannot be satisfactorily resolved. "In other words," he continues, "the patriarchal chronologies constitute paradigmatic, rather than pragmatic, history."²⁴

Commenting on the tribal period, Sarna identifies several genealogical problems, one being "the census taken one year after the Exodus shows that in three generations Manasseh had grown from a single individual to a tribe that could count 32,200 males over the age of twenty."²⁵

Another author, Henricus Renckens, commenting on the age of the earth, says that it is no longer possible to suppose the existence of a connecting thread between Israel and the events of the creation. He says further, "If there is one idea to which we must say goodbye once and for all, it is that of the traditional period of four thousand years between Adam and Christ."²⁶

At this point it is interesting to note an indication of evolving theology in one

recent seven-year span. A Bible commentary published in 1953, in discussing the earth's age, states: "The figure 6,000 is undoubtedly a rough approximation of the time from creation, as based on the Hebrew patriarchal chronology, to the present century."²⁷

And a Bible dictionary published by the same church in 1960 avoids the age-dating controversy and makes this forthright statement:

The Scriptures nowhere give us the total number of years from Creation to the Flood, from the Flood to the Exodus, or, for that matter, for the series of kings. The totals must be arrived at by the interpretation of the various figures given in the text. That is why this dictionary, although it holds to the accuracy of the account of Creation as given in Genesis, and to the substantial accuracy of whatever chronological data are furnished, does not presume dogmatically to set forth the exact date of the creation of the earth.²⁸

A close reading of the foregoing quotations is interesting in three major respects:

First, the Bible commentary placed an approximate age of 6,000 years on the earth, and the Bible dictionary (published seven years later) saw fit to avoid placing an "exact" age on the earth, for the reasons given.

Second, this suggests to me that the contributors to the dictionary were aware of major problems in attempting to arrive at a theological age of the earth or they would have given an approximate age to parallel that of the commentary, even though they could not arrive at an "exact" age.

Third, this church does have a dogmatic age of the earth of about 6,000 years placed on it by one of its revered founders — which was unexplainedly omitted.

I believe the preceding indicates that there are many, and probably insurmountable, problems in attempting to date the earth on strictly biblical data, and that there is evidence of retreat from the once vigorous stand of the young-earth adherents.

3/ THEOLOGICAL PROBLEMS

The Bible provides man information about God, Christ, and himself. Also it provides information on mankind's origin, redemption, and destiny. "[The Bible] was not given to acquaint us," in the words of Cottrell, "with such things as the facts of secular history or the natural world, except to the extent that these subordinate incidental facts are essential to its *primary purpose* [emphasis supplied]." In my opinion, the "incidental facts" are the thought vehicles that communicate the "primary purpose" and are essential from this viewpoint only.

Cottrell continues:

The Bible was never intended for use as a textbook on such subjects as history, botany, zoology, geology, or astronomy. But it is an impressive fact that Bible statements in these areas subsidiary to its principal purpose, *when rightly understood*, are in full accord with data

derived directly from *observation and experience* — in striking contrast with all other writings from the era in which the Bible was written [emphasis supplied].²⁹

Moses wrote for the Israelites in the terms which they could understand, and his writings must be understood from this viewpoint, if one can manage to get within their frame of reference.

AGE-DATING PROBLEMS IN GEOLOGIC TIME

Early methods of age-dating the earth hinged on determining the time rates for the cooling of the earth, the accumulation of sediment, and the salting of the oceans. Obviously these methods were crude; but on the basis of a steady process and perceptive observations, credible estimates of one to several billion years were reached.

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In 1896 radioactivity dating became a possibility; and by 1910, analysis of minerals containing uranium showed the earth to be extremely old. Inaccuracies were prevalent then because only a few rare and unusually rich radioactive minerals contained enough of the products of radioactivity decay (radiogenics) to allow analysis of their age by the crude methods available at that time. Around 1940 the mass spectrometer was perfected, and from then on progress in measuring geologic time was swift. By 1955, many fundamental studies needed for measuring the age of very old substances had been completed. These basic measuring techniques are given in the table shown.³⁰

Radioactive nuclei decay at constant rates regardless of temperature, pressure, chemical combination, or physical state, thereby contributing to a high degree of age-dating reliability. However, there is a certain error associated with every isotopic analysis, and a calculation is meaningful only when the radiogenic component is large compared with the error in the measurement of isotopic abundance. Measuring strontium isotope abundance by the use of the best mass spectrometers now available is accomplished with "absolute accuracy" to within a few tenths of 1 percent. In practice, one can trust a calculated age for a specimen only when the Sr-87 is as little as about 5 percent radiogenic. The results do not mean much when only 1 or 2 percent are radiogenic.

As of 1971, the earth's age has been calculated to be 3.5×10^9 years by K-40; 6.6×10^9 years by U-235; and 4.6×10^9 by meteorite-lead radioactivity (the most acceptable).³¹ These values were determined by the latest state-of-the-art techniques, and they are subject to some error. It should be obvious, however, that by no stretch of the imagination can they be discounted down to the 6,000-year theological age of the earth to which many hold.

When confronted with the reasonably reliable data given above, some would say that they do not doubt the validity of the data, but that they believe God could

have created this matter 6,000 years ago with the age characteristics built in to make the earth look older. This argument has no merit, and it indicates theological immaturity. Man's study of God's handiwork would be precluded, because man could not distinguish between "real" and "illusory" facts. Such a manipulation would amount to deception — an attribute foreign to the character of God.

IV

The Bible opens with the words "In the beginning God created" — an affirmation of a religious faith so profound that it is beyond total human comprehension. Yet Moses, under inspiration of God, was able to record for his people, and for all mankind, a narrative about The Creation in words anyone can understand. It can be said without qualification that *the Genesis narrative loses none of its everlasting importance for salvation when it is read and understood in its genuine literal sense.*

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But beyond this elementary knowledge that even a child can comprehend, as pointed out previously, there is an almost infinite revelation of meaning and truth sufficient in scope and depth to tax even the greatest intellects for a lifetime. The existence of this reservoir of untapped revelation is acknowledged by all churches — but often they do little to reveal it, for fear their own theologies will be upset. Carl F. H. Henry stated:

An evangelical who erodes all his energies contending for the inerrancy of the Bible and neglects to unshave its revelational content has, to be sure, a warped sense of evangelical duty.³²

For the purpose of reconciling adverse attitudes and the sciences, a proper place to start using the revelational content of the Bible is with the Doctrine of Creation.

New conservatives have determined to their satisfaction that, to biblical man —

- 1/ The idea of creation was primarily a relationship with God — not an event;
- 2/ The narrative of creation, therefore, is religious — not scientific;
- 3/ The biblical account of creation concerns the "why" — not the "how"; and
- 4/ In the idea of creation is the answer to the religious question — what is the meaning of man's life and what is man's destiny?

As Gilkey says:

The idea of creation was a "religious" rather than a scientific or metaphysical idea, because it provided an answer to one of the fundamental religious questions of man's life, namely, the question of the ultimate meaning of his life as a contingent, temporal being set in the wider context of nature and of history.³³

Creation's deeper meaning is to be understood in terms of divine purpose, not in the simplistic literal terms of its conveyance. As Gilkey comments further, if we

are to understand *why* it happened, we may have to relinquish an explanation of *how* it happened — and indeed to transcend this notion. For a dimension of mystery must be left beyond our structural understanding if freedom is to be a real factor in our human life.³⁴

With this view of The Creation, the new conservatives have complete freedom for scientific investigation without fear of clashes with their personal religion, although clashes with institutional religion may continue. And what is most important is that this view is not an artificial device formulated to enable others to “get along with” the sciences — it is the most likely view biblical man had of The Creation.

Traditional biblical literalists run into trouble when trying to reconcile their theological views with cosmological views on “time.” For them “In the beginning God created” often means a full-blown permanent creation that does not square with the creation that contemporary sciences observe. God created not only *at the beginning* of time, but also *in* time. A basic problem for theologians is to express the *relation of eternity* to time, to creation, without losing touch with reality in the natural world. This cannot be done from a literalist point of view, but must be accomplished mythologically. As we have seen, a myth in theology is a secular narrative about a transcendent God; it sets forth a theological truth, not fantasy, and it speaks of eternity in the language of time.

An acceptable Doctrine of Creation is, first of all, just a doctrine — a fallible, intellectualized principle taught by its adherents — and no different structurally from other principles, whether they be social, political, economic, or scientific. But, a doctrine must present a theology about God that makes religious, philosophical, and mythological sense, or it has little value. As I have attempted to point out, literalism’s theology does not adequately meet these requirements. It should be rethought and restated, therefore, to harmonize with theological concepts and observable facts.

Three Doctrine of Creation statements follow to help put into perspective the points previously made.

1/ A modern Hebrew expression of the Doctrine of Creation, in the words of Sarna, reads:

The Bible opens with the account of Creation, not so much because its primary purpose is to describe the process of cosmogony, nor because its chief concern is with the nature of the physical world or the origin and constitution of matter. Genesis is but a prologue to the historical drama that unfolds itself in the ensuing pages of the Bible. It proclaims, loudly and unambiguously, the absolute subordination of all creation to the supreme Creator who thus can make use of the forces of nature to fulfill His mighty deeds in history. It asserts unequivocally that the basic truth of all history is that the world is under the undivided and inescapable sovereignty of God.³⁵

2/ A Protestant fundamentalist expression of the Doctrine of Creation reads:

The word "creation" in its broadest sense implies the formation by the Creator, or God Himself, of the universe, including our world and all living things in it. However, the Creation narrative (Genesis 1 and 2) is concerned primarily with the bringing into existence of this earth, the sun, the planets, and the living creatures found on the earth.³⁶

3/ Langdon Gilkey's Protestant expression of the Doctrine of Creation is one of the most meaningful I have seen. Because it is typical of the new conservative's point of view, I present it in its entirety:

The Christian doctrine of creation, therefore, expresses in theoretical language those positive religious affirmations which biblical faith in God makes in response to the mystery of the meaning and destiny of our creaturely finitude. These affirmations are: 1) That the world has come to be from the transcendent holiness and power of God, who because He is the ultimate origin is the ultimate Ruler of all created things. 2) That because of God's creative and ruling power our finite life and the events in which we live have, despite their bewildering mystery and their frequently tragic character, a meaning, a purpose, and a destiny beyond any immediate and apparent futility. 3) That man's life, and therefore *my* life, is not my own to "do with" merely as I please, but is claimed for — because it is upheld and guided by — a power and a will beyond my will. This is what the Christian means when he says, "I believe in God the Father Almighty, Maker of heaven and earth." This is what the idea of *creatio ex nihilo* is essentially "about."³⁷

It can be said with a high degree of confidence that, under the pressures of the sciences in this century, the Doctrine of Creation has been given more attention and has been involved in more controversies among the fundamentalist type of churches than any other biblical doctrine. My purpose has been to point out this fact and to suggest some solutions to the problems associated with biblical literalism in the Genesis area where the fundamentalist type of churchmen attempt to make the Bible speak scientifically.

V

How does the thrust of this essay involve the Seventh-day Adventist church? Special remarks on the application of the material to Adventist theology are not necessary here — except for one critical view of this church's attitude toward one aspect of the Ellen G. White writings, but not the writings as such. I have the highest respect for Ellen White — the person, the woman of God — and her secular and spiritual counsel, a treasury of hope and inspiration without equal. It is the implementation of her insight and counsel that causes me concern.

(It is encouraging to know that a Biblical Research Committee has been set up by the Seventh-day Adventist church to concentrate on principles of biblical interpretation.³⁸ Through its several subcommittees, including a Bible-Science subcommittee, the Research Committee is maintaining a continuous program of investigation and enunciation. Since Adventists find their authority in the Bible, it

is to be hoped that much work will be done in the field of hermeneutics to resolve many problems in biblical interpretation. If this is done properly, sound and consistent interpretation of Ellen G. White may also be forthcoming.)

A primary obstacle to Adventist acceptance of the old-earth age is found in the statements of Mrs. White in which eighteen times she uses the expression "six thousand years" as the age of the earth. Sometimes she modifies it, saying "nearly six thousand years" or "about six thousand years." Then there are fourteen places where she mentions the span of "four thousand years" stretching from creation to the time of Christ.

The value of these theological expressions as historical facts (if in this context they can be used at all) must be based on an infallible religious derivation. Ellen White has said, however: "In regard to infallibility, I have never claimed it; God alone is infallible."³⁹

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This forthright disclaimer should end the matter. But the church hesitates to accept it.

The church reasons that Mrs. White was human and could make mistakes, but she could not be considered *unreliable* in the messages she brought from God. This strange reasoning that equates *reliability* with *infallibility* in theological matters is difficult to comprehend, for there is a shade of meaning differentiating the two words. One can rightly be reliable and trustworthy, yet this does not mean that the reliable person is an infallible person.

It is one thing to bestow respect and honor on Mrs. White as a prophet, but quite something else to venerate her as an infallible prophet by a ploy with words contrary to her forthright statement denying infallibility. This kind of church theology is a disservice to her.

What is most disconcerting generally about this whole matter is the church's implicit and explicit claims that Mrs. White was able to communicate God's messages with absolute fidelity in mortal man's sinful state. Such claims elevate her to the perfection that is only in Christ. Even prophets of old, and under inspiration, had difficulty understanding God at times. Infallibility under any name — whether we substitute words like trustworthiness, inerrancy, reliability, or whatever, to imply infallibility — is impossible with mortal man, even under inspiration. That man in sin does not have pure eyes to see the truth of God as it is, and so creates theologies that are full of error, is a reminder from Emil Brunner.⁴⁰

There is no question about Mrs. White's being most respected and a high authority in her calling. But her authority (as any authority) had its limitations, being subject as it was to external influences and state-of-the-religious-thought of the period. Authorities do not always arrive at ultimate judgments, and quite often they retrench and begin again with new data.

Mrs. White's statements on the age of the earth were most authoritative for her time and her religious persuasion. It is no discredit to her that she accepted, along with other authorities of her day, the age of the earth as calculated genealogically by Archbishop James Ussher. But to perpetuate her early scientific connotations on this issue — in view of her disclaimer to infallibility and in view of modern knowledge of the earth and the universe — is to do her and her church a tragic injustice.

