

# PERSPECTIVES on Science and Christian Faith

JOURNAL OF THE AMERICAN SCIENTIFIC AFFILIATION

50th Anniversary Issue . . .

Science and Theology in the 18th Century

Fundamentalist Fish Tales

The Fundamentalist Origins of the ASA

Moody Bible Institute and the ASA

Rhetoric and Reality in the Early ASA

The Future of the ASA

*"The fear of the Lord  
is the beginning of Wisdom."*  
Psalm 111:10

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## Perspectives on Science and Christian Faith

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# ***Looking Back, Looking Forward***

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**T**he ASA 50th Anniversary Annual Meeting at Wheaton College offered a number of papers that analyzed the context from which the organization emerged and examined various events and issues of the founding period. We include a representative selection of these papers in this issue. Further papers will appear in the March 1992 issue.

Sara Joan Miles begins with an analysis of Anglo-American 18th century attitudes toward science and theology. She argues that the participants of this period set the agenda and the terms of the debate and offered the basic responses from both sides of the table that have continued to the present. Edward B. Davis' "A Whale of a Tale" aptly illustrates the notorious extremes to which fundamentalist defenders of the reliability of scripture would go in the early decades of the century. He reminds us that these practitioners of "folk science" were successful then and today in part because Christian scientists are unwilling to communicate the relevant science to lay people.

D. G. Hart offers an analysis of prevailing attitudes toward science and culture held by mainstream American evangelicals at the time of the founding of the ASA in 1941. Hart views fundamentalist opposition to evolution as stemming in part from attitudes toward threats to existing institutions and dispensational eschatology as well as its apparent denial of God's creative and providential role in natural and human history.

Three individuals, Irwin A. Moon, F. Alton Everest and Will H. Houghton, were key to the founding of the ASA. J. W. Haas, Jr. describes the personalities, the interrelations and the important roles that these men played in the early days of the organization.

Mark A. Kalthoff looks at the efforts of the young organization to avoid the disruptive rhetoric of the past in seeking to correlate the facts of the "two books." These efforts often led to divergent views but "a spirit of harmony prevailed" in spite of the "dissonant chords."

In the closing paper, Richard Bube looks to the future of the ASA. He challenges us to continue the path charted by the founders and offers the metaphor of the living bridge to describe our continuing role in linking science and Christianity. Bube paints a broad future path and warns against extremes of scholarly obscurity, blind defense of the faith, or theological restructuring.

The March 1992 issue will offer insights on other individuals who made significant contributions in the early days of the ASA. It will include a paper by Dorothy Chappell on biologist Russell Mixter, and one by Joseph Spradley which explores the contributions of theologian Bernard Ramm to evangelical thinking on the relationship between science and scripture. Chappell and Spradley then join in describing the contributions of three Wheaton College women to the ASA in the years following World War II.

— J. W. Haas, Jr.

## 50th Anniversary Greetings ...

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### ... from CSCA

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*(Transcript of telephone call of July 25, 1991)*

ATTN: Dr. Robert Herrmann, ASA  
TO: Members and Friends of ASA

Special congratulations to a 50-year-old ASA from an 18-year-old CSCA.

May God continue to bless your faithfulness and effectiveness in providing leadership in science and faith issues.

Your friends at CSCA.

Norman MacLeod, *President*  
Toronto, Ontario, Canada

### ... from IVCF of Canada

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Dear Friends:

On behalf of IVCF of Canada I wish to send congratulations as you celebrate your 50th anniversary during your Annual Meeting at Wheaton College, July 25-29, 1991.

IVCF of Canada has appreciated and enjoyed our relationship with the Canadian Scientific Christian Affiliation. Members in CSCA and IVCF have a mutual interest in seeing the gospel presented in Canadian education institutions.

On a personal note ... Hendrick Orthuys first introduced me to the ASA when I was a student at Oregon State in the late 1950s. His encouragement both as the IVCF faculty sponsor and as someone with an interest in science was a great inspiration to me.

May you continue to have a very fruitful ministry. Warmest Christian greetings.

Yours cordially,

James E. Berney, *General Director*  
Inter-Varsity Christian Fellowship of Canada  
1840 Lawrence Avenue East  
Scarborough, Ontario M1R 2Y4

### ... from Christians in Science

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We in Christians in Science send our warmest greetings and congratulations to our sister organization, the American Scientific Affiliation, on the occasion of your 50th anniversary.

We are three years younger than you are and have enjoyed the stimulus of your literature and your thinking over the years. For us, at least, two highlights in our history have been the joint conferences in 1965 and 1985, both held at Oxford, England. They proved beyond doubt how useful it is to exchange our different approaches and to hear the best speakers from across the water. We look forward to further cross-fertilization of ideas and practical programmes. Thank you for all the ways in which you have helped us.

Meanwhile, we thank God for your past achievements and your ongoing ministry. May your work grow continually in both quality and scope and in fresh openings for bring biblically controlled thought and action into public life. There remain great tasks for us both as we seek to recapture the high ground and "bring every thought into captivity to Christ." May God bless you greatly.

Colin A. Russell  
*Chairman*

Oliver R. Barclay  
*Publications Secretary*

Christians in Science  
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# From Being to Becoming: Science and Theology in the Eighteenth Century

SARA JOAN MILES

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*The 19th century French historian, Ernest Renan, characterized the conceptual shift that took place during the 18th century as a change from being to becoming. At the beginning of the century, it was believed that an immutable God had created a static Nature and given us an absolute revelation of Himself in Scripture. Natural theology, utilizing Lockean sensationalism, justified studying Nature as a means of learning about God. This approach undermined the authority of Scripture by giving primacy to reason and by linking particular theological views to specific scientific theories. When those static theories, emphasizing being, gave place in the 19th century to more dynamic explanations, the theological views were viewed as having also been overturned. The scientific theories of the French philosophes, relying on a different view of Locke, eliminated God and revelation. Their theories, however, displayed the characteristics associated with becoming that would determine the direction of 19th century science. The theological position associated with becoming was developed by John Wesley. Looking at Locke in yet a third way, Wesley tried to validate a continuing, dynamic revelation of God. But this revelation was subjective, and according to Locke, incapable of being communicated to another individual. In a culture that valued scientific objectivity, subjective religious knowledge was irrelevant. Thus the 18th century, while not presenting Christian theology with major scientific challenges in the form of theories, did raise basic epistemological questions, and science provided the answers that proved to be acceptable.*

The 18th century was a golden age for science. This was the period in which Newtonian science became the model for all other sciences, in which breakthroughs were made in chemistry by men such as Lavoisier and Priestley, and in which taxonomic systems, such as the one designed by Linnaeus, began to allow natural historians to catalogue the myriad organisms and minerals found in nature. Mathematicians such as d'Alembert and Euler began to apply theoretical, deductive thought to physical reality, developing in the process what they called "mixed mathematics." Other thinkers like Condorcet and Turgot started to apply math, and, more importantly, scientific methodology, to problems of society and to create the "social sciences." LaPlace looked beyond the solar system to study the origins of the universe itself; Jenner developed vaccination. Science was fulfilling the Baconian dream of allowing humans to control nature.

Religion did not fare so well in the 18th century, however. This period is often viewed as synonymous with rationalism, materialism, deism, growing agnosticism and skepticism, and the rise of secularism. D'Holbach, Diderot, and many of the French *philosophes* made it clear that God, revelation, Scripture, and all of the other ingredients of traditional Christianity were subjects of scorn. Scholars in many countries found it increasingly difficult to bridge the gulf between natural and supernatural, to reconcile natural law and divine providence, and to balance moral philosophy and spiritual virtue. Revealed religion was under siege, and the answer seemed to be to reject the new modernity or to reject traditional dogmas that relied on non-scientific epistemology.

For many, the response was the former — to reject the new modernity. One scholar has described the

Enlightenment religious scene in these terms:

Change ought not to be the main theme in any discussion of eighteenth-century churches. The church was a conservative institution that reflected and reinforced social hierarchy, privilege, and tradition.<sup>2</sup>

The church defended the status quo. It adopted some of the science, but only if this did not demand too much in the way of change — social change, political change, theological change. But for those who accepted the new science, change was everywhere. If mankind could know only through experience and reason, if there was no foundation in revealed knowledge, then kings had not been established by divine right and morality had no absolute basis. New forms of government should be based on rational, “scientific” bases, and ethical systems would emerge as the social “sciences” developed. Thus for many Christians, to be pro-science was to be unpatriotic and amoral at best, and treasonous and licentious at worst.

When we look at the issues facing the church in the Enlightenment, therefore, we really need to examine more than just science and theology. The encounter included a mixture of concerns including methodology, politics, hermeneutics, epistemology, ethics, and civic duty. As is often the case when there are many problems and questions, there were many approaches and answers, and non-scientific issues and influences were intricately involved in these disputes. It is impossible within the constraints of a brief paper to examine all of these issues, influences, and implications. In this article I will simply characterize a variety of scientific positions proposed in the 18th century and describe some of the ways individuals and groups responded theologically to the new ideas of science.

## The Static World View

Science and religion agreed on one thing at the beginning of the 18th century: the world was static. Whether it was a question of Linnaean biology, Newtonian physics, corpuscular matter, or preformationist embryology, nature was a static system. An immutable God had created once and for all a universe that was as unchangeable as its Creator. In his *Spectacle of Nature* (1732), Noel-Antoine, the Abbé Pluche, described creation in terms of the Great

Chain of Being — each work of God being providentially designed for its precise place. The static character of Abbé Pluche’s nature is even more explicit in his *History of the Heavens* (1739). Admitting the fullness and diversity of God’s creation, the Abbé Pluche nevertheless insisted that God had “limited their number. Nor,” he said, “shall any action or concurrence imaginable add a new genus of plant or animal to those of which he has created the *germina*, and determined the form .... But he prevents the destruction of that universe by the very immutability of the nature and number of these elements.”<sup>3</sup>

This static and immutable universe was conceived in geometric terms — all beings were points on a line — and the points (or beings) were ordered according to the hierarchy of creation. Thus, the Great Chain of Being provided a paradigm for seeing the world. The Chain of Being not only ordered nature — animals were “higher” than vegetables, which in turn were “higher” than minerals, but also society — nobles were “higher” than the bourgeoisie, clergy were “higher” than laity, men were “higher” than women, and all humans were “higher” than brute animals. Such a view was easily derived — or at least justified — from Scripture. Had not God given man (undoubtedly understood as the male of the species!) dominion over the rest of creation? Had not Bishop Bossuet clearly shown that Scripture taught not only the Divine Right of Kings, but the duty of all Christians to submit to the King’s authority? Revelation disclosed the guidelines, theology interpreted the guidelines, and natural philosophy (or science) employed them in describing Nature.

Hence most natural philosophers at the beginning of this period saw little conflict between science and theology. Carl Linnaeus, a good Swedish Lutheran, believed that there was a “true order” for Nature and sought to devise a system that reflected that “true order.” Such a system would allow humans to catalogue and organize all of terrestrial creation. The idea that Linnaeus could formulate a classification system that truly revealed the order of creation makes sense only if Nature is static. Species existed as they were created, unless, of course, God had wiped them out in the Flood. Linnaeus believed, and his system was predicated on the belief, that by using the rational powers God had given them, humans were able to maneuver through the multitudinous objects and untold phenomena of nature that appeared to the uncritical and unprepared mind as chaotic, and see the Divine Order



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established by the Divine Creator. Science and Nature became vehicles to confirm the unchanging truth of Scripture; Reason was guided by and subordinate to Revelation.

This kind of approach is often used to describe the relationship between science and theology resulting from Isaac Newton's work. For many, 18th century science is epitomized by Newton's *Principia Mathematica* and *Optiks*, despite the fact that the former was written at the end of the 17th century. Nevertheless, their impact during the early decades of the 18th century, especially in England, is pivotal. The law-like regularity of Newton's Nature confirmed its creation by a Law-giving God: the watch must have a Watch Maker. But the implications of this mechanistic view are profound, and they point not only to the regularity of phenomena but also to the passivity of matter. Indeed, it was this latter issue that was most critical for theology. Following other 17th century mechanists such as Robert Boyle and Pierre Gassendi, Newton insisted that the motion of objects — be they planets or atomic corpuscles — was due *not* to any activity or force inherent in matter, but rather to movement imposed by God. In fact, matter itself was directly contingent on the will of God. Gary Deason states Newton's position this way:

While he explored many explanations of gravitational forces, characteristically avoiding definitive claims where he felt the evidence was weak, *the picture of the immediate presence of the divine will moving material bodies according to freely established laws was never far from his mind.* It was a picture consistent with the early Protestant and mechanist view that nature is completely passive and that God is the exclusive source of activity in the world.<sup>4</sup>

Newton, and his 18th century followers, insisted on the radical distinction between the Creator and the created. God was the only active, self-moving, self-willing, self-sufficient, and eternal being. Matter, by contrast, was passive, inert, determined by God's will, contingent upon His nature, and finite. Matter in motion is not due to some inherent property called motion that matter possesses, but rather to God's acting on matter so that it conforms to His will.

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***Science and Nature became vehicles to confirm the unchanging truth of Scripture; Reason was guided by and subordinate to Revelation.***

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Evidence to support this passive view of nature came also from theories of generation. In 1688 Jan Swammerdam had demonstrated that various stages of an insect could coexist simultaneously within an organism. Using these data to combat the epigenetic theory, Swammerdam decided that the embryo existed preformed in the adult. Moreover, microscopic observations by Marcello Malpighi were interpreted by many as proving the pre-existence or preformation of embryonic germs. Building on these works, Nicholas Malebranche reasoned that Swammer-

dam and Malpighi had only moved the problem back one generation. The obvious conclusion, at least to Malebranche, was that all generations were preformed, like a box within a box, when God first created the organism. Embryological development was the unfolding of this preformed being. The Swiss Huguenot Charles Bonnet, in the middle of the 18th century, continued to defend this position, first because it was consistent with a passive Nature and an active God, and second because it accounted for the "genetics" of original sin. All humans, being present in the germ cells of Adam and Eve, were corrupted by their sin.