In *Movement of Destiny*, Froom reveals many facts behind the development of the complex Adventist religion.⁴¹ If infallibility had been an element in this development, it is difficult to understand why there were so many crises over the emerging theology and specific doctrines in those early days. But infallibility was not an element in the development of the church.

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Ellen White knew this. But some in the church do not seem to understand it. She stated in *Selected Messages* (book one, page 21): "Inspiration acts not on the man's words or his expressions but on the man himself, who, under the influence of the Holy Ghost, is imbued with thoughts. But the words receive the impress of the individual mind." She knew she was mortal, was sinful, and could not transmit God's messages in their purity; hence they were bound to contain errors. Ellen White's thinking on infallibility is aptly contained in her statement in the *Review and Herald* of December 20, 1892, page 1:

There is no excuse for any one in taking the positions that . . . all our expositions of Scripture are without an error. The fact that certain doctrines have been held as truth for many years by our people, is not proof that our ideas are infallible. Age will not make error into truth, and truth can afford to be fair. No true doctrine will lose anything by close investigation.

With such a clear statement on infallibility, I cannot help siding with Ellen White against some of her modern interpreters.

CONCLUSION

In this paper I have presented the reality in Christendom of an evolving theology which no person, group of persons, or church body has the power to check, although restraints and frustrations may occasion delay. This process is much like "time" in that it has a purpose to fulfill, and it will run its course, shining "more and more unto the perfect day." Rather than obstruct it, Christians have the obligation (as part of the Great Commission) to accelerate it.

I have presented science, despite all its limitations, as a most influential and respected associate of theology in the endeavor to arrive at ultimate truth. And I have reviewed some of the tensions between theology and science that jeopardize the harmony of the Christian church and obstruct the path of progress.

The problems of age-dating of the earth by both the genealogical method and the geological method have been examined because of their significance to the age-of-the-world controversy that needs to be resolved. The desirability of expanding the restrictive theology of literalism where it clearly interacts adversely with science has been considered as part of the overall problem.

My hope here, obviously, is to provoke thought that will help accomplish a number of good things.

The most immediate benefit to be desired is improved relationships between persons within church bodies — particularly the reduction of tensions among those many Christians involved daily with the rapidly expanding sciences of life, earth, sea, air, and space. They are reading, viewing, listening, studying, thinking, and working in these sciences. Many of their children associated with them will most probably work in the same areas eventually. It would be a disservice to the church were these persons not to be able to study, think, and operate in that world of reality without an excess of unease because of the misconcepts and misjudgments of religious associates. (It goes without saying that what applies for them is equally applicable for persons of like keen mind and tender conscience studying and working in other disciplines.)

But beyond, there is a larger gain to achieve. If unity and truth are to prevail in the Christian church at large, the notion that warfare is necessary between religion and science should be dispelled for all time. It is unthinkable that the God of revelation and theology, as persons of conscience seek to understand truth there, is other than the God of the natural world, as persons of conscience seek to understand truth there. He is the God of all knowledge — the Omniscient One.

The question that remains is whether church leaders can extend their concern to restudying tenets that are past due a searching reexamination. The church stands to gain in the process — both by the harmony that should result from reconciling scholarship in theology with that in God's physical world, and by greatly expanded and enriched understanding of the Doctrine of Creation that could open the way to a profound sense of the meaning of life.

Rethinking and restating theologies in fundamentalism has always been achieved at the price of severe struggle. But no real evil need be feared. Spiritual devoutness and intellectual honesty go hand in hand. The function of doctrine is to make a statement that squares with both Christian principle and the reality of God's creation. To seek ways to make such statements should be our continuing goal.

I close this presentation with the following pertinent quotation from Alfred North Whitehead:

It would . . . be missing the point to think that we need not trouble ourselves about the conflict between science and religion. In an intellectual age there can be no active interest which puts aside all hope of a vision of the harmony of truth. To acquiesce in discrepancy is destructive of candour, and of moral cleanliness. It belongs to the self-respect of intellect to pursue every tangle of thought to its final unravelment. If you check that impulse, you will get no religion and no science from an awakened thoughtfulness. The important question is, In what spirit are we going to face the issue? There we come to something absolutely vital.⁴²

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BASIC MEASUREMENT METHODS (see note 30)

METHOD	MATERIAL	TIME DATED	USEFUL TIME SPAN (YRS.)
carbon-14	wood, peat, charcoal	when plant died	1,000 to 50,000
	bone, shell	slightly before animal died	2,000 to 35,000
potassium-argon	mica, some whole rocks	when rock last cooled to about 300° C	100,000 and up
	hornblende, sanidine	when rock last cooled to about 500° C	10,000,000 and up
rubidium-strontium	mica	when rock last cooled to about 300° C	5,000,000 and up
	potash feldspar	when rock last cooled to about 500° C	50,000,000 and up
	whole rock	time of separation of the rock as a closed unit	100,000,000 and up
uranium-lead	zircon	when crystals formed	200,000,000 and up
uranium-238 fission	many	when rock last cooled	100,000,000 to 1,000,000,000 depending on material

Six Thousand Years?

CARL G. TULAND

65

Holy Writ leaves many questions that Christians have not been able to answer. Some of these problems will not be explained fully until the chapter of an imperfect world is closed and a new chapter is opened with no limitations on perfect knowledge. As the apostle Paul says: "Our knowledge is imperfect and our prophecy is imperfect; but when the perfect comes, the imperfect will pass away. . . . Now I know in part; then I shall understand fully, even as I have been fully understood" (1 Corinthians 13:9, 12 rsv). Ellen G. White offers a capsulation of the thought: "Those who refuse to accept and obey God's word until every objection has been removed, and there is no longer an opportunity for doubt, will never come to the light."¹

Also, we must distinguish between (*a*) imperfect understanding of a subject and (*b*) refusing to accept the evidence. In some problems of interpretation, we are inclined to oppose all views that disagree with our personal concepts, although the text may allow for several interpretations. In this respect, the first chapter of the Bible furnishes an excellent illustration. Do the first two verses of Genesis refer to the seven-day creation of our earth? Or do they apply to the creation of the whole universe, before the specific reference to our earth (verses 3-31)?

As we recognize that our convictions rest on faith in divine revelation, we ought also to acknowledge that our faith is limited by our imperfect understanding of that revelation. There is no "scientific proof" to establish our faith, and an "archaeological faith" is a poor substitute for a living and vibrant experience with God. I accept many things in Scripture as "facts of faith" although they are tenets beyond logical, historical, philosophical, or scientific backing. Nevertheless, to me they are truth — religious truth.

Other problems, also, touch on the history of man. I confess there are many of my own questions that I have not been able to answer, and I am further away

than ever from issuing any apodictic statement about them. I have discussed specifically one topic with various Adventist scholars. Since this topic is considered to be a part of biblical "chronology," it seemed reasonable to expect an answer from them — but the answer never came.

As to my personal conviction and faith in God's word, such problems as biblical chronology do not interfere with my spiritual life. But I know that many are willing to abandon their loyalty to the Bible, or the church, or the church doctrines, because of some seeming, or even actual, discrepancy.

My discussion in this essay centers on a serious chronological problem that has been difficult to solve. My concern is not so much with interpreting certain biblical records, however, as with the fact that within the church there is an attitude of establishing truth by official position statements. What if the statements should prove to be incorrect? Will this not destroy the faith of many?

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I

The age of the earth is a question often discussed by church members. A statement in a 1971 issue of the *Review and Herald* reiterates that which has been accepted by countless persons as the historical age of our planet: "Writing under inspiration, Ellen White records 18 times that this earth of ours is about 6,000 years old or that the span from creation to the present is about 6,000 years."²

According to the genealogies of Genesis 5 and 11 (upon which Archbishop James Ussher based his chronology), the earth was created 4004 B.C. — which, in turn, sets the date of the Flood at A.M. 1656, or 2348 B.C.³ The biblical record declares that the new human race developed from the three sons of Noah — Shem, Ham, and Japheth — and was divided later into many different tongues and nations (Genesis 10:1 ff.). Then followed the building of the tower of Babel and the subsequent scattering of the people over the earth (Genesis 11:1-9) — which, according to traditional biblical chronology, brings us to approximately A.M. 1824, or 2180 B.C.

Until that time — that is, between A.M. 1656 and 1824 — "throughout the earth men spoke the same language, with the same vocabulary" (Genesis 11:1 JB).⁴ Then the Lord confused the language of all the earth (verse 9). Thus, biblical records establish that, until this confusion, there was but one language for all the earth's people. This would mean that there were no differing languages until approximately 2,200 years before Christ and, by implication, no differing nations either.

But history (including biblical sources) seems to provide a completely different picture. If we disregard Egypt's prehistory period of undetermined length and begin with Old Kingdom dynasties One through Six, the dates given for that pe-

riod (as they appear in the *Seventh-day Adventist Bible Dictionary*) are 2800 to 2150 B.C.⁵

I must emphasize that this is a very conservative figure. Generally, the period of Egyptian high culture is dated from about 3000 B.C. What *is* important is the fact that Adventist sources agree that there was a great nation and an outstanding culture — (a) of a definite (Hamitic) race, (b) with a highly developed method of writing, and (c) with its own language — more than 800 years before the date stated in the Bible for the confusion of tongues and at least 650 years before the date assigned to the Flood.

In *History Begins at Sumer*, Kramer tells of a nation whose existence was hardly known less than a century ago, but whose culture is considered today the most outstanding culture of the ancient Near East.⁶ Cuneiform writing was introduced by the Sumerians about 3000 B.C. Monumental buildings, a vast literature (including textbooks for the education of administrators — with mathematical tables, grammars, etc.), and all the other factors necessary for the development of a culture that compares easily with that of Egypt, were found to exist in the Sumerian civilization 3,000 years before Christ.

At present there is no agreement among scholars as to the racial affinity of the Sumerians. They were the “black-headed people,” with short skulls, broad faces, straight noses, small mouths and lips, and short, stocky bodies. Their agglutinative language had similarities to the Turkish, Finno-Ugric, and Hungarian families. These evidences clearly indicate that there was also in Mesopotamia (at the same time as the Egyptian culture flourished) an equally outstanding civilization of another language and race — neither Hamitic nor Semitic — hundreds of years before the biblical date for the Flood or the confusion of tongues.

Additional cultures could be listed: the Akkadian, the Canaanite, and others whose history *precedes* the dates of 2348 B.C. for the Flood and 2180 B.C. for the dispersion of the people at the tower of Babel. When we consider that each nation required a long period of time in order to develop from a family group into a large national society and a high culture, the gap between dates offered by biblical tradition and history increases by several centuries.

Genesis 10 is a report of the nations that allegedly developed after the Flood. It repeats three times: “These are the sons of . . . in their lands, each with his own language, by their families, and their nations” (verses 5, 20, 31 RSV). Just when this development took place is not explained. The information given reads: “These are the families of the sons of Noah . . . and from these the nations spread abroad on the earth after the flood. Now the whole earth had one language,” or, as the Jerusalem Bible says: “Throughout the earth men spoke the same language,

with the same vocabulary" (Genesis 10:32; 11:1). These texts have always been understood to mark the beginning of the postdiluvial history of humanity.

However, not only is there a problem in reconciling the year 2180 B.C. (the dispersion from the tower of Babel) as the date when the nations with their own independent languages began to form, but difficulties also exist in connection with history after that date. It seems impossible to accommodate the nations and cultures into the very short period from the tower of Babel to the time of Abraham. Terah, Abraham's father, was born in A.M. 1878, or 2126 B.C. (according to Ussher's chronology), and Abraham himself in 1996 B.C., which fixes Abraham's calling by God (at the age of seventy-five, Genesis 14:4) at the year 1921 B.C., according to the *Seventh-day Adventist Bible Dictionary*.⁷

The dictionary goes on to describe the historico-political situation of the part of Mesopotamia (Ur of the Chaldees) in which Terah and Abraham lived and to state that in 1960 B.C. the third dynasty of Ur had already come to an end. Those who are acquainted with the history of the ancient Near East know that the records of Ur reach back into the beginning of the third millennium B.C. At any rate, Ur had gone through many centuries of cultural supremacy and had begun to decline at the time Abraham was born. The dynasties of Isin and Larsa replaced Ur as a political center of Mesopotamia. Thus, the whole history of the ancient Near East would indicate the impossibility of accommodating the rise and development of the different nations and cultures and their manifold achievements within the short period allotted to them by Ussher's interpretation of the biblical records.

II

Technically or historically, the problem is of a multiple nature. Projecting backward, we find that there were different nations and races with outstanding cultures at least 700 years before the date given in the Bible for the Flood. Several centuries would have to be added to allow for the development of such groups into nations and for the tremendous achievements for which these nations are known.

Thus, contrary to Ussher's chronology, there were different languages approximately a millennium *before* the tower of Babel (Semitic, Hamitic, and even other language families), although the origin of all the different languages is attributed to the descendants of Noah *after* the dispersion in 2180 B.C.

Therefore, if we attempt to project the history of the nations mentioned in Genesis 10 *forward* into the period from the dispersion in 2180 B.C. onward, then we face (in addition to the language factor and their existence as nations many centuries *before* the dates ascribed by the Bible) the impossibility of accommo-

dating them in the extremely limited time from the tower of Babel to the appearance of Abraham — a span of only 250 years. The reality of such known historical dates is recognized in the *Seventh-day Adventist Bible Dictionary*, but it is difficult to reconcile the dates with biblical data if we adhere to Ussher's chronology.

How old is the earth? By consulting the Septuagint, we could add another 1,000 to Ussher's 6,000 years. But that will hardly solve the problem.

In recent years I attended a summer session at Andrews University. During class one day (in the presence of approximately eighty persons, many of them overseas missionaries), the question was raised about the age of the earth. It was evident that some class members were greatly disturbed and expected an answer that would satisfy all aspects of their inquiry — religious, historical, archaeological, spiritual, intellectual.

69 What they received instead was an authoritative statement that left them without an answer. The instructor, whom I hold in great esteem, answered the question by saying (I quote verbatim): "Mrs. White has repeatedly stated that the age of the earth is 6,000 years. It means that either it is 6,000 years or that Mrs. White was not inspired." With these words, the instructor, for the sake of supplying a "definitive" answer, risked Ellen White's authority and inspiration — a position that seems precarious.