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***The mechanistic world view of science assumed that Nature was orderly, static, and passive, and that there was a well-defined distinction between the Creator and His creation.***

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## From Miracles to Mechanism

The mechanistic world view of science, then, assumed that Nature was orderly, static, and passive, and that there was a well-defined distinction between the Creator and His creation. Such a conception fit well with Christian theology. To many, the more science was uncovering the wonders of Creation, the more it was evident that a Providential, Omnipotent God was responsible for bringing it into being and sustaining its existence. But there had been a subtle shift in the understanding of His relationship to His world. From the mid-17th century on, there was an increasing belief that the Providential, sustaining activity of God was through the Laws of Nature, not through specific, miraculous, Divine activity. Descartes, a 17th century mechanist, had written:

For we understand it to be a perfection in God not only that He is in Himself immutable but also that He acts in a manner as constant and immutable as possible, so that, with the sole exception of those instances which the evidence of experience or divine revelation makes certain, and which we perceive or believe to have been brought about without any change in the creator, we must not admit any other alterations in his acts lest any inconsistency be thence inferred in God Himself.<sup>5</sup>

Miracles were no longer consistent with the "consistency" of God Himself, and so scientists could seek to understand the "natural" basis of these extraordinary or mysterious events.

More importantly, there were no longer specific acts in nature by which God could be known. Instead, He could be known only in the complex, consistent, harmonious working of His creation. Natural theology became the means by which the wonders of Nature were shown to reveal the wonderful God of Nature. Books such as John Ray's *Wisdom of God Manifested in the Works of the*



*Creation* (1691), Nehemiah Grew's *Cosmologia sacra* (1701), and William Derham's *Physico-theology, or a Demonstration of the Being and Attributes of God from his Works of Creation* (1713), as well as the prestigious Boyle Lectures, emphasized the way in which the study of Nature increased one's understanding and knowledge of the God of Creation. Dr. Samuel Clarke, in his Boyle Lectures on *The Being and Attributes of God*, argued that

[the] harmony and order of the universe pointed to a Creator who is as beneficent as he is wise. The fatherly rule of God demanded of his children a benevolence like his own, and these elementary truths — the fatherhood of God and our duty to show a good will comparable with his — were the essential ingredients in their teachings.<sup>6</sup>

A reasoned study of God's workmanship would lead to a reasoned appreciation of the Worker and a reasoned understanding of one's duty.

But what happened in the process to the God revealed in Scripture? At first, nothing. The God revealed by Nature was certainly not dissimilar to the God proclaimed in the Old and New Testaments. Omnipotent, omniscient, providential, eternal — this God had the attributes of the God traditionally known by Scriptural revelation. Moreover, a God revealed by Nature solved the problem of interpreting Romans 1:18-20. Creation itself should be enough for any person to know God's Nature and His Will, and hence even those without the Scriptures — a group whose size was appearing more and more large with the increased exploration of the earth — had no excuse. The purpose of Scripture was now viewed primarily in terms of salvation-history, as the story of what the God who can be known from Creation had done on behalf of human beings in Jesus Christ.

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***No longer was Scripture believed to be the source of authority for science, and soon it would not be the authority for politics, history, and moral theory.***

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Regarding Scripture this way involved two changes from earlier periods. First, its domain was severely restricted. No longer was it believed to be the source of authority for science, and soon it would not be the authority for politics, history, and moral theory. It spoke authoritatively about salvation: it told of our need and of God's response. Second, its status was greatly limited. No longer was God's revelation in Scripture the highest authority, but now it was understood in terms of how human reason had deciphered God's revelation in Nature. G. R. Cragg, in *The Church and the Age of Reason*, stated that in this period

[E]veryone conceded that belief stands or falls as it commends itself to human intelligence. In this respect the defenders of Christianity met its foes at least halfway. They

were willing to put orthodoxy on trial at the bar of reason, and were satisfied that it would emerge triumphant from the test. God himself was expected to produce credentials satisfactory to reason. Christianity is the religion of reason; the Christian God is the God of Nature. The title of Locke's work, *The Reasonableness of Christianity*, epitomizes the basic conviction of the age. In this sense, rationalism was not a doctrine about religion but an approach to its problems.<sup>7</sup>

## From Revelation to Reason

It was not long, however, before it did become a doctrine about religion, and perhaps the place where one can see that most clearly is France. Whereas some of the French *philosophes*, Voltaire and probably Jaucourt, for example, were theologically quite close to the natural theology and deism of England, others rejected religion completely. Moreover, this latter group based their rejection of revealed religion on a combination of a revised scientific methodology and new scientific theories.

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***This philosophy no longer needed the First Cause or Watchmaker of natural theology, so Diderot rejected all theologies and philosophies that posited an immaterial God.***

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Let's look at the theories first. When the corpuscular theory of matter emerged in England during the 17th century, one of the accusations it had to live down was that of atheism. The old Greek theories of atomism were viewed to be materialistic and, by definition, atheistic. English scientists, including Charleton and Boyle, had managed to rehabilitate the old theory and even to give it a Christian dress, but the *philosophes* were not so easily convinced. Instead they adopted a more Leibnizian conception of matter, one that considered the atom as eternal and as possessing inherently the properties of motion and sensitivity. Denis Diderot, the chief editor of the *Encyclopédie*, his disciple and biographer, Jacques Naigeon, and the Baron d'Holbach were some of the more outspoken advocates of this position. Diderot's cosmos was composed of one substance, and there was nothing outside of that substance: "The supposition," Diderot said, "of any being whatever placed outside of the material universe is impossible .... There is no more than one substance in the universe, in man, in animal."<sup>8</sup> For Diderot, all things were formed by the inherent motion of atoms; his was a kind of materialistic monism. But this philosophy no longer needed the First Cause or Watchmaker of natural theology, and so Diderot rejected all theologies and philosophies that posited an immaterial God. In the article "NATURALISTE" Diderot added a paragraph to the original contribution stating:

One also gives the name of *naturalist* to those who do not acknowledge God, but who believe that there is only a



material substance, clothed with diverse qualities that are as essential to it as length, width, and depth, and as a consequence of which everything is accomplished in nature as we see it. *Naturalist* in this sense is synonymous with atheist, spinosist, materialist, etc.<sup>9</sup>

Here we see the sharp break between science and religion, between scientist and religious believer. But what we have not yet seen is that in addition to positing an exclusively materialistic cosmos, Diderot and his associates, borrowing selectively from Leibniz, proposed a dynamic system in which all parts of the universe are bound together in an organic unity of moving particles. In his unsigned article "PÉRIR" [to perish], Diderot wrote:

Nothing is destroyed, but everything changes its state. In this sense we perish constantly or we do not perish at all because there is no instant in the eternity of our life where we differ more from ourselves than any other instant, either before or after, and because we are in a perpetual flux.<sup>10</sup>

This same idea was expressed in other articles. "Beings are born, grow, and disappear," he wrote in "IMPÉRISSABLE" (imperishable), "but their elements are eternal."<sup>11</sup> In his *Rêve d'Alembert* [*D'Alembert's Dream*] Diderot described a living world, infinitely elastic, filled with force, and determined in its outcome. At one point in the dream, Diderot had D'Alembert say:

So I am what I am because it was inevitable that I should be. Change the whole and of necessity you change me. But the whole is constantly changing .... Man is merely a frequent effect, a monstrosity is a rare one, but both are equally natural, equally inevitable, equally part of the universal and general order. And what is strange about that? All creatures are involved in the life of all others, consequently every species ... all nature is in a perpetual state of flux. Every animal is more or less a human being, every mineral more or less a plant, every plant more or less an animal .... There is nothing clearly defined in nature ....<sup>12</sup>

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### *Active matter eliminated the need for a God who created and sustained.*

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Active matter, that is, matter that is uncreated and indestructible, that has as inherent properties motion, feeling, and thought, that is constantly in flux throughout the universe according to well-defined laws, this kind of matter eliminated the need for a God who created and sustained.

One might accuse the *philosophes* of practicing "arm-chair science," but "experimental science," especially in the area of biology, was supporting their position. In 1744 Abraham Trembly had published the results of his work on the fresh-water hydra or polyp. It had been assumed that these organisms were plants because they reproduced by budding, but Trembly showed that they acquired food like animals, reacted to touch like animals, and were capable of locomotion like animals. They seemed to be therefore a sort of transition form between plants and animals

on the chain of being. Continuing his experiments, Trembly sought to discover if these organisms were capable of regeneration. No matter how he cut the polyp — lengthwise, crosswise, big pieces, small pieces — each piece always gave rise to an entirely new polyp. Soon other experimental work showed that worms, which were known to be animals, could do the same thing, and so the hydra's place in the animal kingdom was established.

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### *Without soul, matter must possess the ability to express all the properties seen in Nature.*

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But this created a problem. If every portion of an animal could reconstitute a new animal, where was the animal soul or organizing principle? And what did this do to the idea of preformation? To say that every piece of tissue, no matter how small, contained the soul was to stretch credulity and meaning. To say that every piece of tissue, no matter how small, contained a preformed embryo of the next generation was just as implausible. The work on the polyp added weight to the epigenetic theories of embryological development that were floating around in the mid-1700s, but it also supported the materialistic views that denied the existence of soul. Without soul, matter must possess the ability to express all the properties seen in Nature. These properties exist in potential form in some atoms or groups of atoms, and in actual form in others. Over the course of time, new forms arise, old forms are recycled. Listen to Diderot speaking through the words of the blind English mathematician, Saunderson, in *Lettre sur les aveugles* [*Letter on the Blind*]:

You may imagine, if you want to, that the present order with which you are so much impressed, always subsisted; but let me believe that it hasn't, and if we were to go back to the birth of things and of eras, and if we perceived matter in self-motion, and the fog clearing away from the chaos, we would encounter a multitude of unformed beings for each well-organized being ... The monsters destroyed themselves successively, all the vicious combinations of matter disappeared ... only those survived whose mechanism did not have any important weaknesses or contradictions, and which were able to exist and to perpetuate themselves.... But why cannot I also posit for worlds what I believe about animals? How many atrophied worlds are missing, have dissipated, are reforming and dissipating themselves, perhaps at each instant, in the distant spaces, where motion continues and will continue to combine masses of matter until they become arranged in such a way that they can persevere.... What is this world, Mr. Holmes? A composite, subject to revolutions, which indicates a continual tendency towards destruction; a rapid succession of beings which follow upon each other; an ephemeral symmetry, a momentary order ... the earth is eternal for you as you are eternal for the being which is sensitive for only a moment.<sup>13</sup>

Here is a clear statement of the implications of active, dynamic matter. Rather than an immutable world, conceived in the mind of God and executed by His omnipotent

power, Nature is in a constant state of ceasing to be as it is and beginning to be something else. Rather than motion being the result of God's will, it is an inherent property of matter itself, and the specific motion is the determined result of prior motions. Such reactions have occurred eternally and will occur eternally. God as an explanatory hypothesis is no longer needed.

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***One could not deny the data; one could postpone the interpretation if the obvious one was heretical.***

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Obviously Christian scientists, whether Catholic, Reformed, Lutheran, or dissenter, rejected these philosophical views and especially the idea of active matter, but it was more difficult to reject the biological findings concerning the polyp and generation. The general tendency was to accept the data but reject the interpretation or implications. Hence Charles Bonnet, whom I mentioned earlier as staunchly defending the preformationist position, performed some of the regeneration experiments on worms. Data were objective and irrefutable; conclusions were bound up with philosophical prejudices. One could not deny the data; one *could* postpone the interpretation if the obvious one was heretical.

Saying this implies a certain view of science or scientific methodology. What constituted "proper science" for any of the people or groups discussed so far is not as easy to explain as one might wish it were. One source of difficulty is the diversity of opinion in the 18th century. British Newtonians did not approach science the same way or utilize the same tools that the French materialists did. Cartesians and Lockians advanced different theories of knowledge — and therefore disagreed about what constituted evidence. The aims of science for Baconians diverged from those emphasizing the centrality of mathematics. The implications of science for moral philosophy were radically different for natural theologians and for atheists.

Historians also have problems explaining what "science" was and how it should be done because they tend to see the world in 20th century categories and definitions instead of the terms of the 18th century. However, given these difficulties, one can learn by looking at what constituted "good scientific methodology" or "methodologies," and see how those impacted — and in turn were influenced by — theology.

## **The Static Character of Natural Theology**

In Great Britain and America — what can be called the Anglo-American tradition — there had been a strong emphasis on observation and experimentation building on the Baconian model. This model of science fit well

with Puritan theology. Bacon's "two books" doctrine, his anti-scholasticism, his inductive methodology, and his emphasis on utility resonated with Puritan beliefs and values. This passage from Bacon might well have been written by any Puritan divine:

Our savior saith, "You err, not knowing the scriptures, nor the power of God"; laying before us two books or volumes to study, if we will be secured from error; first the scriptures, revealing the will of God, and then the creatures expressing his power; whereof the latter is a key unto the former: not only opening our understanding to conceive the true sense of the scriptures, by the general notions of reason and rules of speech; but chiefly opening our belief, in drawing us into a due meditation of the omnipotency of God, which is chiefly signed and engraven upon his works.<sup>14</sup>

Thus the 17th century Anglo-American view of science was strongly tilted toward a "hands on" approach — observe in the field, test in the laboratory, gather data, and then draw conclusions and implications.