I must emphasize again that this study is not to be construed as disbelief in the Bible on my part. I am able to believe in the Scriptures, even though there are things that to my finite mind are not clear and are even contradictory. Such situations have served to make me humble and to prevent me from making final statements regarding certain issues of biblical interpretation.

My concern here, rather, is with the effect on individuals, and on the church as a whole, of pronouncements made by prominent Adventists.

Adventist church members have been brought up to accept many declarations by church leaders as authoritative. To many, even slight changes of interpretation often are considered tantamount to a change of teachings, to "abandoning the platform" or denying "the blueprint" of divine truth. No doubt church leaders are aware of such dangers and are conscious, too, that these dangers are more obvious in today's time of revolutionary developments within religion. Authoritative declarations that can eventually be disproved, or attempts to support truth by doubtful arguments, can only cause perplexity and confusion.

Seventh-day Adventists cannot limit the age of the earth or of the universe to 6,000 years as some do. In passing, we should remind ourselves that, according to Ellen White, Lucifer at the time of his rebellion hoped to carry with him existing *worlds* in a universe of which our planet was merely a small speck.⁸

To those who insist that their views represent the final and absolute truth I say: Only if we can harmonize what is called *biblical chronology* of the prediluvial and postdiluvial world with the ancient Near East *historical records* (as they also appear in the *Seventh-day Adventist Bible Dictionary*) between approximately 3000 and 1800 B.C. can we hope for a workable basis to discuss the overall problem intelligently.

In my interactions with fellow Christians I have found that to admit that Adventists are fallible does not weaken the trust of these persons. To acknowledge that there are problems in the Bible for which Adventists (as others) have no solutions does not weaken faith. On the contrary, such an admission may strengthen confidence in the honesty of spiritual leaders and may offer challenge for intensive study of the Bible and other pertinent fields of knowledge.

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Needed—Constructive Adventist Theology

WILLIAM G. JOHNSON

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This paper argues two theses: (*a*) that the Seventh-day Adventist church has a pressing need for constructive theology; and (*b*) that such constructive theology will be most helpful to the church when it emerges as the product of *cooperative* (in the sense of interdisciplinary) and *integrated* endeavor. Let us take up each matter in turn.

I

To many in the church, the first thesis will be self-evident. Yet, clearly, to a number (perhaps the majority) it will be a cause for misgivings. This is because the term *constructive theology* may evoke thoughts of speculative ideas that would inevitably lead to a diluting of distinctive doctrines and perhaps eventually to removal of “landmarks.”

But if that is so, the need such persons might feel would be for *doctrines* rather than for theology. Since the doctrines of the church were established in a previous generation, to these persons the need would be not for theologians but for preservers of the tradition. That is, the Adventist preserver of religious tradition may be a memorizer of Scripture and Ellen G. White writings — one who can pull an “appropriate” saying out of the acknowledged bag to meet any question — rather than a constructive thinker.

Therefore, it seems necessary to set forth at least a brief justification of my first thesis — that the Seventh-day Adventist church has a pressing need for constructive theology. Three principal arguments that may be advanced arise from the nature of theology, the history of the Seventh-day Adventist church, and the course of contemporary Adventist practice.

Anselm's definition of theology is "faith seeking understanding."¹ That is, theology involves the Christian believer in the endeavor to explicate the meaning of his faith. He is a *believer* (let us say he is an Adventist) — there is the "given." But he is also a *rational* creature — and there arises the need for theology. Theology is thus the effort to explain and defend his religious posture — first for himself, then for the edification of his fellow Adventists, and finally for the persuasion of non-Adventists.

The task of theology as such can never be completed. Every believer is a man of his age, and each age brings fresh questions and challenges to the faith. The "answers" for an earlier generation are important, but they cannot be carried over in toto to meet today's intellectual environment. A church that "dishes out answers" to questions that are no longer being asked, but is silent when faced with the problems of the hour, cannot claim to be true to its prophetic vocation.

Does this mean that the culture will now be allowed to dictate the direction of theology? Not at all. Theology is to be done in the confluence of three streams: *Scripture*, the *tradition*, and the *culture*. The Bible retains, and must retain, a normative place — it is Scripture.² By tradition we understand the accumulated wisdom of the church at large, arising out of Christian experience and reflection on Scripture, a particular place being given to the peculiarly Seventh-day Adventist aspect. In this tradition, then, the Ellen G. White writings and the landmark doctrines that the pioneers hammered out must be at the fore. Thus, while the Adventist cannot divest himself of his contemporaneity as he comes to the task of theology, the impingement of Scripture and the Adventist tradition temper the impact of the culture on his work.

It may be helpful to point the way in which the Adventist thinker is to be a man of his time, yet not bound by his time. The past century and a quarter have seen vast changes in the world, not only in terms of technological achievements, but more importantly in terms of man's view of God, the cosmos, and self. I mention only three figures whose writings have profoundly influenced our generation: Darwin, Feuerbach, and Freud.

Faced with the changed *Weltanschauung* that has come about as a result of the hypotheses of these men, the Adventist has only two courses from which to choose. On the one hand, he may attempt to reprimarize nineteenth-century Adventist theology, pretending to himself (and to others) that Darwin and company never existed. On the other hand, he may face squarely the challenge to his faith which their hypotheses have brought.

The former position is the easier, but it is the way of obsolescence. It is one thing to be able to prove to your neighbor that Saturday is the Sabbath — but

what if that neighbor no longer cares about *any* day of worship? What if his response to a biblical approach is a shrug of the shoulders and a so-what attitude? Again, suppose that the seemingly inexorable drift of the culture is toward the wholly secular, the denial of the supernatural. Poised midway between the twin poles of Scripture and tradition, the Adventist may find himself, at least at this point, a man apart from his age — even as did the first Christians.³

2/ THE HISTORY OF ADVENTIST THEOLOGY

Adventist theology to this point has been primarily concerned with apologetics and polemics.⁴ It was probably a necessary phase as we sought to establish our identity, our distinctive place in Christendom. But that is not our greatest need today. Now we need constructive theology rather than debate.

Consider the two preeminent doctrines that gave rise to the official name of the church: Seventh-day Adventist.

For more than a century the church has been concerned about arguing for the Sabbath vis-a-vis Sunday: the issue has been *which* day is the day for Christian worship. But where, in all our concentration on the Sabbath, has there been produced a work on the *theology* of the Sabbath — on its beauty in itself, on its *Christian* significance? The sad truth is that one has to go to a Jewish thinker to find a work in depth on this topic.⁵ Surely, of all people, Adventists should be able to write a theology of the Sabbath! And, as more and more people “outside” seem less concerned about *which* day and more inclined to pose the question of *why any* day, the need for such theology is daily more urgent.

The same line of reasoning can apply to the Second Advent. Adventists have been more concerned with a historical focus than with a distinctively *theological* endeavor. Yet there has been a tremendous upsurge in apocalyptic thought, not only in a secularized context (e.g., the ecology crisis), but in scholarly interest in the New Testament apocalyptic. Whereas a number of biblical scholars have broken the image of apocalypticists as wild-eyed eccentrics concerned with arcane numerics, some Adventists seem half-ashamed of their apocalyptic roots.

What I mean is this: Not only in the secularized context but in the field of biblical scholarship, Adventists have much to contribute. Surely no one can grasp biblical apocalypticism like the Adventist! So he *can* and *should* be heard from. But again, his contribution should be more than mere restatement of Scripture or tradition if he is to command a hearing by his contemporaries.

3/ CONTEMPORARY ADVENTIST PRACTICE

The point here is simply that, whether or not one considers theology to be a bane or a blessing, in fact every Adventist is to some extent involved in doing the-

ology. Whether or not we care to admit it, constructive theology is being done. So the issue really is not *whether*, but *what sort*. Will it be good or bad theology?

A visit to an Amish community is an interesting experience — and a sobering one. When one observes the quaint dress styles, the horse-drawn black buggies, the lanterns, and the horse-drawn plows, one has an eerie feeling of stepping back into the past. Here is a community that has chosen deliberately to freeze a tradition at a point in time.

That was not the route followed by the early Christians. Constructive theology began with the Resurrection and continued apace as the young church went first to the Jews and then broke out into the Gentile world. The New Testament is witness to the theological development that accompanied the growth of the church.

Nor has the Seventh-day Adventist church chosen to follow the example of the Amish. There was *development* of theology throughout the nineteenth century; the Ellen G. White writings themselves show clear evidence of such growth. And the process did not end with the death of the “messenger.” The church today faces new questions — and old questions in new settings. Matters such as euthanasia, abortion, birth control, and military service come to mind. We can all recall Adventist preachers and writers who predicted that God would never allow man to set foot on the moon. Why have those assertions fallen silent? Why have the erstwhile proponents not claimed that the Apollo landings were part of a gigantic hoax? Obviously because, acknowledged or unacknowledged, Adventists have been engaged in the task of constructive theology.

My suggestion, therefore, is that the need for constructive Adventist theology — a need, as we have seen, springing from the nature of theology itself, from considerations of early Adventist history, and from the practice of the church — be openly acknowledged. Perhaps then we can go about the task more intelligently. And perhaps then we may produce good rather than bad theology.

But whose is such a task to be? Is it to be limited to those alone who have been “licensed” or educated to follow theological pursuits? This question leads us to the second thesis of the paper.

II

Manifestly every Adventist is in some sense a theologian. When life tumbles in — at the hour of tragedy, in suffering, in facing the loss of everything — faith is severely tested. *Then*, no matter what its roots, only a theology individually constructed for that moment will be adequate. As *each* believes, so *each* constructs theology.

But it is obvious that much more remains to be said. I have in mind *written*

works of constructive theology. Clearly, comparatively few Adventists are prepared to engage in such a task. (This is not at all to discourage individual contributions by lay persons. It will be a sorry pass if we move toward a stratification of the church into a "hierarchical" or "intellectual" caste system. Many a minister or teacher has found a penetrating theological insight from the lips of a lay believer.)

It seems necessary to consider three groupings in the church which might contribute to such a task — ministers, teachers of religion, and informed lay persons qualified for all kinds of professions (other than theology).

The task of constructive theology is forced on the pastor in two respects: in his visiting with his congregation and in his preaching. He has occasion to reflect on the issues of life and death — and of the oft-sad riddle of human existence — and he betrays his calling if he does not engage in such reflection — with prayer and searching study. He must struggle for answers that are meaningful to his flock as he meets them in their homes or as he stands before them on Sabbath morning.

It is no accident that the notable theologians of the modern period have had their roots in the pastorate.⁶ Theology that is significant emerges out of *concern* and *struggle*. Contrariwise, theology that is attempted by one isolated from the hard knocks of life may be sterile, clever, and trivial. Clearly, Adventist pastors should have a leading place in constructive Adventist theology.

What, then, of the teachers of religion? Here are persons who have even more occasion (of a different kind) for the contemplation that is essential for the theological task. This is a group that increasingly is improving in terms of academic qualifications. Rightly we should look to these academic theologians of the church. Yet, over the years, the contribution of the group has been extremely slender.

It seems undeniable that the self-image of the religion teacher has been largely responsible for this lack of theological enterprise. As long as he conceives himself to be no more than a preserver of the tradition, the criterion of excellence will be his ability to repeat ad hoc selections from Scripture and Ellen G. White. Constructive thought is more taxing. Also it implies a requisite image of the teacher on the part of educational administrators: that is, the *expectation* of creative theological work from teachers of religion and the *provision of intellectual freedom* to pursue it.

Perhaps a crisis in the teaching of religion in Adventist schools will spark a development of constructive theological endeavor. Why should religion classes be any less exciting than others? Exciting classes will come only as the religion teacher is a true academic, working at his profession: studying, thinking, and writing.

Granted, then, that the “technical” theologians of the church should take the lead in the theological endeavor. What place in constructive theology is there for the lay persons? Because doing theology becomes hair-splitting and futile if theological professionals divorce themselves from the pastorate (or the classroom), I suggest that effort toward constructive theology in our day calls for a *cooperative* interdisciplinary venture between theologians and lay persons (“lay” in the sense of “not ordained”) in other professions. Let me elaborate both the grounds and the functioning of such a venture.

The grounds of the endeavor are these. Every religious datum is at once a historical datum. As such, it is amenable to investigation by the psychologist, the sociologist, the historian, the linguist, the anthropologist, and so on (though the religious datum is *not exhausted* by such investigation, as Eliade has emphasized⁷). That is to say, the word of God comes as the word of man. Although we cannot allow theology to be collapsed into anthropology, this in no wise implies that theology will not stand to benefit by contributions from the human sciences.⁸ The very acceptance of these sciences in our culture demands that theology give them a hearing.

Let us take a simple illustration, devil possession. A recent issue of *Insight* gave three “interpretations” of a miraculous healing from the demons — from the perspectives of a church administrator, a psychiatrist, and an anthropologist.⁹ Unfortunately, there was no attempt to *integrate* these views! It is in the *theological area* where the tension was most strongly felt by the *Insight* reader — but no constructive theological effort was set forth. As I see it, such an endeavor could not fail to take account of the “explanations” from psychiatry and anthropology. It is thus that the “answers” from the past century cannot meet the needs of the “problems” of our age.

I hold that the most fruitful theological work will go forward as the professional (technical) theologians of the church sit down and dialogue with dedicated lay professionals — physicians, psychiatrists, psychologists, anthropologists, historians, sociologists, and so on. Out of such cooperative concern will come a theology truly meaningful to Adventists themselves and to those “outside”!

There are precedents for such a venture. We have long maintained the idea of the *unity* of man. Our health and medical concerns have not been excrescences on the true stem of Adventism. And in the scholarly world at large, the need is increasingly felt for interdisciplinary contacts, for a studied effort to turn the tide against the compartmentalization of man.

In the history of the people of God through the ages, it has been constructive theology that has pointed the way out of darkness and preserved the group by di-

recting it forward. When Jerusalem was ransacked and the temple was burned, when the Master was executed on a Roman cross, when the day of expectation turned into the bitter night of October 22, 1844 — in each case it was a *theological* “answer” that gave comfort, hope, and new direction.