Such a method differed greatly from the Continental, and largely Cartesian, strategy. There rationalism, including an emphasis on mathematical abstraction, dominated scientific endeavors. The difference in method stemmed from epistemological beliefs about the source of knowledge: Descartes and other rationalists argued that the nature of human knowledge can be explained only by appealing to the ideas innately found within the mind itself. These innate ideas, which God imprinted upon the human intellect, were the basis for all philosophy and the starting point for all human knowledge. In this system, a static nature is known and comprehended by static ideas implanted in a static mind.

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***"Our savior lay[s] before us two books to study: first the scriptures, revealing the will of God, and then the creatures expressing his power; whereof the latter is a key unto the former."***

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The individual whose views would provide the epistemological justification for Baconian experimentalism and the alternative to the innate ideas of Cartesian rationalism was John Locke. Cragg concluded that if Newton was the creator of scientific physics, then Locke was the originator of scientific philosophy, going so far as to call him the "moving spirit" of the 18th century.<sup>15</sup> Repudiating innate ideas, Locke believed that except for our intuitive awareness of our own existence, all our knowledge is derived from our senses or from reflecting upon our sense perceptions. The combination of sensing and reflecting constitutes experience, which in turn is the basis of all ideas. Locke saw reason to be operating within the act of reflecting, thus giving a support and an epistemological basis to Baconian induction.

Locke was as easily incorporated into Anglo-American theology as Bacon had been. One American theologian who was influenced by Locke was Jonathan Edwards, and although historians disagree as to the extent to which Edwards incorporated the Lockean system, it is fairly clear that he did accept the epistemological basis. One historian, Edward Davidson, wrote:

Edwards learned that experience, which necessarily comes from the outside (Locke had proved that truth), turns inward: it moves from fact to idea, from substance to concept; it conforms to a logic which God has implanted in His universe since the beginning of time.<sup>16</sup>

But Edwards recognized that sensations had to have causes, and he ultimately moved those causes back to the Mind of God. Moreover, anything that the human mind *can* know is a direct result of God's Sovereignty — what Edwards would call the physical law of the universe, the cognitive route of sensing and thinking.<sup>17</sup> But the Fall had created problems in our apprehension of that law, in our correct incorporation of the sensations from Nature. In his sermon, *A Divine and Supernatural Light*, preached in 1734, Edwards was obviously trying to work out some principle, some foundation by which Nature — affected as it was by the Fall and continually corrupted by human sin — could be the origin or source of grace and understanding, just as Locke's philosophy had affirmed it would.

In the end, Edwards worked out what seems to be a balance between the revealed knowledge of Scripture and the reasoned knowledge derived from Nature, both of which resulted from the Sovereign activity of God. He rejected the deism and mechanism of natural theology, I think, because of his epistemology. He wrote:

'Tis a strange disposition that men have to thrust God out of the world, or to put Him as far out of sight as they can, and to have in no respect immediately and sensibly to do with him. Therefore so many schemes have been drawn to exclude, or extenuate, or remove at a great distance, any influence of the Divine Being.<sup>18</sup>

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*"... so many schemes have been drawn to exclude, or extenuate, or remove at a great distance, any influence of the Divine Being."*

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In his "Notes on Science," Edwards defined the "Laws of Nature" as "the stated methods of God's acting with respect to bodies." As a result, he said, "there is no such thing as *Mechanism*, if that word is intended to denote that whereby bodies act, each upon the other, purely and properly by themselves."<sup>19</sup>

But in many respects, Edwards was not that far from the intellectual leaders of the Continent who believed that revelation, properly understood, was reasonable, and in that respect he can be grouped with the French Jesuits

and conservative reformed theologians of France, Holland, and Switzerland. It is significant that in his notes were plans to write a *Natural History of the Mental World*, along with other notes for a "Treatise on the Mind," that indicate a moral philosophy based on nature and reason, not on Scripture.

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*Mechanism ruled, miracles were ruled out by definition, and the chief function of religion was to provide the basis of morality.*

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But it is clear that however reasonable God and God's revelation might be, Edwards would not join forces with those who believed that reason should rule revelation. Those in this group were the deists or socinians, including by some accounts the reformed theologians in Geneva. Mechanism ruled, miracles were ruled out by definition, and the chief function of religion was to provide the basis of morality. The revelation of Scripture was to be understood only within the bounds of reason, and its message was essentially limited to God's offer of salvation and the human moral response. For both of these groups, both God and Nature were viewed as static and immutable, with activity being the attribute of God and passivity being the character of matter and Nature. A third group, strongest in France, denied the existence of God and anything spiritual or immaterial and therefore found no reason to accord revelation any epistemological status. For them Nature was much more dynamic and active, and the universe was very much in flux.

So far I have described the ways in which science and reason in the 18th century directly undermined the authority of Scriptural revelation by elevating the status of reason. I want now to look briefly at the way in which Lockean sensationalist psychology, and its incorporation into Christian theology by a non-rationalist likewise subverted — although in this case I think indirectly and somewhat innocently — the status of Scripture during this period. Our subject for this portion is John Wesley.

### The Dynamic Character of Wesleyan Theology

As early as 1725, John Wesley was looking for a philosophically satisfying faith, and his language is very Lockean. In a letter to Susanna he wrote that "there is ... no Belief, and consequently no Faith ... without Rational Grounds."<sup>20</sup> In another letter he described "faith" as a "species of belief," and then defined "belief" as "assent to a proposition upon rational grounds."<sup>21</sup> In an argument and in terms reminiscent of Locke's *Essay Concerning Human Understanding*, Wesley seems to have followed Locke in affirming a God both transcendent and immanent, known through the senses — senses that allow us to perceive order among phenomena. In the 1730s he copied

in abridged form and commented on Bishop Peter Browne's book *The Procedure, Extent, and Limits of Human Understanding*. Browne had emphasized, on the basis of Hebrews 11:1 ("Now faith is the substance of things hoped for, the evidence of things not seen ....") and of Lockean epistemology that faith is related to sense-based methods and reason. One scholar, J. Clifford Hindley, explained it this way:

Hebrews 11:1 has a philosophical cast peculiarly in tune with eighteenth-century rationalism, and suggests at once that the definition of faith which these philosophers could accept was the one which the Bible offered: faith is primarily the attitude of mind which believes truths about an unseen spiritual world which reason is unable to discover, but which satisfies the demands for evidence.<sup>22</sup>

The "evidence" that Browne — and Wesley — provided was human feeling interpreted by human understanding. As Robert Brantley succinctly stated: "things hoped for" are data of experience and so provide an at least quasi-sensationalistic grounding for the rational method implicit in the verse.<sup>23</sup>

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***Wesley added a spiritual sensation, a feeling, which perceived data from the supernatural realm, to the physical or natural sensations that perceived data from the natural realm.***

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Browne went on in *Procedure* 2.6 to provide an exhaustive account of Locke's definition of reason as "natural Revelation, whereby the eternal Father of Light, and Fountain of all Knowledge communicates to Mankind that portion of Truth, which he has laid within the reach of their natural Faculties."<sup>24</sup> Browne argued that reason, provided with data by the natural faculties, i.e., the senses, learns of God's existence and something about His nature from the book of creation. He continued to suggest that even "evangelical faith," i.e., complete trust in New Testament Revelation, is either dependent upon or bolstered by natural theology. He wrote:

Thus we see that Men must Know, before they can rightly Believe; and have a full Conviction of their Judgment upon sufficient Evidence, before there is any closing of the Will to Complete the Nature of Evangelical Faith; which is literally [sic] as the Apostle defines it, the Evidence of Things not seen, or the Assent of the Understanding to the Truth and Existence of Things Inconceivable, upon certain and evident Proof of their Reality in their Symbols and Representatives.<sup>25</sup>

Some might argue that Wesley's copying of this material did not necessarily imply agreement. Others, more historically astute, might contend that this was all before Wesley's conversion in 1738, and therefore does not reflect the thought of the "converted" Wesley. These words of Wesley himself, written in 1740 in "An Earnest Appeal,"

demonstrate how he did appropriate the Lockean-Browne philosophy in his own thought:

You know ... that before it is possible for you to form a true judgment of the things of God, it is absolutely necessary that you have a *clear apprehension* of them, and that your ideas thereof be all *fixed, distinct, and determinate*. And seeing our ideas are not innate, but must all originally come from our senses, it is certainly necessary that you have senses capable of discerning objects of this kind — not those only which are called "natural senses," which in this respect profit nothing, as being altogether incapable of discerning objects of a spiritual kind, but *spiritual* senses, exercised to discern spiritual good and evil ....

And till you have these internal senses, till the eyes of your understanding are opened, you can have no apprehension of divine things, no idea of them at all. Nor consequently, till then, can you either judge truly or reason justly concerning them, seeing your reason has no ground whereon to stand, no materials to work upon.<sup>26</sup>

Throughout this "Appeal" Wesley argued by analogy from our senses and knowledge based on physical sensations to faith and the assurance based on its testimony.<sup>27</sup> What Wesley did was to add a spiritual sensation, a feeling, which perceived data from the supernatural realm, to the physical or natural sensations that perceived data from the natural realm. The new sensation is activated by God's spirit at conversion, and then is capable of receiving spiritual data — including the recognition that Scripture is God's word. Before the new birth, the spiritual mind is dark, a *tabula rasa*, just as is the infant's before physical birth.

Wesley's philosophy provided a quasi-scientific basis for the "enthusiasts" and other Christians who insisted on the present, immediate activity of God's spirit, for those who believed in a continuing revelation of God to humans. It was also much more compatible with the emerging dynamic view of Nature, since it assumed a dynamic revelation. Wesley himself insisted that the reality of the immediate revelation must be judged by the authority of Scripture, but for others the inherent tensions between personal faith and common authority would lead to an undermining of Scripture's absolute authority in matters of faith and conduct. The Holy Spirit, as perceived by the individual, became both the source of data and the witness to the validity of that data. The individual, enlightened by the fire of God, could then draw rational — and truthful — judgments, without appealing to either tradition or Scripture.

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***The issues science and theology face in the 1990s saw their origins in the 18th century.***

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Thus by the end of the 18th century scientific theories and methodologies had raised crucial questions for Christians. The nature of the debate centered on theories of knowing, the reality or illusion of revelation as a source

of knowledge, the role of reason in understanding, and the degree to which the reality, which humans apprehend only in part, is static, immutable, and passive or is dynamic, evolving, and active. Science's answers, even when appropriated in some way by theology, reduced the domain of God and the authority of Scripture. Moreover, since the theology that remained most faithful to Scripture was one that adopted the static and passive world of Newtonian mechanism, it was ill-prepared for the radical changes of the 19th century in which science operationally embraced the concept of "becoming." The theological positions that were most prepared for a view of Nature in flux, those influenced by Wesley and other "enthusiasts," tended to abandon Wesley's interest in science and focus on individual pietism and personal "spiritual" life.

In summary, the issues science and theology face in the 1990s saw their origins in the 18th century. The terms of the debate, the rules of the debate, and the answers from both sides of the question, were essentially set down in the Age of Enlightenment, and for the most part, what has happened since has been an entrenchment by both sides. Science began more and more to set the terms of the debate, and as a result, theology has found itself in the position of adjusting. The natural theologians in England and people such as Jonathan Edwards found ways to make theological doctrine conform to scientific theories, but when the scientific theories were overthrown, the theological doctrines were also rejected. Those like John Wesley who tried to justify revelation in "scientific terms" found themselves isolated from science. Science was objective and by its objectivity capable of communal appropriation. Religion became subjective and, according to Locke, incapable of being shared knowledge.

As 20th century scientists and Christians, ASA members are heirs of both traditions, and thus live somewhat schizophrenic lives. As professional scientists, historians, theologians, we try to accommodate theology and science, with science largely dictating the terms and methods of the accommodation. As committed Christians, we experience God's revelation, but we have no epistemological basis for communicating either to each other or to the non-believer the truth of that revelation, or even of determining if "my" revelation is indeed true. In some ways, then, we have not moved far from the 18th century. The column "Why Must there Be an ASA," in the June 1991 issue of *Perspectives on Science and Christian Faith* stated that we "have confidence that ... integration [of scientific and Christian views of the world] is not only possible but necessary to an adequate understanding of God and His creation."<sup>28</sup> If we are serious in this belief, then we must spend more time examining the issues that dominated the period just described, and learn to focus not so much on problems of individual scientific theories and theological doctrines, but more upon fundamental theories of knowledge, that is to say, on epistemology. \*

## NOTES

- <sup>1</sup>This paper was prepared while attending an NEH Summer Seminar at Brown University, 1991, on "Science and the Enlightenment as seen in the *Encyclopédie*." Joan Richards was very helpful, and some of the ideas undoubtedly reflect the talks we had on the subject of natural theology and science in Great Britain. John Pannabecker and Martha Baldwin also read earlier drafts and made valuable comments and suggestions. Final responsibility for content and form, however, are mine.
- <sup>2</sup>Woloch, Isser. *Eighteenth-Century Europe: Tradition and Progress, 1715-1789*. New York: W. W. Norton and Company, 1982. p. 271.
- <sup>3</sup>Cited in Baumer, Franklin L. *Modern European Thought: Continuity and Change in Ideas, 1600-1950*. New York: Macmillan, 1977. p. 204.
- <sup>4</sup>Deason, Gary B. "Reformation Theology and the Mechanistic Conception of Nature," in *God and Nature: Historical Essays on the Encounter between Christianity and Science*, ed. David C. Lindberg and Ronald L. Numbers. Berkeley: University of California Press, 1986. p. 182.
- <sup>5</sup>Quoted by Robert S. Westfall, "The Rise of Science and the Decline of Orthodox Christianity: A Study of Kepler, Descartes, and Newton," in Lindberg and Numbers, *God and Nature*, p. 227.
- <sup>6</sup>Quoted by G. R. Cragg. *The Church and the Age of Reason (1648-1789)*. Baltimore: Penguin Books, Inc., 1960. p. 158.
- <sup>7</sup>Cragg, *The Church and the Age of Reason*, p. 159.
- <sup>8</sup>Diderot, Denis. *Oeuvres complètes de Diderot*, II. Paris: Ed. Assézat-Tourneux, 1875-77. pp. 69, 117.
- <sup>9</sup>Diderot et D'Alembert. *L'Encyclopédie ou Dictionnaire Raisonné des Sciences des Arts et des Métiers*. XI. Paris: Briasson, David, LeBreton, et Durand, 1765. p. 39b.
- <sup>10</sup>Diderot, *L'Encyclopédie*, XII. p. 379b.
- <sup>11</sup>Diderot, *L'Encyclopédie*, VII, p. 593a.
- <sup>12</sup>Diderot, Denis. *Rameau's Nephew/D'Alembert's Dream*. Translated by Leonard Tancock. London: Penguin Books, 1966. pp. 180-181.
- <sup>13</sup>Diderot, *Oeuvres complètes*, I, pp. 309-310. Trans. by Mark Wartofsky. I have gained much by Wartofsky's analysis of Diderot's monism in "Diderot and the Development of Materialist Monism," *Diderot Studies II*, edited by Otis E. Fellows and Norman Torrey. Syracuse, N.Y.: Syracuse University Press, 1952. pp. 317-318. My comments have been based on his work.
- <sup>14</sup>Cited by James R. Moore, "Geologists and Interpreters of Genesis in the Nineteenth Century," in Lindberg and Numbers, *God and Nature*, p. 322.
- <sup>15</sup>G. R. Cragg. *Reason and Authority in the Eighteenth Century*. London: Cambridge University Press, 1964. pp. 5-6.
- <sup>16</sup>Edward H. Davidson, "Biography: Interpretative — Sovereign God and Reasoning Man" in *Critical Essays on Jonathan Edwards*, ed. by William J. Scheick. Boston: G. K. Hall, 1980. pp. 38-39.
- <sup>17</sup>Davidson. *Jonathan Edwards*. pp. 31, 125.
- <sup>18</sup>Jonathan Edwards. "Treatise on Grace," in *Selections from the Unpublished Writings of Edwards*, ed. A. B. Grosart. Edinburgh, 1865. p. 40.
- <sup>19</sup>Jonathan Edwards. "Notes on Science" in *The Works of President Edwards*, I, ed. by Sereno E. Dwight. New York, 1829. p. 714.
- <sup>20</sup>Cited in Richard E. Brantley, *Locke, Wesley, and the Method of English Romanticism*. Gainesville, FL: University of Florida Press, 1984. p. 28.
- <sup>21</sup>Brantley, *Locke, Wesley, and the Method of English Romanticism*, p. 28.
- <sup>22</sup>J. Clifford Hindley. "The Philosophy of Enthusiasm." *The London Quarterly and Holborn Review* 182 (1957):208.
- <sup>23</sup>Brantley, *Locke, Wesley, and the Method of English Romanticism*. p. 31.
- <sup>24</sup>John Locke, *An Essay Concerning Human Understanding*, 4.19.4 Ed. by Peter H. Niddich. Oxford: Clarendon Press, 1894. p. 698.
- <sup>25</sup>Browne, *Procedures*, 2.6, p. 250.
- <sup>26</sup>John Wesley. *The Appeals to Men of Reason and Religion and Certain Related Open Letters*. Ed. by Gerald R. Cragg. Vol. 11 of *The Works of John Wesley*. Edited by Frank Baker. Oxford: Clarendon Press, 1975. pp. 56-57.
- <sup>27</sup>See Cragg's comments to "An Earnest Appeal," p. 56n.
- <sup>28</sup>ASA Description/Application Page, *Perspectives on Science and Christian Faith*, 43 (2 — June, 1991):143.

# A Whale of a Tale: Fundamentalist Fish Stories

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*According to a persistent story, exactly one hundred years ago a sailor named James Bartley was swallowed by a sperm whale off the Falkland Islands. About thirty-six hours later his fellow sailors found him, unconscious but alive, inside the belly of the animal. What follows is the result of my attempt to uncover the real story, as well as the story of the story — how this whale of a tale found its way into the fundamentalist apologetic tradition, as well as a sizeable number of conservative biblical commentaries.*

*Who did swallow Jonah, who did swallow Jonah, who did swallow Jonah down?*

— from a children's song

A few years ago when a relative of my wife passed away, I was asked if I wanted to have a look at her library — an offer that no true scholar can ever refuse. I didn't expect to find anything really interesting. The departed had been a kind, gentle woman of deep Christian faith, a finer woman than many I have known, but not inclined to serious study, not even on matters of fundamental importance to her. Certainly I expected to find a few biblical commentaries, one or two books of popular theology, perhaps even a bit of local history scattered among the large number of tracts and polemical works about the sad state of affairs in modern America that I knew she must have had. A cursory glance at the pile of literature that now lay before me in some disarray only confirmed my assumption. There was nothing here to get excited about, and only very few things that gave me cause to hesitate before putting them back on the pile. But hesitate I did, in one case, long enough to open the faded brown paper cover, held together with masking tape, that advertised its contents as "addresses delivered at the Winona Lake Bible Conference" in 1934. *Winona Echoes*, it proudly called itself. Knowing that the list of speakers that summer had included for the first time the prominent anti-evolutionist Harry Rimmer, in whom I have a long standing interest, I began to turn the pages.

That was when they fell out — two old, folded, badly torn pieces of paper that had been placed once, for safe keeping, between the pages of a sermon on "Jonah and the Whale" by Harry Rimmer. Yes, Rimmer was here,

and not just Jonah. Two more of his favorite subjects, "Noah's Ark and the Deluge," and "Modern Science and the Long Day of Joshua," followed in the wake of the whale. I was beginning to feel proud of myself. "A real find," I muttered to no one in particular as I put the volume down where it wouldn't be confused with those I had rejected. "Too bad there aren't any more like this one." Little did I know, as I bent over to pick up the two scraps of paper that had fallen onto the floor, that it was they, seemingly the least of my riches that day, that would ultimately prove to be the real treasure. Little did I know, as I placed the fragile collection of sermons on the shelf with the rest of my literature on creationism, that what I had overlooked in my excitement would take me on a fishing expedition to a small British seaport and, at least vicariously, to the South Atlantic and on to New Zealand in search of a whale.

I began to realize just what I had found about four years later. In the meantime I had finished my doctoral work on 17th century science and launched my career in college teaching. One day as I was preparing a lecture on anti-evolutionism in the period between Scopes and Henry Morris I pulled the old Winona volume off the shelf, whereupon the two enclosures again fell out. This time I looked at them more closely. One, when I had succeeded in unfolding it without adding to the several tears it already possessed, revealed itself as an article on "Jonah and the Whale" by Professor Albertus Pieters of Western Theological Seminary in Holland, Michigan, published in the *Moody Bible Institute Monthly* in September, 1930. In less than two pages the author considered whether it was in fact possible (it was) for a man to live inside the belly of a whale for three days. In the process he cited not only some accepted scientific authorities but also



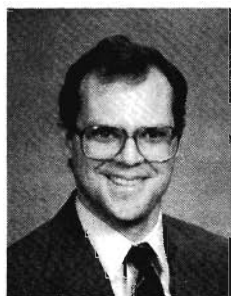
two other sources that related a very curious story of a modern Jonah that was repeated in the second enclosure, which was clearly a tract. "A SAILOR SWALLOWED BY A WHALE," the tract proclaimed in large letters above a poorly printed picture captioned, "A Sperm whale crushes a boat." The tract bore no date, but pronounced discoloration of the two pages in *Winona Echoes* between which it had been lodged indicated that it couldn't be much younger than the book. It carried the by-line of one Fred T. Fuge, whoever he was, but in fact quoted (apparently verbatim) at length from what Fuge identified as "the well known book, *Can A Young Man Trust His Bible?* — By Arthur Cook, Missionary to Iceland." (I later learned that the correct name was Gook, not Cook.) Fuge began by stating categorically that "[t]he whole account has been sifted carefully by M. de Parville, editor of the famous *Journal des Débats*, whose name and reputation as a scientist are a sufficient answer to those who call the story of Jonah into question from a scientific standpoint." What follows is a remarkable story, a whale of a tale that is worth reproducing here in full:

The whaling ship *Star of the East*, was in the vicinity of the Falkland Islands, searching for whales, which were very scarce. One morning the lookout sighted a whale about three miles away on the starboard quarter. Two boats were manned. In a short time one of the boats was near enough to enable the harpooner to send a spear into the whale, which proved to be an exceedingly large one. With the shaft in his side, the animal sounded and then sped away, dragging the boat after him with terrible speed. He swam straight away about five miles, when he turned and came back almost directly towards the spot where he had been harpooned. The second boat waited for him, and when but a short distance from it he rose to the surface. As soon as his back showed above the surface of the water the harpooner in the second boat drove another spear into him. The pain apparently crazed the whale, for it threshed about fearfully, and it was feared that the boats would be swamped and the crews drowned. Finally the whale swam away, dragging the two boats after him. He went about three miles and sounded or sank, and his whereabouts could not be exactly told. The lines attached to the harpooners were slack, and the harpooners began slowly to draw them in and coil them in the tubes. As soon as they were taut, the whale arose to the surface and beat about with its tail in the maddest fashion. The boats attempted to get beyond the reach of the animal, which was apparently in its death agonies, and one of them succeeded, but the other was less fortunate. The whale struck it with his nose and upset it. The men were thrown into

the water, and before the crew of the other boat could pick them up one man drowned and James Bartley had disappeared. When the whale became quiet from exhaustion the waters were searched for Bartley, but [he] could not be found; and under the impression that he had been struck by the whale's tail and sunk to the bottom, the survivors rowed back to the ship. The whale was dead, and in a few hours the great body was lying by the ship's side, and the men were busy with axes and spades cutting through the flesh to secure the fat. They worked all day and part of the night. They resumed operations the next forenoon, and were soon down to the stomach, which was to be hoisted to the deck. The workmen were startled while labouring to clear it and to fasten the chain about it to discover something doubled up in it that gave spasmodic signs of life. The vast pouch was hoisted to the deck and cut open, and inside was found the missing sailor, doubled up and unconscious. He was laid out on the deck and treated to a bath of sea-water, which soon revived him, but his mind was not clear, and he was placed in the captain's quarters, where he remained to [sic] weeks a raving lunatic. He was carefully treated by the captain and officers of the ship, and he finally began to get possession of his senses. At the end of the third week he had finally recovered from the shock, and resumed his duties.

At this point the account shifts from what might have been related by any member of the crew to what could only be told by Bartley himself. What follows is a gruesome description of what Bartley felt, heard, and thought as he slid down into the whale's stomach, where he discovered that he could still breath, but where he was overcome by the intense heat and the dread of his horrible, inevitable death.

During the brief sojourn in the whale's belly, Bartley's skin, where it was exposed to the action of the gastric juices, underwent a striking change. His face and hands were bleached to a deadly whiteness, and the skin was wrinkled giving the man the appearance of having been parboiled. Bartley affirms that he would probably have lived inside his house of flesh until he starved, for he lost his senses through fright and not from lack of air. He says that he remembers the sensation of being lifted into the air by the nose of the whale and of dropping into the water. Then there was a frightful rushing sound, which he believed to be the beating of the water by the whale's tail, then he was encompassed by a fearful darkness, and he felt himself slipping along a smooth passage of some sort that seemed to move and carry him forward. This sensation lasted but an instant, then he felt that he had more room. He felt about him, and his hands came in



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contact with a yielding slimy substance that seemed to shrink from his touch. It finally dawned upon him that he had been swallowed by a whale, and he was overcome by horror at the situation. He could breathe, but the heat was terrible. It was not of a scorching, stifling nature, but it seemed to draw out his vitality. He became very weak, and grew sick at the stomach. He knew that there was no hope of escape from his strange prison. *Death* stared him in the face, and he tried to look at it bravely but the awful quiet, the fearful darkness, the horrible knowledge of his environments, and the terrible heat finally overcame him, and he must have fainted, for the next he remembered was being in the captain's cabin. Bartley is not a man of a timid nature, but he says that it was many weeks before he could pass a night without having his sleep disturbed with harrowing dreams of angry whales and the horrors of his fearful prison. The skin on the face and hands of Bartley has never recovered its natural appearance. It is yellow and wrinkled, and looks like old parchment. The health of the man does not seem to have been affected by his terrible experience. He is in splendid spirits, and apparently fully enjoys all the blessings of life that come his way. The whaling captains say that they never remember a parallel case to this before. They say that it frequently happens that men are swallowed by whales who become infuriated by pain of the harpoon and attack the boats, but they have never known a man to go through the ordeal that Bartley did and come out alive.

There the account ends. The rest of the tract is devoted to upholding the credibility of the biblical story of Jonah and Christ's reference to it in the Gospel of Matthew — a wholly predictable ending to a wholly remarkable story.

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### *It finally dawned upon him that he had been swallowed by a whale ...*

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What was I to make of all this? Somehow it all sounded a bit familiar. I thought I recalled hearing something like it many years before, in an otherwise long forgotten sermon by someone whose name I would never be able to dredge up. But was the story true, in which case there ought to be reliable records to support it, or was it just a really good fish story? On a hunch, I thought I'd try checking a reliable source, the *New York Times*, just to see whether they might have picked up a story like this one, which was certainly news fit to print. But where to start? Fred Fuge's account failed to date the event in any way — an almost incredible omission that, on the face of it, would almost suffice to discredit the whole story. Fortunately the article by Pieters (the other piece of paper in the Winona volume) filled in that minor detail, giving the date as February 1891.