Even so must the Seventh-day Adventist church, as it approaches the third millennium of Christian history, find hope within and defense without by the work of its constructive theologians.

NOTES AND REFERENCES

1/ *Fides quaerens intellectum. Prosligion I.*

2/ Cf. Herold D. Weiss, Are Adventists Protestants?, *SPECTRUM* 4(2):69-78 (Spring 1972).

3/ Cf. Peter Berger, *A Rumor of Angels: Modern Society and the Rediscovery of the Supernatural* (Garden City, New York: Anchor Books 1970), passim.

4/ A work such as *Questions on Doctrine* (Washington, D. C.: Review and Herald Publishing Association 1957) plainly is designed to place Adventist thought squarely in the Protestant fold — that is, it is essentially defensive in character.

Again, our leading writer, Francis D. Nichol, was indubitably an apologist, not a constructive theologian.

5/ E.g., Abraham Joshua Heschel, *The Sabbath:*

Its Meaning for Modern Man (New York: Farrar, Straus, and Young 1951).

6/ We need only mention Schleiermacher out of the past century and Karl Barth in our own.

7/ E.g., Mircea Eliade, *Shamanism: Archaic Techniques of Ecstasy*, trans. Willard R. Trask (New York: Pantheon Books for Bollingen Foundation 1964), p. xiv.

8/ The current concern with “structuralist” approaches to biblical exegesis involves the attempt to supplement traditional historically oriented exegesis (“diachronic”) with *synchronic* exegesis as made available by insights from the human sciences.

9/ Diane Crane, Demon possession: Magda's masters, *Insight* (July 11, 1972).

Ellen G. White in Adventist Theology

ROBERT L. SHULL

78

I

Increasingly the need has been expressed for a more coherent and consistent approach to the use of Ellen G. White's writings. It is a common observation that her writings are now used to support a wide variety of points of view — many of which are mutually exclusive. As Branson and Weiss have pointed out, simply to compile the Ellen White statements on a topic is inadequate, at best, for understanding her views on that topic. Yet that method is still the dominant one, both in published interpretation and in more informal types of discussion. Methods of interpretation more acceptable to scholarship need to be applied to her writings.¹

It was partly to call attention to this need and to take some steps toward meeting it that Branson and Weiss wrote their article. They proposed the application of three basic tools of interpretation to the problem of understanding as well as possible what Mrs. White really said. The steps they outlined were:

Discover the nature of Mrs. White's relationship to other authors.

Recover the social and intellectual milieu in which she lived and wrote.

Give close attention to the development of Ellen White's writings within her own lifetime, and also to the development of the church.²

Clearly, the adoption of these simple but fundamental rules would mark an important positive step in Adventist scholarship. Not only would this approach help Adventist theology to the achievement of positive results in what have heretofore been unproductive disputes over her meaning in specific passages, but it would go a long way toward restoring to the church the voice of an authentic prophet.

What would be the effect on Adventist theology if these methods were actually implemented in the study of Mrs. White? What if we were to recover her authen-

tic voice, and once again she could speak to the church unequivocally? Since her authority is so closely identified with the activity of Adventist theology, the effect on the course of theological development could be expected to be significant, complex, and problematical. For example, the degree to which Adventist theology would be able to tolerate the wide variety of points of view that now exist in it would almost certainly be greatly reduced.

Probably no one person is in a position to be fully aware of the magnitude of the diversity within Adventist theology. A serious lack of publication and other forms of communication on the part of the members of the various Adventist college religion faculties still prevents general access to the information that might allow such a picture to be pieced together. However, from my acquaintance with the orientations of the faculty members on the three California campuses, and from my conversations with several, I perceive that over the past twenty years the general level of sophistication among those doing Adventist theology has increased impressively. At least on those campuses within my experience, and presumably on most of the others, the religion departments have acquired persons well educated in the various theological orientations available to the contemporary theologian. These teachers have been applying such orientations to the achieving of insight into the message of the Seventh-day Adventist church, and to the solving of the many problems found in Adventist theology as it attempts to meet the spiritual perplexities of the age. Several are well on their way to sophisticated formulations of what seems to them to be important contributions of Adventism to Christian theology. A major consequence of this development has been the emergence of a great amount of diversity in Adventist theology.

I am well aware that a significant portion — perhaps even a majority — of Adventists still view such innovation with a high degree of suspicion. And it is no doubt true that most of the points of view now being formulated by Adventist theologians will not survive — perhaps in some cases for reasons having to do with inadequate identity with the roots of Adventism. But the problems in Adventist theology are real, not simply intellectual exercises for which we already have the answers. Any serious attempt to deal with them, therefore, whether or not the effort might strike one as headed for success or failure, should be welcomed and encouraged.

Despite the increasing sophistication of Adventist theologians, no one has yet been able, so far as I know, to go beyond the need to borrow Mrs. White's authority in order to claim legitimacy for his approach to theology. Although some will admit that Mrs. White's statements are not necessarily authoritative for their theologies, all the Adventist theologians I have heard — or heard of — feel compelled to avoid going against what they see to be a basic aspect of the "theology

of Ellen G. White.” This, of course, is not necessarily a bad limitation for Adventist theology; in fact it seems to be an obvious and natural one. But it does put Adventist theology, as it now stands, in a rather absurd position. After all, if Mrs. White’s writings can be said to say anything at all with coherence, then her work cannot be said to lend support to all of the points of view now held in Adventist theology — except perhaps in a highly subjective and indirect fashion. Some of the views *must* be disagreeing with her in some fundamental respect.

It seems clear that if Adventist theology were to adopt the suggestion to apply consistent rules of interpretation to Mrs. White’s writings, thereby reducing the ambiguity characterizing interpretation of her up to now, the absurdity of the position I have described would become all too apparent. If Adventist theology finds itself unable to forego identification with the authority of Mrs. White, the consequence will necessarily be the stifling of the variety and creativity that seems so promising and that is only now beginning to find acceptance in the church’s theological establishment.

There are many in the church, some of them theologians, who would not find this latter so exorbitant a price to pay. Some would find that benefits to the church would outweigh the harm to its theology. Others would even disagree that it would be in any way harmful. But as one who looks forward to doing theology in the Adventist tradition, I believe that price to be great enough to warrant an examination of its necessity. For reasons that seem very much in harmony with the basic thrust of Adventism, I regard the creative growth that I see occurring in Adventist theology essential to the prospects of the church for making the impact on the world that it feels itself destined to make.

There seem to be two obvious ways to avoid the narrowing of Adventist theology simply to the explication of Mrs. White’s statements concerning the major points of doctrine.

The *first way*, the exploitation of the obvious ambiguities in the White writings, is responsible for the wide variety of points of view in Adventist theology today. But the innocent use of this device is no longer possible on a large scale. Consciously to continue its use would be a piece of gross intellectual dishonesty, the price for which is unthinkable. Besides, the church has much to gain in terms of conviction and vitality from the restoration to it of the voice of an authentic prophet. The application of the tools of scholarship to the recovery of that voice seems to be a fitting and natural service Adventist theology can perform for the church as a whole.

The *other way* available to Adventist theology to avoid the narrowing of its scope is a reassessment of the meaning for theology of the fact of Mrs. White’s prophetic authority. This, in fact, is what this essay is intended to propose.

Recognition of a prophet's authority is commonly assumed to require the specific content of one's theology to conform significantly to that prophet's theological statements. But on what basis is this kind of attention demanded? Simple assertion of prophetic authority does not make the answer to that question as obvious as one might at first suppose. What, theologically speaking, *is* prophetic authority? What kind of authority does prophecy in fact carry for scholarship? What position do Mrs. White's writings really demand for themselves in the theology of the Seventh-day Adventist church? It is in the attempt to resolve these logically prior questions of evaluation that I perceive the crucial point in Adventist theology and scholarship.

Clearly, what is now necessary is a concerted effort to reexamine the role, and consequently the nature of the authority, of a prophet. The several points of view now operating in Adventist theology should each be brought to comment on a theological concept of the prophetic office. The Adventist theologian, I believe, will soon be in a position in which this task (for which he is peculiarly suited because he is acquainted with the life and work of Mrs. White) will be not only appropriate but unavoidable. He has the opportunity to achieve the firm and consistent footing necessary for this essential contribution in the next decades.

Special care, however, must be taken to maintain the positive nature of this endeavor. Defining a concept that might significantly limit the scope of prophetic authority could put the scholar in a morally suspect position. Nevertheless, it is reasonable to search for a consistent attitude toward these writings so as to allow for changes in theology to meet a changing situation. Rigorous adherence to the normal standards of intellectual honesty — along with proper regard for constructive criticism from the theological community — seems sufficient to structure the task.

II

The foregoing proposal — that Adventist theology should work for the achievement of a significant amount of freedom from the theological content of Mrs. White's writings while remaining committed to the authenticity of her prophetic role — will no doubt strike most readers of this essay as so strange as to make it difficult to imagine how it might be attempted. On the surface the proposal seems to require an essentially meaningless definition of prophetic authority. Therefore, to demonstrate that what I am proposing as a major project of Adventist theology is not necessarily doomed to self-contradiction, I now outline one possible approach to such a redefinition of prophetic authority.

The discussion that follows is not presented in a manner to warrant its acceptance as a real solution to the problem with which this essay is concerned. Since

the discussion is intended simply to illustrate that the problem can be approached in a manner that does not give up, at the outset, some basic Adventist commitments, I shall not burden it down with the research and reasoning necessary to an adequate argument of the position. But neither is the position purely hypothetical. It represents my thinking as far as I have taken it to this time. Any criticism such an approach might provoke from readers will be received with interest. But the primary assertion here is that attempt at redefinition needs to be made — not that my approach is necessarily the correct one.

One way to assess the scope of prophetic authority is to evaluate the way prophets have actually functioned. Crucial to this evaluation is the distinction that I feel must be made between the apostle and the prophet.

The *apostle's role* was that of the “founder”³ of a new religion, the mediator to his people of their basic relationship to their God. This “covenant” became the primary authority defining all religious expression within its context.

The *prophet*, on the other hand, was entirely subordinate to the authority of that original apostolic revelation of the covenant in whose context he spoke. This subordinate nature of a prophet's relationship to his covenant is a significant fact that seems a necessary component of any definition of the prophetic office. The prophet's function was to revive and intensify commitment to that covenant — never to add to it or otherwise change it. Though his authority was no less real and of no less a source than the apostle's, its purpose and hence its scope were more specific.

This schematic can be applied to both the Old and the New Testaments; and while in fact the actual history of prophetic activity does not fit it precisely, the complications are merely complications, I believe, and not contradictions. Thus one can say that Moses' role was apostolic, founding as he did the Hebrew religion and formulating the “old” covenant.⁴ Prophets during his lifetime had distinctly minor roles consisting chiefly of charismatic expressions of commitment and fervor on important occasions. We do not know of any theologically important message delivered by a prophet during Moses' lifetime.⁵ Certainly the authority of prophets was not on a level with that of Moses. Prophets did not participate in the covenant's formulation, nor could they conceivably have challenged Moses' sole authority to do so.

But as the passing of time made Moses seem more and more remote to the Jews, the prophet's importance to Israel increased. His role came to be that of combating his people's growing existential distance from the Exodus, to create in them a vivid awareness of its significance for their contemporary situation by the use of his charismatic gifts. Since the situations to which the prophets were called were sometimes of a national character, and occasionally even of historical im-

portance, what they said was sometimes written down. But at no time could the theological content of those writings be said to approach the universality that characterized the message of Moses.

The subordinate role that this schematic requires for prophecy clearly limits its significance for theology. But one might object that, as a matter of fact, some Old Testament prophets said some things of great theological significance. Although this fact is undeniable, it can be accounted for, I believe, by the peculiar tension that characterized the Old Testament prophet's relationship to his covenant. While a complete deference on his part to the authority of the Mosaic Covenant was indicated, his charismatic — hence highly existential — nature soon drove him onto the inadequacy of what was, after all, a preliminary revelation. Consequently much of what the later prophets said served to point forward to a New Covenant that would contain the final revelation more than to point backward to the Old Covenant. The theological significance of this expectation extended beyond the situations to which the prophecies in which it was contained were primarily directed, causing them to take on a universality exceeding what one might expect from the limited nature of the prophetic office.

But in the New Testament, that heretofore increasing importance of prophecy for theology was dramatically reversed. Everything the Old Testament prophet had been signifying in his stretching of the natural limitations of his role was entirely fulfilled by the Advent of Jesus and the proclamation of the New Covenant. Prophets again became relatively minor figures of merely local importance. What they said was directed almost without exception to their own local congregations.

It seems unfortunate that prophecy died out in the active life of the Christian community. Perhaps as a result of the excesses of the charismatic movements — which, in the name of a "third age" of the Spirit, claimed an authority superseding that of even the apostles — prophecy became more and more domesticated until eventually it came to be considered merely a component of the authority inherent in the increasingly powerful hierarchy. Christian prophecy never did follow its Old Testament pattern. The increasingly important role one might have expected it to assume with the passage of time never developed, in fact.

But could prophecy conceivably ever become as theologically significant in the Christian context as it became in the Mosaic context? Although this question may seem merely academic to most Christian theologians, it has vital relevance to Adventist theology's attempt to assess the significance for Adventism of an authentic Christian prophet in the recent past of the church.

Recognition of prophecy's subordinate role clearly requires a negative answer to the question. It is true that a more significant role in the church's history would be a legitimate expectation of prophecy in view of the scheme here presented. But

the truly final nature of the revelation of Christ as formulated in the New Testament makes it inconceivable that Christian prophecy's deference to apostolic revelation in matters of theology could be anything less than absolute. Since the tension that impelled the Old Testament prophet to strain the limits of his role no longer exists for the prophet in a Christian context, it is no longer possible that a prophet of the theological significance of, say, Isaiah might appear.⁶

The theologian — whose sole commitment is to the application of the apostolic revelation to the intellectual mood and difficulties of his age — need therefore have no prior commitment to take into account any specific prophet's message. The theologian's concern is with the universal Christian message. The message of the prophet — whose function is local and whose scope is limited to the situation to which he is called — need not concern the theologian significantly. Indeed, assessment of a prophet's significance for the larger Christian community can be said to be part of the theologian's proper function.