In the *Times Index* for that year I found quite a few entries about whales and whaling, but nothing even remotely like the Bartley story. Ditto for the next year, the one after that, and so on, until I got to the volume for 1896. And then, all of a sudden, there it was: "Whale; man swallowed by ..." With growing excitement I retrieved the relevant roll of microfilm, found the issue for Sunday, November 22, and found exactly what I was looking for on page 16, an account nearly identical to that in

my little tract, prefaced by a *caveat lector* and attributing the original story to "The Mercury of South Yarmouth, England, in October 1891." A perusal of the other issues of the *Times* from the same roll turned up several other entries related to the Bartley story, from which I learned that a Harlem preacher had verified the existence of a barque of 734 tons called *Star of the East*, built in Glasgow, based in London, and commanded by a Captain J.B. Killam.

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### *But was the story true, or was it just a really good fish story?*

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All this was good news, as it lent credence to this wild story that I was now starting to believe, but the best news came a bit later from the National Science Foundation. I had been awarded a grant to study the unpublished papers of Robert Boyle, housed at the library of the Royal Society in London. This was almost too good to be true. Not only would I get to do some serious archival work on Boyle, but I'd be spending the summer in London, just when it looked like my whale story was taking a British turn. As I packed my bags, I made sure to include copies of everything I had found thus far, hoping to do a little whaling in my spare time.

My first opportunity came when I discovered that the British Library was open three evenings each week, when the Royal Society was closed — fishing, anyone? Casting out my line, I quickly reeled in copies of the two sources of the Bartley story named in Pieters' article: an article by Ambrose John Wilson in the *Princeton Theological Review* from 1927, and the autobiography of the great British engineer Sir Francis Fox, *Sixty-Three Years of Engineering*, published in 1924. Wilson, a schoolmaster from South Africa who went on to become a Fellow of Queen's College, Cambridge, was also an Anglican rector who opposed evolution and deplored the growing secularization of British society. He saw in the Bartley story a ray of hope, accessible historical evidence to turn against the skepticism of the higher critics. His article is chock full of interesting information and useful references, including one to a completely different modern Jonah story from an 18th century Edgartown whaler. But his version of the Bartley story comes straight from Sir Francis, whom I suspect he knew; certainly both were leading members of the British evangelical sub-culture.

Born in the mid-19th century, Sir Francis was the son of Sir Charles Fox, whose firm had built the great exhibition hall of 1851 later known as the Crystal Palace. Sir Francis made his own considerable reputation by supervising projects of comparable renown: extending the London Underground, bridging Victoria Falls, tunneling the Alps, and shoring up several great cathedrals including St Paul's. His dream of laying a tunnel under the English Channel is only now being realized. He also served as a magistrate, using his position to help the poor, the sick, and even those who came before him charged with crimes. One particularly notable case involved a man who had burglarized Sir Francis' own house and was subsequently

sentenced to three years' penal servitude. Sir Francis visited him, eased the man's conscience, and found him employment upon his discharge. Later he enlisted in the Army and was killed in France, but before leaving for the front he wrote to thank the engineer and his wife for their goodness to him. Sir Francis included this story in his autobiography, he said explicitly, so that other magistrates might be sensitive to similar opportunities to redeem fallen men. The same evangelical fervor was evident in his work with wounded soldiers, which led him to start a series of lectures and demonstrations on scientific subjects with an overwhelming apologetic bent that tends to trivialize both the science and the theology it is employed to serve — strikingly similar to the "Sermons from Science" series later associated with Irwin Moon and the Moody Institute of Science. Samples of what the soldiers encountered in these lectures can be found in a pamphlet, "Talks with our Wounded Heroes," printed by Sir Francis and distributed to thousands of men (and quoted in his autobiography). His treatment of the compound nature of white light is a typical example. The fact that a prism divides a ray of light from the sun into three primary colors is used to show "not only the possibility but the existence of One in Three and Three in One, the most perfect illustration in nature of the doctrine of the Trinity." Drawing out the analogy further, Sir Francis notes that "violet is the chemical and actinic ray, yellow is the lighting ray; red is the heating ray; and these correspond more or less closely to the functions of the three Persons of the Trinity."

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***Sir Francis used the story just as Wilson later did, to defend the credibility of the Jonah story.***

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Sir Francis' version of the Bartley story, which gets a whole chapter in his autobiography (it is worth noting in passing that the chapter concludes with an appeal for the placing of controls on the whaling industry, to prevent over fishing and extinction of "these splendid creatures"), was no less apologetic than his treatment of the primary colors: he used it just as Wilson later did, to defend the credibility of the Jonah story. As for the account itself, there was nothing in it not also in Fuge's tract, except for one important detail: upon the return of his vessel to England, Bartley was treated at a London hospital for the injury to his skin — which I might be able to verify by checking some hospital records, now that I had a pretty good idea when the incident was supposed to have taken place.

What interested me most was Fox's statement that the whole matter was "carefully investigated by two scientists — one of whom was the late M. de Parville, the scientific editor of the *Journal des Débats* of Paris, well known as a man of sound judgment and a careful writer." Although de Parville had died during the war, Fox added (he actually died in 1909), the man who succeeded him on the staff of the *Journal* had sent Fox an English translation that de

Parville himself had used summarizing the results of his investigation and concluding with the statement (quoted by Fox) "that the account given by the captain and the crew of the English whaler is worthy of belief."

Who was de Parville, whom both Fuge and Fox cited as an authority on the Bartley story? And what had he learned from his investigation? Eventually I would reel in the answers, but first I went fishing after medical records that might survive pertaining to the treatment of Bartley's parboiled skin.

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***Was someone else looking for my whale? Had he found it first? Had I been scooped?***

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As a start, I paid a visit to the library of the Royal College of Surgeons, where I would be able to get some information about London hospitals in the 19th century, and where I could probably see a copy of "The Psychology of Animals Swallowed Alive," a brief monograph by Sir John Bland-Sutton mentioned in Wilson's article. I was soon ensconced in a corner with a presentation copy of the Bland-Sutton and all the histories of London hospitals I could possibly want. Alas, I caught nothing that day, not even a minnow, and never even sighted my whale. To be sure, Bland-Sutton did mention Jonah, but it was the biblical version (which he was inclined to doubt) and not Bartley's; he also reprinted the 18th century newspaper account of the Edgartown whaleman that Wilson picked up from him. Nor did any of the hospital histories mention treating such a case, which would surely have been unique. (Some time later, at the British Library, I searched through the *Lancet* and the *British Medical Journal* for 1891-95, again drawing a blank.) I debated with myself whether to try searching hospital records from 1891, but a few inquiries convinced me that, even if I could locate them, the task would be enormous, at least as frustrating as looking for the proverbial needle in a haystack. Still lacking solid confirmation for my whale story, I decided not to try.

As I was leaving the RCS library, however, a staff member asked me whether I had seen the review of the latest novel by Julian Barnes, *A History of the World in 10-1/2 Chapters*, that had appeared recently in one of the London papers. "No, I hadn't." "You should look it up," he said, "as it tells a story remarkably like the one you are chasing," and he repeated what he remembered. I was at once both excited and anxious — was someone else looking for my whale? Had he found it first? Had I been scooped? The public libraries were already closed for the day, so I hustled over to the book shops on Charing Cross Road, where I found a copy of Barnes' book. He printed a short excerpt from the story I already had, taken from a source he did not identify, with added details (not entirely correct, as it turned out) about Bartley and de Parville that I had not known. He also dated the incident as having happened on 25 August 1891, not in February as my other accounts all had it.

I soon learned that his story had to be wrong, at least with regard to the date, for I would locate a newspaper report about Bartley that was published on 22 August 1891, three days before Barnes dated the incident itself. The story of finding the story is worth relating at some length, for it typifies the joys and frustrations that I experienced throughout my research; furthermore, it was in doing this research that I uncovered what I believe to be the real story behind the Bartley story as it has come down to us.

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*My heart took a jump — there was a real whale on the end of my line this time, and I wasn't going to let it get away.*

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I began with the only really “hard” evidence I thought I possessed: the information in the *New York Times*, allegedly taken from an issue of the *South Yarmouth Mercury* from October 1891. A bit of checking at the British Library soon showed that no such newspaper had ever existed. Indeed there is no place called South Yarmouth, at least not that I could find on the maps available to me. There is a little town called Yarmouth on the Isle of Wight, near Portsmouth on the southern coast, and a port called Great Yarmouth, on the coast about a hundred miles northeast of London in East Anglia. The latter had to be it, since a weekly called the *Yarmouth Mercury* had in fact been printed there in the 1890s. Armed with this information, I set aside a Saturday to visit the newspaper repository of the British Library in Collindale, near the former RAF base at Hendon, about 45 minutes north of central London on the Underground. I soon discovered to my chagrin that the newspaper I needed to see was being microfilmed and was therefore unavailable for study.

Convinced that this was the most important source I might find, I called several regional libraries outside of London in an effort to locate one that had a complete run of the *Yarmouth Mercury* for 1891. Fortunately, some libraries in East Anglia did. Not particularly anxious to go there myself, I wrote a letter to the Norwich County Library offering to send a ten-pound note to anyone who could send me a copy of the Bartley story as found in the *Mercury*.

After hearing nothing for a couple of weeks, I called again and spoke with someone in the local studies section who had seen my letter. “Oh yes,” she said, “we found what you wanted, and posted it yesterday. Your whale is very well known here — the Gorleston whale, we call it. They keep a file on it at the Great Yarmouth branch.” My heart took a jump — there was a real whale on the end of my line this time, and I wasn’t going to let it get away. “This whale story,” I asked, “where was it published?” “In the *Yarmouth Independent*, in June 1891,” she answered. I asked her to repeat that: “You did say the *Independent*, not the *Mercury*, as I stated in my letter? And you did say June, not October? That’s very interesting.

Tell me about your whale.” She proceeded to relate what then appeared to be a wholly different story from the one I had been chasing. “That’s not my whale,” I told her, and I reviewed the story I had outlined in my letter. There was mild laughter on the other end of the phone. “We all had a good chuckle when we read your story,” she said, “but we’ve never heard such a tale. We found your whale, but there wasn’t anyone inside it.” “Maybe so,” I replied, “but I’m coming up to see for myself.”

The next day I boarded the train at Liverpool Street for the three hour journey to Great Yarmouth. It was a truly lovely day, unusually clear for England in mid-July, perfect weather for crossing the fen country. As I took in the sea birds and tidal marshes, and smelled the salt air, my mind was drawn back to my boyhood on the New Jersey shore, which this countryside so closely resembled. I was going to enjoy this, even if my whale wasn’t waiting for me.

Upon my arrival at the library I went straight for the local studies section, where, to my delight, the staff were able very quickly to locate the file on the Gorleston whale and the microfilms I needed to search. I read the file first. It contained a series of newspaper clippings, some dating from the time of the event but others as recent as the early 1980s, that related the following story. In June 1891 a 30 foot rorqual whale came near the shore and ran up against a pier off the town of Gorleston, just south of Great Yarmouth. It was soon pursued by several boats and, after numerous attempts to harpoon it with fishing gear, it ran aground and was killed. Hung up by a rope around its tail, the whale was placed on exhibit for two days, drawing 2200 folk curious enough to pay an admission charge. Then the whale was dissected, producing a “disagreeable effluvium, which caused several of the more sensitive to leave the building.”

Subsequently it was decided to milk the whale for all it was worth. The bones were ground for fertilizer, and a taxidermist was hired to stuff the skin, which was mounted on a timber dray and taken to the London Westminster Aquarium where it was put on display — all of this very much in the tradition of P.T. Barnum. After repeat engagements in Norwich and other East Anglian towns, it was returned to Great Yarmouth, where it remained for some time before disappearing into the veil of history — and, no doubt, going the way of all flesh as well.

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*Clearly this was not my whale ...  
— or was it?*

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Clearly this was not my whale — or was it? Two clippings, one written within days of the event, mentioned that the Gorleston whale had inspired a number of exaggerated tales. Although no specific reference to the Bartley story was given, I had to wonder: was it possible that my whale was just the Gorleston whale in another guise? Turning my attention to the microfilms, at first

my suspicions seemed to be confirmed. There was nothing about Bartley, or any other whale, in the October issues of the *Mercury*, and likewise for November and December. Going back to February, when Bartley was supposed to have been swallowed, I began to work my way forward. Reaching June, I found several articles about the Gorleston whale, confirming what I had already read, but no Bartley. I was almost convinced that the folks in Norwich had been correct, that I was on a foolish fishing expedition, when James Bartley popped out of the microfilm reader and into my eyes: "MAN IN A WHALE'S STOMACH, RESCUE OF A MODERN JONAH," said the headline. The story agreed in every particular with the little tract that had sparked my expedition. "I've found my whale!" I called out to the librarian as I rose from the table. She was flabbergasted, but the evidence spoke for itself. "They're going to be pretty surprised over in Norwich when they hear about this," she said. *Darn right they will*, I thought as I rode back to London that evening, full of my own success.

Having brought my research to what I considered a satisfactory conclusion for the time being, I packed up my fishing gear until I returned home to the States. Here, as time allowed, I pursued three smaller fish, two of whom grew before my eyes into specimens of considerable size as I chased them. First, I contacted officers of the modern descendent of the engineering firm founded by Sir Charles Fox, in an effort to locate any papers of Sir Francis that might be known to them. In particular, I wanted to find the actual information prepared by de Parville, if it still survived. I got not even a tug on my line — that one got away.