III

Must we then conclude that the prophet has no authority over the theologian? Does the scheme I have presented allow anyone who calls himself a theologian to put himself outside the scope of a prophet's authority?

Not so. Although not everyone stands in the specific situation to which any one prophet directs his message, he who does (theologian or whatever) — and who finds himself therefore under the "spell" of the prophet's charisma — is clearly obligated to yield to the authority of that prophet's message. The theologian would necessarily incorporate into his theology this presumably profound personal religious experience. But the theologian who finds himself at some distance from the situation to which the same prophet directs his message, and who consequently is not affected by the compelling power of that prophet's authority, is free to assess that prophet's ultimate contribution to Christian thought along more objective lines.

These observations have some useful implications for assessing the significance of Mrs. White's writings for Adventist theology. Theologically oriented persons who were involved in the beginnings of the Adventist church, for example, cannot be faulted from this point of view for allowing Mrs. White to dominate their theological writings. Neither, for similar reasons, can an Adventist theologian today be faulted for so using her writings if he finds himself within the situation to which she was speaking. But neither can a theologian be faulted if, according to intellectually honest criteria, he perceives himself to be working in a situation to which she was not speaking.⁷

Thus, in the scheme here developed we have a position in which a theologian

can consistently acknowledge the validity of Mrs. White's prophetic role, recognize his debt to her contribution to the beliefs and practices of his church (and thus to his own), and yet seek to find ways to move beyond her theological statements to develop a theology designed to meet the problems inherent in his own situation. While perhaps in the context of this essay the scheme raises more questions than it answers, it does demonstrate, I believe, the possibility of approaching the problem of finding limitations to the scope of Mrs. White's authority without necessarily contradicting the commitments required for an Adventist identity.

But whatever the approach adopted, the Adventist theologian in the next few years will be forced more and more to work out his position in this regard. A serious attempt must be made to achieve some sort of consensus. But in the absence of consensus the Adventist theologian will need to make his own position regarding the scope of Mrs. White's authority explicit as a foundation for whatever else he may try to say to the more general problems in Adventist — and Christian — belief. The development of the skills necessary for the introspection of our attitudes and commitments in this regard will become important, I believe, for the introspection I perceive for the church generally as it seeks to define the role it must play in the coming years.

At any rate, it is only by developing the ability to meet new problems as they appear within contemporary Christianity — with the same venturesome spirit that characterized the small band that founded the Seventh-day Adventist church — that we can hope to remain at all faithful to the "spirit of prophecy" once manifested in the activity of Ellen G. White.

NOTES AND REFERENCES

1/ Roy E. Branson and Herold D. Weiss, *Ellen G. White: A subject for Adventist scholarship*, SPECTRUM 2(4):30-33 (Autumn 1970).

2/ Ibid.

3/ The term is Walther Eichrodt's and reflects the fact that much of my analysis is based on his *Theology of the Old Testament*, 2 vols. (Philadelphia: The Westminster Press 1961), vol. 1, pp. 299 ff.

4/ Although Moses was certainly a prophet, that term is inadequate to describe his role. He was much more than a prophet.

5/ Ignore for now the problematic exception of Baalim.

6/ A possibility that I shall only note, but not dis-

cuss in this essay, is that Mrs. White may be said to merit more theological attention than I suggest here, on the ground that her function was not only to point back to the New Testament revelation but ahead to the Second Advent — indeed, to signal that event. Whether or not this is so is a proper subject for another paper.

7/ One might assert, of course, that Mrs. White was not a prophet at all — at least in the sense this essay uses the term — but an apostle. But then one should be aware of the consequences. If Mrs. White was an apostle, then she was the founder of a new religion. Her followers could not be called Christian, therefore, but, say, "Adventist," and would be on the same level as Mormons and Christian Scientists.

Hath the rain a father?
or who hath begotten the drops of dew?
Out of whose womb came the ice?
and the hoary frost of heaven,
who hath gendered it?
The waters are hid as with a stone,
and the face of the deep is frozen.

JOB 38:28-30 RSV.

Frozen

NEAL STEVENS



The Conditionality of Ellen White's Writings

STEPHEN T. HAND

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Seventh-day Adventists have always believed that prophecy is conditional. Only a cursory glance at the “if” passages of Deuteronomy 27-30 and Jeremiah 18 should be enough to validate the historical position of the church. Despite the fact that the church has been quick to point to the conditional nature of *biblical* prophecy, however, few Adventist teachers have stressed the conditionality of the prophetic pronouncements of Ellen G. White. This is particularly interesting in the light of Mrs. White's own statements.

After the re-publication in 1882 of the three earliest White books (*Experience and Views*, *A Supplement to Experience and Views*, and *Spiritual Gifts*), some early church leaders raised questions as to the “completeness” and “significance” of the views expressed in these books — in the light of subsequent writings. So in 1883 Mrs. White answered their questions personally. One question concerned a vision in which Mrs. White saw that “the time for Jesus to be in the most holy place was nearly finished” and that only a “little longer” was required before Jesus would come. To this question Mrs. White replied:

It is true that time has continued longer than we expected in the early days of this message. Our Saviour did not appear as soon as we hoped. But has the word of the Lord failed? Never! It should be remembered that *the promises and threatenings of God are alike conditional*. . . . Had Adventists, after the disappointment in 1844, held fast to their faith, and followed on unitedly in the opening providence of God, receiving the message of the third angel and in the power of the Holy Spirit proclaiming it to the world, they would have seen the salvation of their God, the Lord would have wrought mightily with their efforts, the work would have been completed, and *Christ would have come ere this* to receive His people to their reward. . . . It was not the will of God that the coming of Christ should be thus delayed. [Italics supplied.]¹

Clearly, Mrs. White explained the delay of Christ's coming in terms of conditional prophecy in this instance. But let us go further.

It is certain that Mrs. White saw the Second Coming of Jesus in vision more than once. In each of the specific accounts, she added or subtracted various details that she saw. James White published in 1858 the first volume of *Spiritual Gifts*, in which Mrs. White had written her first total view of “the great controversy between Christ and Satan.” This volume contained the vision of the “loud cry” that was to take place just before the Second Coming — the vision in which God’s people were to be delivered (that is, the Second Coming itself). The details make it certain that this was a *conditional* prophecy. It is understandable that in 1858 Mrs. White would refer to the “poor slaves” of the South, for at that time tension between the northern states and the southern states was increasing, and the country was rapidly moving toward civil war. Mrs. White said:

The last call is carried even to the poor slaves, and the pious among them, with humble expressions pour forth their songs of extravagant joy at the prospect of their happy deliverance, and their masters cannot check them; for a fear and astonishment keep them silent. Mighty miracles are wrought, the sick are healed, and signs and wonders follow the believers.²

Certainly what was described then will not take place in the forthcoming “loud cry,” although it *could have taken place* had Jesus come earlier. Delay has altered the details of prophecy.

In her vision of “the time of Jacob’s trouble,” Mrs. White saw “the saints leaving the cities and villages . . . and living in the most solitary places. Angels provided them food and water; but the wicked were suffering with hunger and thirst.”³ She also saw the wicked rushing upon the righteous, with evil angels close behind. Then in the vision of the great deliverance she saw “the pious slave rise in triumph and victory, and shake off the chains that bound him, while his wicked master was in confusion, and knew not what to do; for the wicked could not understand the words of the voice of God. Soon appeared the great white cloud. On it sat the SON of Man.”⁴ Surely this is conditional prophecy. No one at all today expects to see chained slaves on the earth at the Second Coming of Jesus. But it could have been so. Again, delay has altered the details of prophecy.

The Pacific Press published in 1884 volume four of the *Spirit of Prophecy* series — Mrs. White’s second total view of the cosmic battle between evil and good. (Had Jesus come in the manner prescribed in *Spiritual Gifts*, it should be noted, this second series would not have been necessary.) In this volume four Mrs. White again narrated a vision of the Second Coming of Jesus and the deliverance of his people, and there are certain similarities between the 1884 description and the 1858 description in *Spiritual Gifts*. The Lord still comes at midnight; the righteous are still mobbed by the wicked; but no mention is made of slaves or wicked masters. Had Christ come before 1884, the shackled slaves would have been alive to meet their deliverer, but conditions had changed.

What if Sunday laws never happen? Would that mean Mrs. White was a false prophet? Sound hermeneutics say no! Because certain details of prophecy are conditional, we cannot expect them to come to pass. Sunday laws may indeed be enacted — but not necessarily. The book of Revelation says that a *time of trouble* will surely come upon the inhabitants of the earth. The crux of the great controversy, however, is the authority of God versus the authority of man. As for the details, Mrs. White says, “The promises and threatenings of God are alike conditional.”⁵

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Keeping Human Life Human

JACK W. PROVONSHA¹

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I

A premature infant girl was delivered to Phyllis Obernauer in the back seat of the family car en route to the hospital. Once in the hospital, Mrs. Obernauer was perplexed because the hospital staff and even her obstetrician seemed to avoid her. Finally came the crushing news: the infant had mongolism,² with a major cardiac abnormality and an intestinal obstruction. The obstruction required immediate surgical intervention if the little girl were to survive. When informed of the condition, the mother looked ahead to the kind of life that lay before this infant and made a decision she didn't think herself capable of making: "Let the baby die."

The hospital staff was horrified by the mother's attitude, and her wish was not carried out. The local bureau of children's services obtained a court order and forced the intestinal surgery. Two months later, Mrs. Obernauer was presented with a live, still imperfect child and a medical and surgical bill for \$4,000. She took the infant home with great reluctance. Months later, after being tempted on several occasions to end the child's life, she was still saying, "If there were a place where I could take this child today and she would be put to sleep permanently, I would do it."³

At Johns Hopkins University Hospital in Baltimore, an almost identical birth occurred. Again, the parents refused surgery. This time, however, no court order was obtained. For fifteen days the infant survived. Its bassinet, on which hung the sign "nothing by mouth," was placed in a darkened room. Dehydration finally killed the child during a period of agony for parents, doctors, and nurses.

Which solution was the correct one?

Dr. Frank R. Ruff describes a patient who was admitted to the hospital with an inoperable bowel malignancy that had metastasized widely through his body. Nothing short of a miracle could save him, but his doctors tried. "Over his tired

protests, they gave him x-ray therapy, chemotherapy, and other costly treatments. After several weeks they sent him home mentally exhausted, financially depleted, and physically only slightly improved. He died within a week. By the time his funeral was paid for, his death had left his wife virtually penniless.”⁴

Tony Gallo’s physical and mental symptoms were finally diagnosed as uremia from chronic kidney failure. His age and hypertension ruled out a kidney transplant. He was placed on an artificial kidney machine that kept him alive but severely restricted his activities. Side effects of the dialysis were severe generalized itching and (worse, from Tony’s standpoint) impotence. The family savings were quickly dissipated, and the Gallos remortgaged the house. Finally it was all getting to Tony. “Why do I have to be around? Why do I have to live like this?” he would ask his wife daily. “I could see it if I were getting better.” Tippy Gallo could only say, “We love having you around. We want you forever.”

One day shortly after his wife’s birthday Tony decided he had had enough. “He ripped the tubes from his arm and walked out of the treatment room, leaving behind a trail of blood and shocked nurses. “His wife pleaded with him to go back on the machine, telling him it was a sin to give up. A parish priest begged him. His sons threatened to sit on his chest and legs while a nurse put him back on the machine. ‘He just told me it wasn’t worth it any more. He wanted to die,’ his wife says. Tony stuck to his decision, and a week later he was dead.”⁵ Should he have been forced back on the dialysis machine?

I received this letter from a tired old man: “What would you regard as a natural death? Or is there no such thing? . . . I am eighty-seven years old, and I have been fighting off death all my life. Two years ago I fought off death from four kinds of urinary complaints, compaction, hardening of the arteries, chronic heart disease so severe that one attack left a lesion on my heart; and now I am in a life struggle with cancer. I have been on the operating table nine times; and I have also had two minor operations. My folks are terribly opposed to my treatments. Hospitals and doctors have cost me \$16,000. . . . Because I have very little money left, they have put me under guardianship as an incompetent. Now, if I had not taken those treatments (and they said I would die if I didn’t), wouldn’t that have been the same as committing suicide? And if I committed suicide, wouldn’t I lose eternal life? I am so anxious to go home. Oh, Lord, won’t you please let up on me a little?”

An elderly mother wrote: “Dear Sons — This letter is not a request; it is an order. I have tried to live with dignity, and I want to die the same way. If my fate is such that I should become ill and unable to make a rational decision, you are hereby instructed to give the attending physician orders that he must not attempt to prolong my life by using extraordinary measures. If I am stricken with an ill-

ness that is irreversible and am unable to speak, please speak for me. I want no surgery, no cobalt, no blood transfusions, and no intravenous feedings. Instead, please see to it that the physician gives me plenty of medication and sedatives. This letter of instruction will relieve you of the burden of making the decision. It is made. I have made it. My thanks and my love. Mother.”⁶

How would you have answered the tired old man? Send him the mother’s letter to her sons perhaps?

II

It is one of the ironies of our times that a wondrous technology has thrust upon us all kinds of new questions, or raised old questions in a variety of new ways at a time of diminished capacity to answer them. For many, the old certainties have disappeared — certainties about the nature of right and wrong — along with the social institutions (the family and the church) by which they were preserved and passed along from generation to generation. Never has man been faced with such difficult questions, yet possessing so little expertise by which to wrestle with them.

I do not propose in this brief presentation to outline what all of these questions are, nor to suggest, in any detail, methods for dealing with them. I have chosen, rather, to concentrate on one issue that seems to be escaping most bioethicists who are struggling with such matters these days.

First I should point out that bioethicists display great alacrity in discovering the questions. Across the land, at meetings where such matters are considered, everyone knows what are the dilemmas with which we are faced. But when it comes to finding answers, there is a remarkable level of disarray. One reason for this is that, although all agree that we are in difficulty (even agree somewhat as to the nature of the difficulty), there is little agreement on that for which we are really looking when we seek a way out of the difficulty. What is missing, in short, is a guiding norm, or value ideal, in relation to which the terms like right and wrong are meaningful.

This is surprising — given the fact of our common cultural heritage. When pushed, men usually discover an underlying common system of values (at least in the Western world) that we all owe to our common Judeo-Christian background, and continue to owe even if not every one of us is willing to pay his debts.

In such a culture, if it is true to itself, the highest place (on a scale of earthly things we value) is given to personal human existence. Nothing in all of God’s earth is more important. In such a setting, all rules, customs, practices, statutes, or whatever, become valid and enduring precisely to the extent that they create, support, and enhance this highest value. *Moral rules, in short, serve the purpose of keeping human life human.* When Jesus said, “The Sabbath was made for man,

and not man for the Sabbath," he stated the case for all of the rules governing human behavior.

To say this is to say nothing very new or astonishing. And it is to say something regarding which there is an astonishing degree of unanimity — whether one conceives of the rules as divine revelations given to guide man toward fulfillment of the Creator's intention for him (as I do), or in terms of the atheistic evolutionist's observations concerning what behavior patterns foster the survival and development of genus *Homo*. That unanimity derives, I repeat, from our common value heritage.

When there is confusion, disagreement usually has to do with what the term *human* means in the expression "keeping human life human." It is at this point that those who consciously acknowledge their debt to their heritage will differ most sharply from those who do not. I submit that this is a point of some consequence.

In the new technology, the questions themselves arise from the premises of our common heritage. Therefore, the best possibility of dealing with them must be found within the context of these premises. Since these are essentially Judeo-Christian questions, they therefore require Judeo-Christian (which is to say biblically based) answers.

How does one define *human* as over against merely animal in such a context?

The Bible speaks of man's having been created in God's image as the unique quality of God's creation. Ellen White captures the significance of this difference in the following words (thus incidentally stating the traditional case for the Judeo-Christian or biblical world view). "Every human being, created in the image of God, is endowed with a power akin to that of the Creator — individuality, power to think and to do." Then she goes on to outline the goal of created beings as that of developing their powers as "thinkers, and not mere reflectors of other men's thought . . . masters and not slaves of circumstances."⁷

Inanimate things can be acted upon. Subhuman plant and animal life can be acted upon, and can react. Man shares with inanimate nature the capacity to be acted upon, and with subhuman life the additional capacity to react. But man shares only with God the power to act, to create, to initiate actions he did not have to initiate. Only man has this freedom, and thus only man of all earthly creatures can be held accountable, that is, can be held responsible for his actions. It is this freedom that sets man apart from lesser animals and by definition renders him human. It is this capacity which in fact underlies the highest of all his abilities — that described by the love commandment. Such freedom involves a certain level of self-consciousness, a time sense, the ability to reason abstractly, and above all the ability to select between live options.

If through disease or accident this volitional capacity is lost, man has ceased to be functionally human — in which case life's value diminishes proportionately. This altered value greatly conditions the amount of effort man would put into life preservation, particularly if that effort should logically better be expended elsewhere. For example, in competition for existence — and all that it implies both qualitatively and quantitatively — it makes moral nonsense to allow what is subhuman to take priority over human existence, or to compete with humanity in such a manner as to deprive it. If it came to such a choice, it would not be morally right to drain off technical or financial resources from children with human potential so as to satisfy the needs of functionally subhuman children. Fortunately this choice does not often face us.

It is even possible to develop a system of relative values giving guidance to our priorities in a situation of competing claims. Such a system would range upward from "thing" values at the bottom of the scale to personal values at the top, the ladder rungs in between arranged in the order of their proximity to, or resemblance to, the highest value — human personal life.

In competition, what was higher on such a scale would take priority over the lower. A "living thing," or even a potential human, would take a place subordinate to the actual human — as in the case of a fetus in competition with its mother's "human" existence. (Notice, I said not just "existence," or "life," but human existence — in the sense of my earlier definition of human.) An abortion becomes justifiable in the presence of a real threat to a relative quality of the mother's life — not merely to life itself. In a choice between two actual persons competing for the same resources — for example, a dialysis machine — qualitative factors (such as "what kind of life?" "how high up on the scale?") must enter into the equation.

Making judgments involving the value of human life as over against subhuman existence may be facilitated in other ways. It makes moral nonsense, I repeat, to waste resources that are required elsewhere to prolong meaningless existence. If the human quality of existence has disappeared, heroics become inappropriate. There comes a time when it is morally necessary and right to "pull the plug" on empty "tissue survival."

There remain questions, of course. Can a mere man (even one with an M.D. degree) always be sure that the term "meaningless" applies — and if so, precisely when? And of course there are times when this is in doubt. Ought man to play God? The fact is that there are times when he must (without developing illusions, it is to be hoped). At times one has to make such judgments whether he wishes to or not. And he must make use of all the newer technical aids (such as electroencephalography and others) when he makes judgments.

III

So far, we've probably said nothing novel or startling. But there is one element (missing in some discussions of this subject) that we might do well to consider. Let me illustrate from a recent newspaper headline: "TRIPLE TRANSPLANT DONOR — SLAYING DILEMMA." The case involved the transplant of the still beating heart of a victim of a shooting. The legal question concerned who actually killed the donor, the gunman or the transplant surgeons? In the latter case, of course, the gunman could not be charged with murder (and presumably the doctors could).

This was not the first time a donor's heart was taken while it was still pulsating (transplant people have coined a phrase "pulsatile cadaver"), and of course technically the practice has much logic going for it. If the brain is dead (as tests indicated in the case above), who cares over much that other organs are still functioning? (It is probable that the transplant surgeon cares that they *are* still functioning.)

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Who cares? I'm going to suggest that perhaps it should be the concern of all of us. Cerebral death alone cannot constitute, at least at present, the sole criterion of death — especially if we define cerebral in functional terms. Such death, at least in human terms, could occur in intrauterine and presumably "genetic" life. Thus, transplant surgeons could as easily use the hearts of institutionalized mental defectives as those of victims of gunmen. Nuremberg clearly pointed out the dangers down that road.

Donor subjects must not only *be* functionally dead (as far as their brains are concerned) — they must *mean* dead in terms of what the larger community considers evidence of death. Grandma who has suffered her final stroke and lies in an irreversible coma still *means* Grandma to her community. And until the changes can be rung on that meaning — that is, until Grandma comes to mean *corpse* — she must be granted what is due her status. And she will *mean* dead only when what it takes to provide that meaning has occurred — that is, when conventional signs of life have ceased and usually have been declared so by responsible people.

When we say something *means* something, we are referring to its symbolic value. And this is the chief point of my remarks. One of man's features that differentiates him from other animals is his capacity for utilizing symbols. This is the basis for his speech, abstract reasoning, and complex social organization. Symbols function for communication, but they also modify or reinforce attitudes. How one relates to the thing that *means* something else, the symbol, conditions his relation to the thing symbolized.

In terms of our present discussion, how one relates to what *means* human will condition in important ways one's attitudes and sensitivities toward what *is* in

fact human. Those institutionalized mental defectives *mean* human — not merely animal — even if in fact functionally they are not! Therefore we cannot exploit them as living organ banks, without endangering a crucial quality of our civilization, indeed our very humanity. The same must be said for Grandma with her cardiovascular accident — and, I might add, for unborn fetuses. If we are to protect our human sensitivities, we must be prepared also to treat with respect those symbolic individuals who are associated with the concept of humanity, but within the limits of a system of values that keeps human life human.

On that ladder scale of values ranging from inanimate things up to human persons, “symbolic humans,” I think, should be placed somewhere just below potential humans. But again, they should not be permitted to take priority over actual humans in competition for our limited resources. Mainly what symbolic humans have a right to expect from us is whatever is required to keep our human sensitivities intact. Usually that will not involve costly and elaborate heroics — rather, simple acts of care and compassion such as keep *us* human as well as provide for their ease.

The naturalist Edwin Way Teale makes an intriguing statement: “It is those who have compassion for all life who will best safeguard the life of man. Those who become aroused only when man is endangered become aroused too late.”

It seems to me that this statement could also be made to read, “It is those who have compassion for what symbolizes human life who will best safeguard the actual life of man.” For surely it is the case that if we lose such compassion, all of those fancy gadgets and devices (and the things they can do that have thrust the new questions upon us) will have become wasted effort. It will all simply cease to be worth the doing in the short as well as the long run.

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The Archimedean Principle

THOMAS J. ZWEMER

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When the king summons a consultant to find the answer to a vexing problem, the consultant lives with the problem until he finds a proper solution or until he is relieved of the task or his head. Such was the state in which Archimedes found himself when King Hiero II of Syracuse (Sicily) ordered him to determine whether the king's newly commissioned crown was made of pure gold or whether, as the king suspected, it was alloyed with base metal. Naturally, the king stipulated that the crown not be mutilated in any manner.

Archimedes ate, slept, and bathed with the problem, and its consequences were heavy on his mind. While attempting to escape this pressure in a precursor of the European health spa, Archimedes noticed that his bulk displaced the waters of his bath until some spilled over the sides. From this observation he reasoned that he could put the crown in a basin filled with water and measure the amount of water that spilled. He could then repeat the exercise with an equal weight of pure gold. If the water spilled by the crown was either less or more than that spilled by the sample of pure gold, the crown was an alloy.

Archimedes became so excited by his discovery that he jumped from his bath and rushed from the spa, sans clothing, shouting, "Eureka!"

Today when junior high school students test the truth of specific gravity and the principles of buoyancy, they are not led to a Roman bath nor are they instructed to streak, shouting Greek words. They are led to a laboratory and instructed to submerge in water various objects of known weight — and then measure the displacement. The truth about specific gravity is that the weight of the body divided by the weight of an equal bulk of water is *specific gravity*. The evidence for this truth is not found by observing the dress, gait, or vocabulary of men leaving health spas. It is found in the objective testing of the equation:

$$\text{specific gravity} = \frac{\text{weight of body}}{\text{weight of equal bulk of water}}$$

Archimedes became excited and ran when he discovered that he understood the previously existent fact of specific gravity. Obviously he did not get excited and run in order to discover the truth about specific gravity.

So it is in spiritual matters. The test of one's spiritual perception is not in charismatic ventilation nor in the more unrestrained orders of emotional expression, though some persist in the premise that feeling, or the lack of it, is evidence of one's spiritual condition. Those who are spiritually objective believe that truth exists regardless of human emotion or condition. How else could Abraham or Job or Christ prevail in faith?

"I know whom I have believed, and am persuaded [not on the basis of my present state or condition, but on the more than adequate preexisting evidence] that he is able" (2 Timothy 1:12).

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Spiritual objectivity admits to the Archimedean principle that truth can be exciting and that its revelation and acceptance can evoke emotional response. But objectivity exposes as fallacious the popular current premise that the excitement of running or shouting can generate truth.

Thus, we are led to the question: What monumental truth is yet to be discovered that will fit the description of the circumstances of many running to and fro, of angels flying through the midst of heaven, and of a loud cry going forth in the earth?

Is the relationship between the everlasting gospel and the idea of a pre-advent judgment worth getting excited about? What is the proper tension between law and gospel, between justice and mercy? Are more than catechistic answers required in order to produce an Archimedean understanding and response? Are there consequences to these questions worth our attention? Do we live with the problem as those commissioned of an omnipotent King? Or do we regard these matters of academic, casual, or episodic interest? With what are we preoccupied?

Ye shall seek me, and find me, when ye shall search for me with all your heart (Jeremiah 29:13).

Will contemporary man be excited by the effect on his redemption that awaits his discovery of the covenant relationship between the godhead and himself? Will he avail himself of its benefits? Until he perceives these, will not the running, the flying, and the shouting be vanity?

REVIEWS

The Universe Revisited

DONALD E. HALL

THE NEW CONSCIOUSNESS IN SCIENCE AND RELIGION

By Harold K. Schilling

Philadelphia: United Church Press 1973 288 pp \$7.95

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One of the most significant features of recent scientific discovery has been a basic change, yet again, in our view of the universe. But the question is not now one of vastness in space or time, or of our not being centrally located.

Concepts of void and stasis were still basic after the Copernican revolution; they remained strong well into the present century, although shaken by Hubble's discovery of the expansion of the universe. Now these assumptions have been thoroughly undermined by observations of quasars and pulsars, as well as a long list of other phenomena of which the general public is less aware. (And may the awareness never again come via the obscurity of a television or electric-toothbrush manufacturer's crass commercialization of an astronomer's word!)

Thus, not only is the space between the stars *not* empty, but a variety of interesting and important processes are taking place there, as we have discovered by learning ways to use radio waves and other tools to determine these processes. One particularly striking example is the discovery of organic molecules in gaseous nebulae such as the one in Orion. Ethyl alcohol and methylamine are only the latest in a list of molecules (including amino-acid precursors) that form in these great clouds of dust and gas.

And the planets, stars, and galaxies themselves can no longer be pictured as quiet or constant. We have seen volcanoes on Mars, and great flares on the Sun; we have heard with our radio antennas great outbursts of noise from Jupiter, and incredible galactic explosions; we have seen the deaths of stars, and signs of their births as well. Every part of the universe is now seen as continually moving, throbbing, changing.

Furthermore, the entire cosmos now presents itself as dynamically evolving. The poetic thought that this indescribably complex and changing entity called the universe acts almost as if it were alive means a great deal to the astronomer now also. For one of the classical approaches to the understanding of "life" in biology has been to point out that here "the whole is more than the sum of the parts." We are not just collections of molecules or cells, but the *relations* among the various entities are all-important. So now the physicist can also point out that a crystal of salt has remarkable properties that the individual atoms do not

possess except in potentiality, and the astronomer can marvel at how much more a galaxy is than a mere collection of stars.

All of this suggests an enrichment of our conceptions about our own place in this universe, about the importance of how we are related to other parts, both larger and smaller. May it cause in turn a further development of our apprehension of Divinity manifested in the richness of these relationships?

Professor Schilling directs our thoughts to such questions, and presents some positive answers of his own. His introductory chapters expound the possibility that qualitatively new consciousness and sensitivity are possible to modern man as he explores both scientific and religious questions. The great steps forward in modern science have been "not only additions to *what man knows* but changes in *the way he knows*, and in *the way he feels about . . . the known and unknown*" (p. 18).