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**"MAN IN A WHALE'S STOMACH,  
RESCUE OF A MODERN JONAH,"  
said the headline.**

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I had better results with the second fish, an inquiry to the Maritime History Archive at Memorial University in St. John's, Newfoundland, where the Lloyd's Register is now kept. Their records show three vessels under British registry bearing the name *Star of the East* that could have been in service in 1891: a 734 ton barque (mentioned above), and two other boats, each less than 20 tons, that could not possibly have been whalers. No log book for the barque was found, but the crew agreement showed that in February 1891 she was on route from London to Wellington via New York, a finding that impressed me since it was not inconsistent with the claim that she was off the Falkland Islands. However, I was advised by an archivist that, "whaling in the Falkland Islands did not commence until 1909, and I have not been able to locate a whaling vessel named *Star of the East*." A subsequent inquiry, as we shall see, proved even more enlightening.

The third fish I sought to land was, ironically, found in the volume that started all this, *Winona Echoes*. Thus far I had not paid much attention to Rimmer's sermon

on Jonah, an exact reprint of a tract Rimmer printed in 1927 under the auspices of the one-man operation he called the Research Science Bureau. According to information given in the biography written by his wife (who subsequently destroyed his correspondence, to the dismay of historians), the sermon actually first appeared in the Bible study magazine *Wonderful Word*, edited by Leon Tucker and printed around 1925. As I have been unable to locate a copy of this version, I cannot say whether it differs at all from the tract. I very much doubt that it does, since it was characteristic of Rimmer to regurgitate his material. The very same sermon appeared once again, with one change I will mention below, in *The Harmony of Science and Scripture*. In any event the sermon includes a number of anecdotes involving several species of whales and sharks, drawn from his usual array of popular sources and alleged "experts," all arranged to support his conclusion that a whale shark meets all the qualifications to have been Jonah's home for a few days. But not one mention of Bartley can be found.

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***The sermon includes a number of  
anecdotes arranged to support  
Rimmer's conclusion that  
a whale shark meets  
all the qualifications to have been  
Jonah's home for a few days.***

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I was vexed — had Rimmer been uncharacteristically suspicious of the story, so much so that he didn't print it, or had he never heard it at all? Neither possibility seems likely, and yet Bartley isn't there, at least not by name. Rimmer does relate a story that seems like a distant echo of Bartley's tale, somehow the same but somehow different, creating a puzzle I would not solve for some months yet. It comes right near the end of his sermon, and it goes like this:

In the *Literary Digest* we noticed an account of an English sailor who was swallowed by a gigantic Rhinodon [i.e., a whale shark] in the English Channel. Briefly, the account stated that in the attempt to harpoon one of these monstrous sharks this sailor fell overboard, and before he could be picked up again, the shark, feeding, turned and engulfed him. His horrified friends made so much outcry that they frightened the fish, and it sounded and disappeared.

The entire trawler fleet put out to hunt the fish down, and forty-eight hours after the incident occurred the fish was sighted and slain with a one-pound deck-gun. The winches on the trawlers were too light to haul up the body of the mighty denizen of the deep, so they towed the carcass to the shore and opened it, to give the body of their friend Christian burial. But when the shark was opened, they were amazed to find the man unconscious but alive! He was rushed to the hospital, where he was found to be suffering from shock alone, and a few hours later was discharged as being physically fit. The account concluded by saying that the man was on exhibit in a London Museum at a shilling admittance fee; being advertised as "The Jonah of the Twentieth Century."

We corresponded with our representatives in London, and shortly afterward received corroboration of this incident, and last year had the privilege of meeting this man in person. His physical appearance was odd, in that his entire body was devoid of hair, and odd patches of a yellowish-brown color covered his entire skin.

Apart from certain resemblances to the Bartley story (which I will soon discuss), two things in this account should be noted now. First, Rimmer says explicitly that he met this man "last year." The identical claim is made in his tract printed in 1927 and again in *The Harmony of Science and Scripture* which was first printed in 1936. Obviously Rimmer had to have met the lucky sailor no later than 1926, and probably earlier than this since the sermon predates the 1927 tract. His failure to give a consistent date for this is wholly in keeping with the cavalier disregard for details that characterizes so much of Rimmer's writing on science, and that is utterly inappropriate to the nature of the subjects he treats. It is strange indeed that, having met this man (or so he claimed), Rimmer did not name him. A gloss found in my copy of *Winona Echoes* adds that this meeting took place in Canada, but I have been unable to verify this from any other source.

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***Rimmer's failure to give a consistent date for this event is wholly in keeping with the cavalier disregard for details that characterizes so much of his writing on science.***

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Second, Rimmer says in his tract and again in *Winona Echoes* that he found this story in the *Literary Digest*, a popular magazine from the late 19th and early 20th centuries that was rather like a cross between *Reader's Digest* and *Newsweek* — if such a thing can be imagined! But in *The Harmony*, published later, Rimmer identified his source simply as "a magazine devoted to current affairs." Otherwise the account is absolutely identical to those printed earlier. Why did Rimmer change this, and only this, when his sermon was reprinted? He changed nothing else, not even his clearly erroneous repetition of the claim that he had met the sailor the year before. I cannot be sure, but I think he did it to correct a mistake. I have checked every issue of the *Literary Digest* available to me, including a virtually complete run from 1916 through 1927 (missing just a few issues before 1920), and have failed to find anything even remotely like the story Rimmer printed. An article on "Proving Jonah and the Whale" from September 1913 that briefly cites the work of Pierre Courbet (discussed below) is about sperm whales, not whale sharks. If Rimmer's story really isn't there, as I suspect, then he may have discovered this (perhaps someone else called it to his attention) and did what he could to correct himself. Apparently he no longer remembered the precise source — was it actually the sailor himself, whom Rimmer believed he had met? — but he continued to maintain that the story had appeared in a magazine. The most likely

candidate is an article called "Who Swallowed Jonah?" from the *Independent and Weekly Review* of 5 June 1920, the year in which Rimmer started his Research Science Bureau and effectively began his public defense of the Bible. The article relates the capture of a whale shark 45 feet long off Miami, and notes that certain unnamed scientists believed that the specimen was just an infant that, when full grown, would have been more than twice as long. Having observed that "the limited size of a whale's throat precludes the possibility of its swallowing a man," the author adds that the fish in question "could have lunched on twenty Jonahs without suffering the slightest pang of indigestion, and among the many persons who have seen the fish are clergymen who have formulated the theory that it was really a fish of this species that swallowed Jonah." And that, of course, is the view Rimmer defends.

What I did find while fishing in the *Literary Digest*, however, was another incarnation of Bartley's whale, in the issue for 4 April 1896, when Rimmer was not yet six years old. The bulk of the article is just an English translation of an account attributed to "M[onsieur]. P. Courbet in *Cosmos* (Paris, March 7)," which I read upon my next visit to London. *Le Cosmos: Revue des sciences et de leurs applications* was a conservative Catholic weekly, edited by the Abbé Moigno, that sought to maintain very strong connections between biblical statements and modern scientific theories, and Pierre Courbet was the author of several apologetic works including *Nécessité scientifique de l'existence de Dieu*. Courbet was led to write his article by news communicated at a session of the Academy of Sciences in late December 1895 (and covered briefly in *Cosmos* on 11 January), in which the Prince of Monaco had reported the capture of a sperm whale near the Azores. Just before it died, the animal vomited up several large cephalopods, including specimens of three new species. When the whale's stomach was opened, it contained the remains of more cephalopods, at least one of which was judged to have exceeded two meters in length.

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***"There is no longer any need to resort to an allegorical interpretation of the story of Jonah, since this discovery has proved that the sperm whale can easily swallow creatures larger than a man."***

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After relating this information, Courbet jumped as if by invitation to the exegesis of Jonah. Although the church has never condemned an allegorical interpretation, Courbet observed, there is no longer any need to resort to it, since this discovery has proved that the sperm whale can easily swallow creatures larger than a man. More than this, it is even possible that a man could live for a day or so inside a whale's stomach. "If we are to believe the English papers," he continued, "there has recently occurred a striking demonstration of such a possibility."

What follows, of course, is the Bartley story, much as it is found in Fuge's tract and the *Yarmouth Mercury*, except that his treatment in a London hospital is mentioned, and the portion of the story that represents Bartley's experiences inside the whale is quoted (apparently directly) in the first person rather than related summarily in the third. The presence of this first person account indicated that there was probably another "original" version of the story that I had not yet located, but Courbet offered no specific clues about his sources so I could not follow it up.

However, I could follow up another hunch — I had a lot of hunches on this expedition — that the very existence of this article suggested. Suppose, I told myself, that one French whale begat another; suppose that Courbet begat de Parville, the man named by Fox and others as one of two eminent scientists who had investigated the Bartley story and had found it "worthy of belief." I had already verified that Henri de Parville was for much of the late 19th century the scientific editor of the *Journal des débats, politiques et littéraires*, a short daily published in Paris since the French revolution. But to look blindly through several years of the *Journal* for one or two columns about Bartley seemed equivalent to looking for the old needle in the haystack, so I hadn't bothered. Courbet's article was the clue I needed; 1896 might be the year.

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*"Never mind," de Parville concluded,  
"after this entirely modern example,  
after the sperm whale of  
the prince of Monaco, I end up  
believing, this evening between ten and  
eleven o'clock, that Jonah really did  
come out of the whale alive!"*

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Calling the crew to their whaling stations, I made steam for Collindale once again. There I quickly ascertained that de Parville's columns appeared religiously every Thursday, except in August, of course, a fact that greatly increased the efficiency of my search. Within minutes I sighted my whale, first in the column from 16 January and then once more on 12 March. The initial sighting was very brief, just a few words about Jonah in the middle of a short report on the Prince of Monaco's discovery that de Parville might have picked up from *Cosmos*. The second time I saw the whole whale. Following closely the article by Courbet (which he cited), de Parville summarized Bartley's adventures and then offered his own assessment of the story. As improbable as it might seem, he argued, the captain of the English whaler is "worthy of belief [digne de foi]." "I won't allow myself to deny the reality of the adventure," he continued with some hesitation, "indeed I would have been even more convinced if, in support of this story, one had provided certificates of authenticity" signed by appropriate authorities. "Never mind," he concluded, "after this entirely modern example, after the sperm whale of the prince of Monaco,

I end up believing, this evening between ten and eleven o'clock, that Jonah really did come out of the whale alive!"

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*I will state this more strongly:  
no one, repeat, no one,  
has given this story the kind of careful  
investigation it warrants if it is to be  
used as evidence for  
the reliability of scripture.*

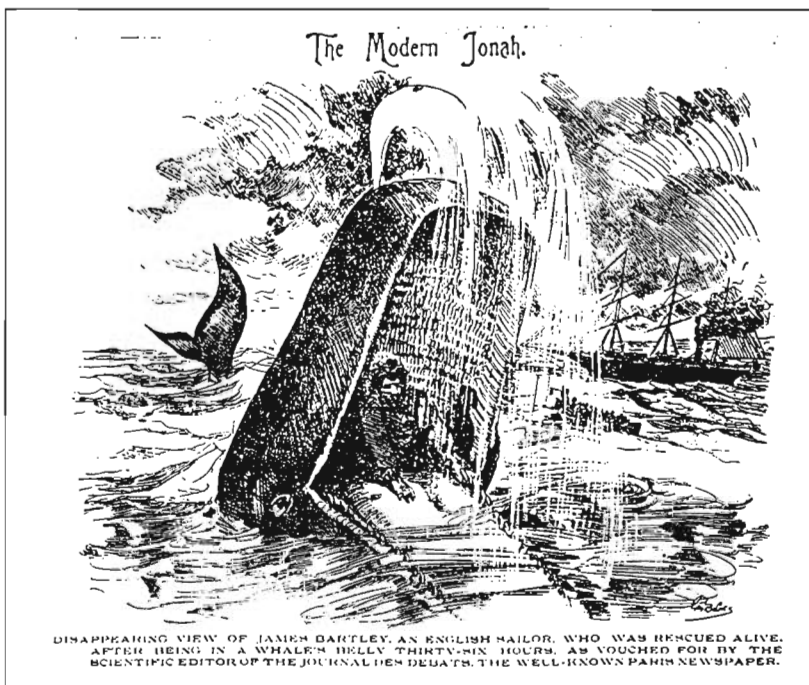
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I was delighted to find this, for it had to be the basis for the English translation of de Parville's account that Sir Francis Fox received from France in 1919, a copy of which I had been unable to locate. The similarities in detail and in wording between Fox's account and de Parville's column of 12 March are too strong to allow any other conclusion. The hesitation found in the original, however, is significant by its absence; whether de Parville or Fox is responsible for this I cannot say without seeing the actual text sent to the Englishman. In any case Fox proceeds without faltering to quote de Parville's overall conclusion: "After this modern illustration I end by believing that Jonah really did come out from the whale alive as the Bible records." Precisely the same passage is quoted in Arthur Gook's little book (really no more than a collection of tracts), *Can a Young Man Trust His Bible?*, upon which Fuge relied and which I finally found after figuring out that Fuge misspelled the author's name. Neither Gook nor de Parville seems to have undertaken a direct inquiry into the matter; both relied on Courbet. Fox made a point of stating that "The incident was carefully investigated by two scientists," one of them de Parville and the other not named. Surely the other person Fox had in mind was Courbet. Neither of course was really a scientist — de Parville was one of the first science journalists, and Courbet was an apologist. And it isn't the least bit clear from anything I have found that either one made what could be described as a careful investigation of the incident.

I will state this more strongly: no one, repeat, no one, has given the story the kind of careful investigation it warrants if it is to be used as evidence for the reliability of scripture. Yet this is precisely what everyone citing the story assumes — that its authenticity has been established beyond a reasonable doubt, at least by de Parville if not also by others. A typical example comes from Ambrose John Wilson, whose account of the incident has probably been read more widely than any other. In a subsequent defense of his own purportedly thorough investigation, Wilson claimed that the episode had been "elaborately investigated by M. de Parville, accepted in the *Journal des Débats*, and earlier by the Abbé Moine [sic] in the scientific journal *Kosmos*," where Courbet's article had appeared. But Courbet did no more than cite an account in the English papers, and de Parville did no more than cite Courbet. Why hadn't anyone dug any deeper than this? I was beginning to harbor doubts about the authenticity of this whale of a tale.



Some time later, following up a hunch about Gook's book, I discovered yet another version of the Bartley story. The English edition of this collection of tracts, printed in 1930, contains the "orthodox" version that was picked up by Fuge, but without citing any source for the story. Having learned that Gook had published an Icelandic edition of his book in 1911, I located a copy (no mean feat!) and compared the two sections on Jonah. Sure enough, the Bartley story was there, but it didn't look identical; since I don't know Icelandic, I couldn't tell how close they really were. One difference was obvious: the older, Icelandic edition gave the date of the incident as 25 August 1891 — the same date given by Julian Barnes — whereas the English edition had it "correct" as February 1891. More important, in the Icelandic edition Gook gave his source as the *New York World* from 12 April 1896. I soon found this article, complete with a wonderful line drawing of Bartley inside the whale's mouth that I cannot resist reproducing here. It proved to be identical to Gook's Icelandic version, but differed significantly from his English version which was almost identical to the account I had found in the Yarmouth paper from August 1891. It had to be the "second" version of the story that I had long sought! In addition to providing certain details about Bartley's age (about 35, as Barnes' account states) and physique that are not found in the Yarmouth version, the new version includes the first person account of his experiences inside the whale's belly that I had assumed must exist somewhere. But other details indicated to me that something was fishy here. The newly found version dated the incident from 25 August 1895 (not 1891), which couldn't possibly be correct; indeed Gook must have realized this and altered the date when he translated the article into Icelandic. It also stated that Bartley was found inside the stomach "peacefully reclining as in a bathtub" rather than doubled up. And it is claimed that "his skin still retains a peculiar bluish tinge, which seems indelible"; whereas the Yarmouth version states that "his face and hands were bleached to a deadly whiteness, and the skin was wrinkled, giving the man the appearance of having been parboiled." Perhaps a similar analysis caused Gook to replace this fishier version of the story with the "orthodox" Yarmouth version when the English edition of his book was printed about 1930.



Line drawing from the *New York World*, 12 April 1896.

In any case, this cast an unfavorable light on the whole story, and I soon had some hard evidence to support my suspicions. Upon my return from London the second time, I had obtained a valuable lead from my pastor. He didn't know very much about the story, but he provided me with one very important reference to a footnote in L.C. Allen's commentary on Jonah that cites an interesting correspondence printed in *The Expository Times* in 1906 and 1907. It began with a letter from a reader named Williams requesting more information about the Bartley story, which had been mentioned in the article (by E. König) on Jonah in Hastings' *Dictionary of the Bible*. König replied, giving more details of the story as contained in "English newspapers, whose account was reproduced in the Canadian *Aurora*," and adding that "I myself should be interested if the source

and the certainty of the above narrative could be established." (I have been unable to locate a copy of the *Aurora*.) Some time later Williams wrote again to report the results of inquiries he had made at Lloyds. He included transcriptions of two letters, one from Lloyds and one from Mrs. John Killam, wife of the captain of the *Star of the East*. The letter from Lloyds simply provided a few particulars about the vessel named in the Bartley story, including the fact that she left Auckland on 27 December 1890, bound for New York, where she arrived on 17 April 1891 — which could indeed

have placed her off the Falkland Islands in February. In her letter, however, Mrs. Killam stated flatly that "[t]here is not one word of truth in the whale story. I was with my husband all the years he was in the *Star of the East*. There was never a man lost overboard while my husband was in her. The sailor has told a great sea yarn."

This was a very interesting revelation, to say the least. I wrote again to the Maritime Archives, asking for copies of any documents they might have, and received the crew agreement from the *Star of the East* for the voyage described above. She had been a barque of 733 net tonnage, owned by Sir Roderick Cameron of London and registered in that port. She left New York on 25 June 1890 bound for Wellington with a crew of thirteen officers and men under the command of captain John Killam of Yarmouth, Nova Scotia (not Great Yarmouth in East Anglia, where the *Mercury* was printed). The date of her arrival in Wellington is not recorded, but she left there in early November,



stopping first in Lyttelton and then in Auckland, from whence she sailed to New York, arriving on 17 April. The agreement lists every member of the crew (including a few who signed on in Wellington and deserted just six days later in Lyttelton), and *there is no James Bartley on the list*, nor anyone of similar name, either for the entire voyage or any part thereof!

I realized then with finality that there simply was no whale at the end of my line, indeed that there never had been a whale, and that all of this was no more than a fish story, albeit a dandy. It had been good enough to fool apparently sophisticated folk like Henri de Parville, Sir Francis Fox, Julian Barnes, and the authors and editors of some highly respected biblical commentaries. But in the end, when traced back to the source, each reported sighting turned out to be just another chimera, just another version of the original spurious newspaper account. Precisely how the story began, and who started it, may never be known with any certainty at this juncture exactly a century later. Nevertheless a plausible scenario comes to mind — a scenario that actually does start with a whale, though not Bartley's.

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***The crew agreement lists every member of the crew, and there is no James Bartley on the list.***

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It is, of course, the Gorleston whale that I have in mind, that unfortunate creature killed near Great Yarmouth in June 1891 and subsequently dragged about the country on exhibition. Suppose there was at that time an imaginative young man, let's call him James Bartley, who happened one day to see this whale and to read a newspaper account of its capture and disembowelment. As he reflected upon this monster from the deep his thoughts moved to consider the plight of Jonah, and an idea occurred to him — an idea that might enable him to share in the publicity generated by the Gorleston whale. Having been graced by nature with an unusual complexion, he might easily pass for Jonah himself, so much so that he becomes a circus side show in the spirit of the Gorleston whale, billing himself as "The Jonah of the Twentieth Century." He also spins a yarn, complete with a real ship that really was in the South Atlantic in February 1891 in case anyone should make inquiries, that is printed by at least one provincial newspaper just two months after the story of the Gorleston whale. Perhaps he even has a friend pose as the captain of this vessel (who is, conveniently enough, not named in the original accounts) to attest to those facts that a man who spent thirty hours inside a whale's belly could not have known about.

Never mind that the ship he chose wasn't a whaler, and that British whalers didn't fish off the Falklands in 1891. Only a suspicious person would ask those sorts of questions, and a suspicious person wouldn't believe the story anyway. Having told his fish story, Bartley could sit back and enjoy the bit of fame it brought him without

any risk to his reputation (presuming that this would have concerned him) — if pressed, he could always claim that he had done no more than invent an entertaining tale, exactly what Mrs. Kellam later said he did. But her denial did not become widely known, so Bartley could go on pretending to be Jonah for anyone who would listen, including a young preacher named Harry Rimmer.

Rimmer apparently heard a different version of the tale, perhaps because Bartley changed his story after Mrs. Kellam's denial. This time the animal was a whale shark slain by a deck gun from a trawler in the English Channel (recall that there was in fact a 16-ton British vessel also called "Star of the East," happily enough for Bartley), not a sperm whale harpooned by men from a whaling ship off the Falkland Islands. To be sure, these are not insignificant differences. But otherwise the stories are so much alike that I am convinced they represent variants of the same original fish story inspired by the Gorleston whale. The descriptions of the sailor's skin after the incident are remarkably similar, suggesting that the same man was being described. Both stories claim that the man was hospitalized. Both describe the hunt for an animal that had first swallowed a man and then gotten away. And in each story the man inside was found about a day later, alive but unconscious, and suffering from shock.

Rimmer's use of this fabulous tale bears more than a little resemblance to his use of another, equally spurious story that Arthur Gook also relates, that of the "discovery" of Joshua's missing day. (Gook says that he obtained this story from Sidney Collett, whose approach to science was strikingly similar to that of Rimmer; the existence of a direct influence of Collett, or of Gook, on Rimmer would not surprise me in the least though I know of no direct evidence for it.) As he did with Jonah and the whale, Rimmer printed his sermon on "Modern Science and the Long Day of Joshua" several times, first as a tract in the mid-1920s, then in *Winona Echoes* and again in *The Harmony*. In each place Rimmer concluded his defense of the historical veracity of the book of Joshua with a summary of a book (which he cites, but not by name) written by Charles A.L. Totten in 1890, entitled *Joshua's Long Day and the Dial of Ahaz*.

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***If there is no truth in the Bartley story itself, there is still much to be learned from the story of the story, from the uses made of it by Rimmer and others.***

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Totten was a West Point graduate who, after completing several assignments on active duty, taught military science and tactics at Yale University from 1889-92. The next year he resigned from the army to pursue full time his interest in certain biblical questions. An Adventist (though not, I think, of the Seventh-Day variety) and a Zionist who believed that the ten lost tribes of Israel became the Anglo-Saxons, Totten spent much of his time investigating a

wonderful conglomerate of unusual beliefs such as spiritualism, Swedenborgianism, and the pyramid theories of Piazzini Smith (which he endorsed). In *Joshua's Long Day* he used a wholly absurd argument based on wild assumptions to "prove" that 23 hours and 20 minutes were lost out of time when the sun stood still for Joshua, and an additional 40 minutes were lost when the sundial went backwards for Hezekiah — a story resurrected in another guise by a NASA engineer named Harold Hill around 1970. (Astrophysicist turned biblical scholar Robert C. Newman and sociologist Tom McIver have written at some length on both of these episodes.) Both Rimmer and Gook appealed to this ridiculous story to show that the long day of Joshua had been established as a scientific "fact". Rimmer in addition embellishes his version with a story presumed to come from Totten (but not actually found there) of how Totten convinced an astronomer of the validity of his claim, whereupon the man embraced Christianity.

If there is no truth in the Bartley story itself, there is still much to be learned from the story of the story, from the uses made of it by Rimmer and others. Bartley becomes for the anxious apologist an almost heroic figure, living proof of the veracity of scripture against the onslaught of the scientists and the higher critics — the very people who, in Rimmer's opinion, had destroyed the faith of America's youth. "IT'S THE CRISIS HOUR IN SCHOOLS AND COLLEGES," reads an advertisement for Rimmer's tracts that must date from the 1930s. "Christians loyal to the Bible are everywhere faced with the problem of how to stem the tide of unbelief emanating from schools and colleges (yes, even churches) and sweeping off hundreds of young people... Must we throw up our hands and say the Bible is a bunch of fables and the Christian faith a delusion after all?" Gook asked the same question: *Can a Young Man Trust His Bible?*

Rimmer and Gook wanted more than anything else to give people reasons to believe, to strengthen their faith in the gospel by strengthening their faith in the literal words of the Bible, to debunk the claims of atheistic scientists and apostate theologians. What better way to do this than to use scientific evidence itself as a weapon against the scoffers? This was the whole point of Rimmer's ministry, the reason why he published so many tracts and books on science, why he goaded so many science professors to debate him, and why he promised a reward to anyone who could prove that the Bible contains even one scientific error.

I want to emphasize that there was nothing unique about Rimmer's anxiety. The tendency to muster pseudo-scientific "facts" to defend the reliability of scripture against biblical critics was absolutely characteristic of much evangelical and fundamentalist literature of the period. This represents a significant change from the general state of affairs in the 19th century, when a number of highly respected Christian scholars had produced a substantial body of literature harmonizing solid, respectable science with the faith of the lay believer. Written in many cases by men with legitimate scientific expertise, these works had the positive purpose of forging a creative syn-

thesis between the best theology and the best science of their day; they were not intended merely to defend a particular view of the Bible or to "prove" the Bible against skeptics. However there is no comparable body of literature from the first half of the present century. As Bernard Ramm lamented nearly forty years ago in the preface to *The Christian View of Science and Scripture*, "the noble tradition which was in ascendancy in the closing years of the nineteenth century has not been the major tradition in evangelicalism in the twentieth century. A narrow bibliolatry, the product not of faith but of fear, buried the noble tradition." Ramm's diagnosis was never more aptly applied than to men like Rimmer and Gook.

## IT'S THE CRISIS HOUR IN SCHOOLS AND COLLEGES

CHRISTIANS MUST DO SOMETHING!  
AND HERE'S WHAT CAN BE DONE!  
THEREFORE DO IT NOW!



HARRY RIMMER

CHRISTIANS loyal to the Bible are everywhere faced with the problem of how to stem the tide of unbelief emanating from schools and colleges (yes, even churches) and sweeping off hundreds of young people. **SIMPLY BECAUSE THEY ARE PERMITTED TO HEAR BUT ONE SIDE OF THE ISSUE.**

Can these materialistic and, often, positively atheistic teachings acquired in schools, be met? Must we throw up our hands and say the Bible is a bunch of fables and the Christian Faith a delusion after all?

DR. HARRY RIMMER is a young man widely known both as a competent Bible scholar and a well-informed scientist and research worker. With this happy combination he is endowed also with remarkable ability to write his findings in a style especially appealing to young people, and at the same time forceful and convincing to all.

(Fundamental Truth Publishers)

### An advertisement for Rimmer's tracts (circa 1930s.)

In their use of science to further apologetic goals, Rimmer, Gook and others stand revealed as practitioners of what Jerome R. Ravetz has recently called "folk science," the use of science to promote or provide the basis for one's personal belief system, whatever that may be. Professional scientists are no less prone than anyone else to the practice of folk science in this sense; Carl Sagan, Eric Chaisson, and Edward O. Wilson immediately come to mind. But if we confine the term to its literal meaning, there is a more obvious way in which Rimmer, Gook, and all the others who told fish stories were engaged in folk science. None was a professional scientist, the two closest being Fox, an engineer, and de Parville, a science journalist. Rimmer himself was an evangelist who attended four different colleges without attaining a degree (he was awarded honorary doctorates by three schools, including a Sc.D. by Wheaton College). His only sustained encounter with science was a brief stint at Hahnemann Medical College of the Pacific (now part of the University of California), where he could enroll without an undergraduate degree, in 1912.