The bulk of the book is divided into two parts. The first presents "Insights of the New Scientific Consciousness." Here a number of important basic scientific discoveries are discussed nonmathematically, and less for their own intrinsic interest than for their philosophical implications. The second part considers in this light "Insights of the New Religious Consciousness."

There is emphasis on "relationality," hierarchical structures of objects and phenomena, and the "depth dimension of reality." Dr. Schilling points out that this depth and structure are so rich that many physicists consider it not at all clear that nature is necessarily simple at the most basic level. Indeed, there may not even *be* any basic level; there may be no innermost nested box. The possibilities of matter, energy, life, mind, and spirit belonging to some sort of continuum are explored.

Many Adventists may find that they do not agree with all that Dr. Schilling says. But I hope that many others will enjoy the book as I have, for his thoughts are interesting and stimulating, and these are issues that need to be considered. It will add extra meaning for SPECTRUM readers to know that Dr. Schilling once taught for over a decade at Union College (Nebraska). Since that time he has been professor of physics and dean of the graduate school at Pennsylvania State University. He has continued to teach and lecture since 1968, when emeritus was added to his titles.

This book will not be fast and easy reading, but then that is not what one would want or expect when grappling with such issues. There is careful thought here by one who has been at it a long time and who is well qualified to understand both the scientific and philosophical implications. It is worth the time and effort to ponder and absorb slowly what Schilling has to say.

An Investigated Faith

MALCOLM MAXWELL

GOD IS WITH US

By Jack W. Provonsha

Washington, D. C.: Review and Herald Publishing Association 1974

157 pp paperback only \$3.50

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Both style and content mark *God Is With Us* as an excellent piece of work. The author says some very important things on such basic theological issues as the meaning of God, the nature of religious knowledge, the function of religious symbolism, the significance of God as Creator, the meaning of the Sabbath, the problem of evil and its solution, and the meaning of the Second Coming and events associated with it.

There are other books that cover somewhat the same ground, but few are written with such a clear grasp of the contemporary debate, on the one hand, and of the significant issues in the great controversy, on the other. The effort to get behind the mere statement of doctrine to its real significance makes this work unique — and successful. It is not the author's intention to deal exhaustively with every topic considered, but to share those insights he has gained from his own study and experience. In the preface he describes his book as "the confession of one man's faith. . . . But it is more than just a confession. It is also a rational investigation of that faith" (p. 5).

Basic to the author's approach is his conviction that "honest reason must ever be at work in the storehouse of belief, 'proving all things,' testing, modifying, . . . scrutinizing what is old and criticizing all new experience so that one can achieve through it all a faith to live by" (p. 7). Since man's "perception of truth . . . will always be relative and partial," because of the limitations of his experience, a "healthy openness is the only appropriate posture" in his search for truth. Furthermore, "all knowledge to some extent reflects the knower;" even "new ideas are never 'immaculately conceived.' They always have a past." Fortunately for man, "truth will arrive in time if one is honest," for "honest reason does not walk alone, in view of the fact that God is also in search of man" (pp. 25-27).

Because "human beings experience directly but a small segment of the total range of reality," and because God must make himself known within this narrow spectrum, religious symbolism takes on an especially important function. Symbols are, as it were, "windows on reality" that "point" beyond themselves to something else. It is far more important, then, to ask of a symbol, What does it mean? (to what does it point?), than to ask, What is it? Here Provonsha draws a distinction between arbitrary "signs" and those "symbols" that not only point but also share certain qualities with the reality to which they refer. It is in this setting that the Sabbath is considered. "In choosing time rather than an object in space, God selected a true symbol of Himself," for there is "something of God in the quality of time" (pp. 29, 30, 34).

Man can come to God in at least three ways — through nature, through God (where God in his mighty acts encounters man), and *through man* (for although man is but a

partial image of God, to a certain extent it is still God that is beheld in man). One truth learned by looking at man is that God is good. "It is the human capacity for integrity, kindness, and compassion that gives man access to these qualities in what is ultimately real. Some men might never know that God and His universe wear a friendly face if they had not seen the fact written on the face of some fellow human being." God has sometimes ("not often but sometimes") in view of special needs and circumstances chosen particular men through whom to work. They are chosen because they are for the moment the "best available avenues to God," and because "God loved the world and *all* the people in it, not merely the chosen few" (pp. 48, 56-57).

The "central assertion" regarding God is that he is Creator. This truth "ties everything together. Every part of the universe is in some way related to every other part through God, who is its unifying principle. There is no radical . . . separation between independent levels of reality." All things, including "those amazing continuities, the electromagnetic spectrum and the periodic table, are visions of God! Man may yet be in for many surprises in his exploration of the universe, but not in for discontinuities! What he finds will fit into what he has found — because God is *one*" (p. 62).

Further, being the Creator of all implies that God is a person. "He initiates events that do not depend on what went before. He creates *ex nihilo*, out of nothing. And to say this, is to imply that God is personal, since the free act is the highest expression of personality." The biblical message is "above all else about a God who is personal." Again, to say that "God is Creator" is to say that "He is good," for "to create is, by definition, to do something good. . . . To take Creation seriously means to discover in every material reality, whether personal or social, an object of legitimate concern" (pp. 64-65).

With God, as with nature, there is "growth, development, freedom," and, with all this, change, for there are two elements present in God: "His character, and His activity in relation to creaturely actions." Here is change in the changeless, for love (God's character) must be "acted out in the midst of change" and thus cannot be "rigid and insensitive in its application. The most loving act in one set of circumstances may not be the most loving act in quite a different one. To be loving, an action must always be appropriate to the needs of the moment" (pp. 74-75).

Miracles and other "supernatural" phenomena are dealt with in a similar way. The Bible shows God to be "*not outside* of nature as its invader, but within it as Creator and Up-holder. Nature's laws, properly understood, are divine laws . . . the appearance of the unusual signals, not the suspension of law and order, but their operation at a new dimension" (pp. 84-85). Even the familiar distinction between sacred and profane must be understood in the context of the oneness of God. "If what God does reflects His sacred character and purpose, all of creation is sacred — even the professions. There are no intrinsically secular or profane callings; there are only secular or profane men in them" — provided, of course, "the callings are related to the Creation" (p. 93).

If God is "*one*, and good," how can one account for evil? The answer involves the recognition that "God establishes goodness by allowing the alternative to have its day and thus to unmask and destroy itself." This requires that God not "interfere beyond certain limits — even if it hurts. God's ultimate will must take priority over His immediate empathetic identification with the sufferer." This is why "most of the time God keeps His hands off" and why "the innocent suffers with the guilty." No one, however, need suffer alone. "On

the cross God pulled back the curtains and showed us what was always so. God is on the cross in the world's tragedy and in every little individual share of it" (pp. 111-113). Throughout, "God is *with* us." But what about the scriptural views of God that seem to be contradictory? It is suggested that some symbols may be "inadequately drawn" and may require the clarification of further information. If in fact "Jesus is the clearest open window on God that we possess, every other window is simply obscured by darker glass" (p. 104).

The essence of sin is distrust. Both Eve and Lucifer perceived their creatureliness as "inhibition or deprivation rather than the basis of meaningful existence." In this way they called the trustworthiness of God into question, reasoning that he did not have his creatures' best interest at heart. Of course, "one who cannot trust God is left to his own resources, which is roughly what the human story has been all about" (p. 116).

As sin started in distrust of God, so also "the first step in reconciliation" is the "reestablishment of trust on the part of the creature through a demonstration of the utter dependability of the Creator — that He has the creature's best interest at heart." The gospel ("good news") concerns the fact that man's sin did not alienate God — it alienated man. The problem is, how can a person accept such good news? Here God must help us, and he does so in part by letting us "in on the action. . . . Serving others is a legitimate way to cope with feelings of meaninglessness and self-disesteem." In addition there are "symbolic aids" to faith, such as the Sabbath, tithes and offerings, baptism, and the communion meal. The most important of these aids finds its model in the Old Testament Day of Atonement and with it the New Testament "cosmic conception of the process in which Jesus is both the slain animal — the Lamb of God — *and* the high priest" (pp. 128, 130-132).

Ultimately consummated is "the atonement — first in a presence and then finally in a place" (p. 135). Belief in the Second Coming of Christ has suffered, however — first because of its long delay and then because of "changed world view that has rendered a literal event incredible to many." Here it must be recalled that the Second Coming constitutes "not a description of the time-space limitations of the one who comes (*god*) but of those of the man to whom He comes. God who is already *with* us 'comes' for man's sake, so that man can experience that fact more fully. The Second Coming is another example of the Word being made flesh, of God's communication with man on man's terms, in man's language." Also, the Second Coming makes clear once again that "things of the body — matter, energy, space, time — are not meaningless to God." Man "is taken to a place appropriate to his space-time creatureliness." God is interested "in redeeming and renovating this time-space frame that men call history — not in destroying it" (pp. 138-144). Admittedly descriptions of heaven are not quite what modern man would think of, but these descriptions are of what men in other times and places dreamed, for "all descriptions of an unexperienced reality can only project what has been experienced" (p. 152).

Such an articulate and well-reasoned presentation of Adventist thinking provides a most desirable alternative to other approaches exerting influence today. Undoubtedly the book will stimulate many questions and much discussion (it already has), but this is one of its virtues. The author's posture is wholly positive; throughout, he leaves little doubt about his own admiration for and commitment to this wonderful God who is with us. "Having God with us," he declares, "makes everything new and different," including "our own understanding about truth and about God. Whenever God, not man's projected illusions, really appears among men, He is perceived as friendly, compassionate, and gracious" (p. 156).

LETTERS

Let me . . . suggest two topics that seem worth being developed for SPECTRUM by competent scholars.

First, the sociological, historical, and political background of Ellen G. White as expressed in her writings. Some of her statements, opinions, advice, and messages seem to represent lower middle-class New England prejudice against and jealousy of upper ranks. (I gained this impression from reading about the Civil War in *Testimonies for the Church*, volume 1, pages 253 ff., and from her rather ingenuous suggestions in *The Ministry of Healing* for solving the problems of the lower classes in the early North American industrialization.)

Carl Amery, in *Die Kapitulation oder: Deutscher Katholizismus heute* [*The Capitulation or: German Catholicism Today*], which he wrote about ten years ago, promoted the term *Milieu-katholizismus*. This term, which can easily be applied to the Adventist church in both Germany and Austria (the situation differs in these countries), gives a better understanding of events and reactions that otherwise would be misunderstood or misinterpreted. Studies that would elucidate the circumstances around Mrs. White might contribute to understanding her.

Also, a topic already suggested by another reader of SPECTRUM — the illumination of the medical profession in Mrs. White's time — has scarcely been made clear yet. From random information I have here in Europe, I conclude that some astonishing items stressed as examples of her supranatural foreknowledge are, rather, really the forming of legends by the White Estate — inasmuch as Mrs. White does not have prior temporality.

What can be found in the writings of Jackson, Trall, Coles, Shew, Graham, Alcott, Horace Mann, Gunn, and others?

These names are drawn from Dores E. Robinson's *The Story of Our Health Message* [Nashville: Southern Publishing Association 1943]. What influence and extension did the ideas of Cotton Mather have? What about Sweetser and his *Mental Hygiene*? What about Henry Maudsley?

The basic principles of Ellen White's writings on health seem to me to be in close relationship to *Naturheilkunde*, a lay movement out of the late decades of the nineteenth century, continuing the ideas of the era of Romantic medicine especially in Germany. Did this movement have an influence in the United States? What about mesmerism and phrenology (against which Mrs. White spoke a warning — and surely had reason for it — at a time in the United States when it was no longer of actual interest in Europe)?

It is not too difficult for me to draw quotations out of both professional and lay medical literature of the nineteenth century here in Europe to show that much of Mrs. White's writing on medicine deals with ideas more or less commonly known to be contemporary with or antecedent to her. It would be of value to illuminate the fact of their presence in her surroundings, but such a study is practically impossible for someone outside the USA to do.

GERHARD SVRCEK-SEILER
Vienna, Austria

Tuland gives a false impression [SPECTRUM 5 (4):16-24 1973] when he tells us that the [original basis for] the noncombatant principle in the Adventist church was the sixth commandment but does not clarify the [subsequent basis determined for] this principle before World War II.

He points out, and I agree, that *kill* and *murder* are not the same. He refers to *kill-*

ing in military combat under a theocracy. However, he fails to point out New Testament texts (after theocracy) that shed light on killing in military service (e.g., John 18:36, Luke 9:56, and 1 John 4:17).

I was an instructor in the Medical Cadet Corps twenty-five years ago. We used material (prepared by Carlyle B. Haynes) making very clear the basis of the noncombatant position (not based on the sixth commandment, as I have indicated) and also making clear that "each man must seek his own way — with his God," as Tuland says.

Chapter 11 of Haynes' booklet says: "He is bound to use every means to enlighten his conscience. . . . Nevertheless it remains true that whatever a man's conscience may be and in whatever condition it is, it remains his sole moral guide to conduct. . . . It is what he himself understands and believes that must guide him."*

MILO V. ANDERSON
Pacific Union College

* *Basic Principles of Noncombatancy as Held by Seventh-day Adventists* 1950 (a mimeographed booklet prepared by Carlyle B. Haynes, secretary of the War Service Commission of Seventh-day Adventists).

I want to continue receiving SPECTRUM for at least another year, if I should live so long (I am already past my eighty-sixth birthday anniversary).

For years I have been wondering how long it will be before some wise person will use the columns of SPECTRUM to deal with such subjects as are obviously handled in the King James Version of the Bible differently from most other English versions, especially the New English Bible. There are at least two good reasons why we should regard this [latter] version as being closer to the original text in meaning than any other version. First, the people doing the translation were superior scholars in the original languages of the Bible. Second, they had access to manuscripts considerably earlier than those used by the translators of the King James Version.

I shall mention only two [passages] that have given me trouble.

First, the King James Version is the only one I have examined that speaks of the "cleansing" of the sanctuary in Daniel 8:14. Most other versions, including even the Revised Standard Version, carry the idea of *restoring* the sanctuary to the position from which it had been "cast down."

Second, the only place in the Bible, including the King James Version, where the expression *spirit of prophecy* is used is in Revelation 19:10. True, it occurs there in the Revised Standard Version; but there is no capitalization to indicate that the word "spirit" has any other than the common meaning. In most other versions — that is, English versions — that I have examined, the rendering does not indicate any special time at which another inspired prophet is to appear — but rather that everybody who testifies of Jesus has the same spirit that inspired the prophets.

HUBERT O. SWARTOUT
Thousand Oaks, California

The discussion of Genesis genealogies by Lawrence T. Geraty in SPECTRUM [volume 6, numbers 1-2, pages 5-18, 1974] provides a helpful understanding of the line-of-descent tabulations that are found in the Bible. There are some aspects of this discussion that deserve additional elaboration.

At the top of page 8 it is stated that written records of ancient civilizations "in some cases extend as far back as about 3000 B.C." Whether intended so by the author or not, the implication is that there is incontrovertible evidence for discrediting the obvious chronological implications of the numerical data given in Genesis 11. The uninformed reader could have been cautioned at this point that the 3000 B.C. stipulation is an estimate based on the current fashion for reconstructing the early development of civilization, and is not a matter of clearly attested historical record.

Eventually the reader is told on page 9

that "the earliest fixed calendrical date in human history" is 1991 B.C., plus or minus possibly ten years. The speculative nature of the current model for human history during the third millennium B.C. should be fully understood before [one proceeds on the presumption that this model] precludes the conclusions believers in the Pentateuch have reached for over 3,000 years before the appearance of modern scientific viewpoints.

On page 11 [the suggestion is] that the correct relationship of Japheth, Ham, and Shem could not be determined from 1 Chronicles without the aid of Genesis. The data in 1 Chronicles 1:5-23 seem to provide an adequate explanation of verse 4 without recourse to Genesis.

That Genesis 5 and 11 do not provide the usual genealogical table seems obvious from the inclusion of time data. In what better way could the [Genesis writer] indicate that he was not providing the usual line-of-descent tabulation that listed only the most illustrious names, or was abbreviated for mnemonic purposes. In these disputed passages of Scripture the authors (Moses, and the Holy Spirit as the primary Author) seem to have provided three significant sets of information with a minimum number of words: (a) line-of-descent data, (b) precise data on the degeneracy that occurred in the human race following the Flood, and (c) stipulation concerning the duration of two important periods in human history. The chronological stipulations would probably be even less credible to the modern mind, and would have been more susceptible to corruption by copyists and translators, if they had been presented in one concise total-span-of-years statement.

On page 13 one encounters the statement "Whatever the reason for the numbers, it cannot have been chronological." By what insight does [Geraty] have the authority to say *cannot*? One might grant him the privilege of saying "may not." On the authority with which Ellen White spoke to the church, we have been informed that "the Bible with its precious gems of truth was

not written for the scholar alone. On the contrary, it was designed for the common people; and the interpretation given by the common people, when aided by the Holy Spirit, accords best with the truth as it is in Jesus."* Dedicated readers who have sought the aid of the Holy Spirit in finding the understanding and relationships which God's Word has been provided to establish have concluded for more than three millenniums that a chronological intent is a prominent feature of Genesis 5 and 11.

If these chapters are intended to give only a conspectus of selected individual lives, why is the age at birth of the named son included? There is no specification that the next-named descendant was the firstborn son. It is highly improbable, in fact, that Noah had no sons before he was 500 years old. Furthermore, Noah and Terah probably each had more than three sons. Children born of a given individual are evidently selected for their importance in the subsequent narrative and listed in order of importance rather than in order of birth.

As for the statement "the insertion of the numbers does not change in the least the character of the Genesis genealogies" (page 13), I am constrained to ask, "How could one more clearly and more definitely specify that these disputed passages are *not* to be treated in accord with standard genealogical practice?"

Geraty relies heavily on argument from silence. The hazard in doing this needs no elaboration. The lack of a cumulative total for the data presented in Genesis 5 or 11 is not evidence that Moses considered a summation of these data to be unjustified or unintended.

The lack of specific reference to communication between Abraham and his ancestors as far back as Shem is no proof that such communication did not exist. The book of Genesis provides a highly abbreviated account. The data it does supply seem to have been presented with intent to show that Abraham was contemporary with Terah, Serug, Reu, Eber, Salah, Arphaxad, and

Shem, particularly the latter. In several comments Ellen White clearly implies, although she does not explicitly so state, that Abraham communicated with Shem (presumably before he left Chaldea).

The statement on page 15 that "the whole impression of the Abraham narrative is that the days of the Flood belong to a geological event long past and that the actors in it had died ages before" is in accord with modern viewpoints in anthropology, archaeology, and geology. But it would be difficult to argue that this statement describes the impression that has been gained by the vast majority of those who have been acquainted with the Genesis narrative since it was first written, or even by the majority of those who read it today. If one omits chapter 11, an important part of the Abraham narrative, the strongest evidence regarding a chronological setting in respect to the Flood that can be found in chapters 12-25 is silence. What more can be expected in view of the treatment with which the author begins the Abraham narrative in chapter 11?

In his conclusion Geraty states that "our present knowledge of human civilization in the ancient Near East apparently goes back (at Jericho, for instance) to the seventh millennium B.C." The speculative nature of the assumptions that underlie a presumption that there has been more than 6,000 years of human history between the Flood and the birth of Christ is only lightly alluded to by the term "apparently." In language that could scarcely be more plain, Moses (who lived 3,500 years closer than modern scholars to the early Middle Eastern civilization) indicates that the assumptions involved in this estimate may legitimately be called into question.

Those who are concerned as to how the speculations of modern antiquarians should be weighted against the apparent intent of Moses in Genesis 5 and 11 may be benefited by the last statement made in Geraty's paper (by way of footnote number 21) that "it seems clear that as yet they [scientists and archaeologists] can make no definitive estimate of this time period."

I am well aware of the apparently insuperable problems present-day understanding of radiometric age data, ancient texts, archaeological sites, and geological evidence offers to a chronology based on the most obvious intent of the first eleven chapters of Genesis. I am confident that some of these problems will be resolved before the gospel witness is completed.

But I do not expect many of them will be understood adequately until we have opportunity to talk with individuals who lived during the times in question. The best we can do at present is to find the balance between the weight of evidence, both internal and external, supporting the testimony of Scripture and the hard facts related to current speculations regarding ancient chronology. One should also find the balance between the implications and the possible consequences of retaining or rejecting the "obvious intent" of the chronological data in Genesis.

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* Ellen G. White, *Testimonies for the Church*, 9 vols. (Mountain View, California: Pacific Press Publishing Association 1948), vol. 5, p. 331.

NOTES ON CONTRIBUTORS

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DONALD E. HALL (*The Universe Revisited*) is assistant professor of physics at California State University, Sacramento, after a year of graduate study at the University of Iowa and an interim year teaching physics at the University of Colorado (Denver campus). Formerly he taught at Walla Walla College. He holds the master of arts and doctor of philosophy degrees from Stanford University (1964, 1968).

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P. EDWARD HARE (*The Age of the Earth*), who has done pioneer work in amino acid determinations in fossil materials, with implications as to their age, is engaged in research at the Geophysical Laboratory of the Carnegie Institution (Washington, D. C.). He earned the doctoral degree at California Institute of Technology in the field of geology and has published numerous papers in science journals.

WILLIAM G. JOHNSON (*Needed — Constructive Adventist Theology*) is dean of Spicer Memorial College School of Graduate Studies (Poona, India). He was born in South Australia and earned baccalaureate degrees at Avondale and Adelaide; took advanced degrees in theology at Andrews University (1966) and London University (1969); and earned the doctor of philosophy at Vanderbilt University (Nashville) in biblical studies. This first paper for *SPECTRUM* is his fiftieth published article.

WILLIAM J. KORNFIELD (*The Early-Date Genesis Man*) was visiting professor of anthropology at Wheaton College (on furlough from the Andes Evangelical Mission, of which he has been a part since 1942) at the time his article was published in *Christianity Today*. He has a doctorate in anthropology from the Universidad Catolica del Peru, where he was associate professor of anthropology 1968-72. He taught also at the Seminario Evangelico de Lima.

MALCOLM MAXWELL (*An Investigated Faith*) is professor of theology at Walla Walla College (Washington). A graduate of Pacific Union College (1956), he has the master's degree from Andrews University (1958) and the doctor of philosophy from Drew University (1968) in biblical studies (New Testament).

ARTHUR J. PETERSON (*The Doctrine of Creation*) was the primary developer of the first United States Air Force ballistic missile procurement specification relating to quality control. During his thirty-two-year career in the Air Force he served in various staff capacities developing quality control policies and procedures. He is author or coauthor of numerous Air Force quality control publications and the recipient of many awards and recognitions. He studied aeronautical and electrical engineering at the University of Washington and Oregon State College.

JACK W. PROVONSHA (*Keeping Human Life Human*), professor of philosophy of religion and Christian ethics, has been on the Loma Linda University faculty since 1958. His doctor of medicine degree was earned at the university (1953), his master of arts at Harvard University (1963), and his doctor of philosophy at Claremont Graduate School (1967). His book *God Is With Us* was published in 1974.

ROBERT L. SHULL (*Ellen G. White in Adventist Theology*) earned a bachelor of arts degree in the College of Arts and Sciences of Loma Linda University (1970) and is pursuing graduate study in philosophy at California State University, Los Angeles.

NEAL STEVENS (photograph page 86) earned a bachelor of science in fine art (photography) at Loma Linda University in the College of Arts and Sciences (1974). He is a freelance photographer living in Loma Linda, teaches at Riverside City College, and plans to complete studies for his master's degree in advertising photography. In 1973 he won first, second, and third places at the San Bernardino Friends of Photography exhibit.

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CARL G. TULAND (*Six Thousand Years?*) was born in 1901 in Berlin, where he took his early college work in modern languages and literature. He earned the master of arts at Andrews University (1950) and qualified in 1956 as a PH.D. candidate at the University

of Chicago Oriental Institute. He specialized in semitic languages, archaeology, and ancient Near Eastern history, has been active in professional organizations (including fellowship in the Royal Asiatic Society of Great Britain and Ireland), and has presented and published numerous papers.

PAULINE WICKWIRE WHITSON (*Fawn*, page 45 etching) is an artist at Three Rivers, California. She earned the bachelor of arts and the master of arts degrees at the University of California, Berkeley. *Fawn*

was done in the late 1930s when she was a student at the University of Iowa. She has exhibited and sold her work in Los Angeles, New York, and elsewhere.

THOMAS J. ZWEMER (*The Archimedean Principle*) was a Loma Linda University School of Dentistry faculty member from 1958 to 1966 and became associate dean at the dental school of the Medical College of Georgia in the fall of 1966. He earned the doctor of dental surgery from the University of Illinois and the master of science in dentistry at Northwestern University.



MOLLEURUS COUPERUS, a native of the Netherlands, began his literary activities as a foreign correspondent for a Dutch newspaper when he was eighteen. He was educated at Neanderthal Seminary (Germany), Andrews University (bachelor of arts 1927), Loma Linda University (doctor of medicine 1934), and Columbia University (dermatology specialization). He has taught at Loma Linda University since 1944, serving as chairman for dermatology in the School of Medicine since 1964. Among allied interests are missions (a short term of service in Indonesia), languages (translations from English to foreign languages), theology, and the sciences (including physical anthropology, particularly paleoanthropology). He is a fellow of the American Association of Physical Anthropologists, the American Anthropological Association, and the Royal Anthropological Institute of Great Britain. His articles have been published in both professional and lay journals. He was editor of the *Journal* for the Loma Linda University medical school alumni association (1946-50). He has spent seven years in the planning and editing of SPECTRUM.

FRITZ GUY, appointed dean of Loma Linda University College of Arts and Sciences in 1974, has been on the faculty of the college since 1961. One of his interests has been development of the program in interdisciplinary studies. He was assistant editor of the Seventh-day Adventist *Youth's Instructor* at the Review and Herald Publishing Association (1957-60); before that he was in pastoral work in southeastern California (1952-57). His degrees were earned from Loma Linda University (bachelor of arts 1952); Andrews University (master of arts 1955, bachelor of divinity 1961); and University of Chicago Divinity School (master of arts 1966, doctor of philosophy 1971). During his education and his professional career, he has written, edited, and collaborated in all aspects of publishing, having first learned the art of printing in his father's business. His articles have appeared in *Theological Studies* (Andrews University journal), *Ministry*, *Insight*, the *Seventh-day Adventist Encyclopedia*, and *The Westminster Dictionary of Church History*. He has been associate editor of SPECTRUM since its beginning.

ADA WILLIAMS TURNER, appointed by Loma Linda University in 1952 to coordinate the two-campus official publications function, developed and directed that office until fall 1974. She has planned, written, edited, designed, and produced publications and printed tools (with principal interest in the support and advancement of Adventist higher education) during most of her adult life. After graduation from Union College (1933), she worked at the Seventh-day Adventist General Conference office and then took graduate studies in English at the University of Nebraska. She was the first editor of *The Alumnus* and the *Alumni Directory* of Union College. She was managing editor of the *Central Union Reaper*, of the Loma Linda University medical school alumni *Journal* and *Directory* (1947-51), and of *Medical Arts and Sciences* (1964-73). The body of her writing (in newspapers, journals, books, manuals, and special publications) has appeared under pseudonyms or the names of organizations or institutions represented, with few exceptions. She has been executive editor of SPECTRUM since its beginning.

GARY G. LAND, assistant professor of history at Andrews University, has been active in the interests of SPECTRUM from its beginning and has been book review editor during more than two years. He has been an editor also of *Adventist Heritage* and has been a major contributor to the Studies in Adventist History group and active in the National Association of Seventh-day Adventist Historians. Three articles by him have appeared in SPECTRUM previously. He is a graduate of Pacific Union College (1966) and has the master of arts and the doctor of philosophy (1967, 1970) from the University of California, Santa Barbara.

JERILYN V. EMORI, a graduate of Loma Linda University (bachelor of arts from the College of Arts and Sciences 1965), was on the university's official publications staff from 1965 to 1973. Since then she has done freelance editorial work for individuals, organizations, the university, and Rinehart Press (college textbook publisher in San Francisco). As editorial associate, she has been a member of the SPECTRUM staff since the journal started.

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