But the practice of science in the modern world necessitates specialization. Indeed, the very process of professionalization is intended to produce highly specialized people possessing knowledge not readily available to those outside the boundaries of a given professional group, and institutional reward structures do little to encourage professionals to alleviate this by serving up popularized versions of professional knowledge for public consumption. The resulting gap — “chasm” might be a better word — between professionals and lay people is all too rarely bridged from the professional side, a state of affairs that (as Ramm noted in his own way) was even more acute with regard to evangelical scholarship in the first part of this century.

It is in this context that Rimmer’s status as a practitioner of folk science is most evident. Rimmer was so popular precisely because he was willing where others were not to mediate science to non-scientific audiences, without threatening their faith. Coming from the amateur side of the chasm, Rimmer declared himself an expert in scientific matters and sought the trappings of the professional. He joined the American Association for the Advancement of Science, was a fellow of the American Geological Society, and founded what he called the “Research Science Bureau.” He challenged recognized professional scientists to debate him. He went on archaeological digs. And he published, preached, and spoke on scientific subjects. His skills as an orator only heightened his credibility with the audiences of students and amateurs he normally addressed, and when challenged by a professional, he had a knack for stumping him or making him look silly by citing a particular fact, often obscure, that seemed to fly in the face of the particular theory Rimmer scorned.

It was indeed “facts,” not “theories,” that Rimmer equated with “true science.” The title of one of his books sums it up well: *The Theory of Evolution and the Facts of Science*, which he, of course, saw as diametrically opposed. A few good hard facts, a few fish stories from the newspapers, a missing day verified by a Yale professor: these were all Rimmer needed to debunk the foolish, godless theories of the scientists and the biblical critics. Never mind that his sources weren’t exactly the most reliable, nor his conclusions the most careful. With William Jennings Bryan and George McCready Price, two contemporaries who shared his low opinion of evolution, Rimmer preached the gospel of an uncritical Baconianism to all who would listen, filling with folk science a void that professional Christian scientists were apparently unwilling to fill with the real thing.

## Epilogue

A few weeks before this article was about to go to press I ran across a bit of Rimmeriana that I cannot resist including as a supplement to the tale just concluded, for it reveals better than anything else I have found the effect Rimmer had upon the faithful who heard him. As a bonus, it lends support to my view that Rimmer mixed the Bartley story with the account of the whale shark caught off Florida to form his own whale tale. And it contains information

I have found nowhere else about Rimmer spending time on a whaler. (Who knows if it is true? At this point I’m a bit suspicious of Rimmer’s basic honesty, let alone his judgment.) The account comes from an interview with Elizabeth Morrell Evans (born in 1899), a missionary to Taiwan who was also active in the New England Fellowship. The interview was conducted in 1985 by Robert Shuster of the Billy Graham Center in Wheaton, Illinois, and is printed with permission from the Center. What follows is a virtually complete transcript of that segment of the interview devoted to Miss Evans’ memories of Rimmer’s activities with the New England group; the ellipses indicate pauses on her part, not deletions. The fact that she heard Rimmer several times, and yet her memories center on the whale story is certainly significant.

EVANS: We had Dr. Rimmer quite a few times. We had him for a series of meetings and then we also sent him along from place to place for one day meetings. And he would always draw an excellent crowd. It ... it ... even at Park Street Church [in Boston] on week nights he would draw a very good, very good attendance. He was tremendous on bringing these difficult questions of the Bible in such a practical way that people could understand them. For instance, to talk on ... on Jonah and the whale, he went out in the whaling boat for a long time, for a month or two, and did whaling himself to study them. Because it said that the Mediterranean whale has too small a throat to swallow a man and live. He would crush the man. And he would find out the ... the facts about a thing. In the ... in the *Literary Digest*, I don’t know if you ever remember that, but that was the informational magazine of my day. It told along in 1898 or somewhere right around there of a man who fell overboard from a whaling vessel and was swallowed by a whale, and, of course, they never ... they didn’t know that he was swallowed by a whale, but they tried to rescue him and couldn’t. And eventually they caught that whale that they had been trying to get when he went overboard and found him alive in the belly of that whale. All that was the matter was that he was so frightened that he got unconscious every so often and his skin was a little rough from the acid of the stomach, but otherwise perfectly all right. And they exhibited that whale in Wanamaker’s store [in Philadelphia]. They had to take out panels. Well, in the city of Orlando I saw a whale that had just been caught that was plenty long enough to have swallowed a man and they had fish that they had taken out of his stomach that were ... that were bigger than a man, and the whole fish! Wasn’t that something ...

SHUSTER: Yes ...

EVANS: to put in a store of Orlando?

SHUSTER: A great illustration.

EVANS: Yes, and Dr. Rimmer had that sort of thing down so well that he could be so convincing.

SHUSTER: Well, I think that this might be a good time ... chance for us to leave here. We’ve covered a lot of territory.

EVANS: Yes.

Indeed we have, Miss Evans, indeed we have. ❀

## ACKNOWLEDGEMENTS

So many people helped with parts of this story by providing clues, copies of articles I needed, or timely suggestions that I cannot name them all. But I do want particularly to thank Lois Beck and Jennifer Davis, who checked my understanding of French sources; Catherine Clinton, for helping me navigate a fog of materials in the Great Yarmouth Library; Ed Larson, who went out of his way to help me find a certain whale; Bob Ives, whose lead about the correspondence in the Expository Times proved invaluable; Ruth Neiman, who labored tirelessly to obtain materials that most librarians have never even heard of; and most of all my family, who listened to my whale tales and let me go fishing pretty far from home.

## REFERENCES

### Harry Rimmer, Charles Totten, anti-evolutionism, and folk science

- DeRemer, Bernard R. "Harry Rimmer: Ardent Defender of Creation." *Fundamentalist Journal* 3 (December 1984), 44-46.
- Gatewood, Willard B., Jr. "From Scopes to Creation Science: The Decline and Revival of the Evolution Controversy," *The South Atlantic Quarterly* 83 (1984), 363-83.
- McIver, Tom. "Ancient Tales and Space-Age Myths of Creationist Evangelism." *The Skeptical Inquirer* 10 (1986), 258-76.
- Newman, Robert C. "The Longest Day," *United Evangelical* (23 August 1974), 8-11.
- Numbers, Ronald L. "The Creationists." In *God and Nature: Historical Essays on the Encounter between Christianity and Science*, ed. David C. Lindberg and Numbers (Berkeley: University of California Press, 1986), pp. 391-423.
- Ramm, Bernard. *The Christian View of Science and Scripture*. Grand Rapids: Eerdmans, 1954.
- Ravetz, Jerome R. *Scientific Knowledge and Its Social Problems*. New York: Oxford University Press, 1971.
- Rimmer, Charles Brandon. *In the Fullness of Time*. Berne, Indiana: The Berne Witness Company, 1948. [A biographical novel by his son.]
- Rimmer, Harry. *The Harmony of Science and Scripture*. John Laurence Frost Memorial Library, Volume One. 4th edition. Berne, Indiana: The Berne Witness Company, 1937.
- \_\_\_\_\_. "Modern Science and the Long Day of Joshua." Tract printed in 1927 by Glendale Printers, Glendale, California.
- \_\_\_\_\_. "Modern Science, Jonah and the Whale." Tract printed in 1927 by Glendale Printers, Glendale, California.
- Rimmer, Mignon Brandon. *Fire Inside: The Harry Rimmer Story*. Berne, Indiana: Publishers Printing House, 1968. [The biography by his wife.]
- "Rimmer, Harry." *Who Was Who*, Vol. III, pp. 728-29.
- "Rimmer, Harry." *The National Cyclopaedia of American Biography*, Vol. 41, pp. 21-22.
- [Rimmer, Harry.] Interview of Elizabeth Morrell Evans by Robert Shuster, August 26, 1985. Tape #T4, Collection 279, Missionary Sources Collection. Archives of the Billy Graham Center, Wheaton, Illinois. [The story printed in the epilogue.]
- Totten, Charles A.L. *Joshua's Long Day and the Dial of Ahaz*. Haverhill, Massachusetts: Destiny Publishers, 1890.
- "Totten, Charles Adiel Lewis." *The National Cyclopaedia of American Biography*, Vol. 10, pp. 237-38.
- Van Till, Howard J., Davis A. Young, and Clarence Menninga. *Science Held Hostage: What's Wrong with Creation Science and Evolutionism*. Downers Grove, Illinois: InterVarsity Press, 1988.
- Winona Echoes: *Notable Addresses Delivered at the Fortieth Annual Winona Lake Bible Conference*, Winona Lake, Indiana, 1934. Victor M. Hatfield, publisher.

### The Bartley story and its various incarnations

- Aalders, G.C. *The Problem of the Book of Jonah*. London: Tyndale Press, 1948. [Cites favorably Wilson's article]

- Allen, L.C. *The Books of Joel, Obadiah, Jonah and Micah*. Grand Rapids: Eerdmans, 1976. [Cites the correspondence from Expository Times]
- "The Authenticity of Stories about Whales Swallowing Men." Encyclopedia Britannica Library Research Service, no date. [A helpful bibliography accompanies long excerpts from Wilson]
- Barnes, Julian. *A History of the World in 10 1/2 Chapters*. New York: Knopf, 1989.
- Boice, James Montgomery. *The Minor Prophets*. Grand Rapids: Zondervan, 1983. [The section on Jonah in Volume 1 repeats the Bartley story, which the author gets from the Britannica research service]
- Brief notices in the *New York Times* from 17 November 1896 (p. 4, cols 6-7), 25 November 1896 (p. 4, cols. 5-6), and 24 November 1896 (p. 8, col. 5).
- Collett, Sidney. *The Scripture of Truth*. London: Partridge, 1905. [The source of Gook's information about the Totten story]
- "Could the Whale have Swallowed Jonah?" *Literary Digest* 12 (4 April 1896), 681-82. [Essentially an English translation of Courbet's article]
- Courbet, Pierre. "La baleine de Jonas et le cachalot de la 'Princesse-Alice'." *Le cosmos: Revue des sciences et de leurs applications* 23 n.s. (7 March 1896), 420-21.
- Day, David. *The Whale War*. London: Routledge, 1987.
- Fox, Sir Francis. *Sixty-Three Years of Engineering, Scientific and Social Work*. London: John Murray, 1924.
- "Fox, Sir Francis." *The Dictionary of National Biography, 1922-1930*, pp. 313f. [Fox, Sir Francis.] Obituary from *Wimbledon Boro News*, 14 January 1927.
- [Fox, Sir Francis.] Obituaries from *London Times*, 8 and 11 January 1927.
- Fuge, Fred T. "A Sailor Swallowed by a Whale." Undated tract published by Pilgrim Tract Society, Randleman, North Carolina.
- Gook, Arthur C. *Can a Young Man Trust His Bible?* London: Pickering & Inglis, 1930. [The 1956 edition repeats the Bartley story but not that of Totten]
- \_\_\_\_\_. *Kan man stole paa sin Bibel?* Akureyri, Iceland, 1911.
- "Jonah and the Whale: True Story?" *Literary Digest* (27 June 1936), 25. [Briefly reviews article in same journal from 1896.]
- Kastner, William. "Man in Whale." *Natural History* 5 (1947), 145. [A letter from a reader inquiring about the Bartley story]
- König, E. "Jonah." In *A Dictionary of the Bible*, ed. James Hastings (New York: Scribner's, 1901), Vol. II, pp. 744-52. [Relates the Bartley story on p. 750]
- \_\_\_\_\_. "A Modern Jonah?" *The Expository Times* 17 (August 1905/6), 521. [Answers an inquiry from A. Lukyn Williams]
- "Man in a Whale's Stomach." *Yarmouth Mercury*, 22 August 1891, p. 8. [The original or "orthodox" account]
- "A Modern Jonah Proves his Story." *New York World*, 12 April 1896. [The "second account," containing the first person story]
- Murphy, Robert Cushman. Letter to the editor. *Natural History* 5 (1947), 145 and 190. [The author, an eminent cetologist, categorically denies the possibility of the Bartley story]
- Parville, Henri de. "Revue des sciences," in *Journal des débats, politiques et littéraires* from 16 January 1896 (pp. 1-2) and 12 March 1896 (pp. 1-2).
- Pieters, Albertus. "Jonah and the Whale." *Moody Bible Institute Monthly* (September 1930), 12-13.
- "Swallowed by a Whale." *New York Times*, 22 November 1896, p. 16, col. 4.
- "Swallowing Jonah Neat." *The Independent and Weekly Review* 120 (17 March 1928), 244. [A review of Wilson's article]
- Thomas, Roberta. Letters to the author about "Star of the East." 5 October 1989 and 4 July 1990. [From an archivist at the Maritime History Archive; includes a copy of the crew agreement for "Star of the East"]
- Whitcomb, John C., Jr. "Contemporary Apologetics and the Christian Faith." *Bibliotheca Sacra* (1977), 99-106. [A leading contemporary creationist alludes in a footnote to Wilson's account of the Bartley story, which he describes as "well-documented"]
- Williams, A. Lukyn. Letter to the editor. *Expository Times* 17 (June 1905/6), 429-30. [Opens the correspondence leading to Mrs. Killam's reply]
- \_\_\_\_\_. Letter to the editor. *Expository Times* 18 (1906/7), 239. [Includes replies to his inquiries from Mrs. Killam and Lloyds]
- Williams, W.C. "Jonah, Book of." In *The International Standard Bible Encyclopedia*, ed. Geoffrey W. Bromiley et al. (Grand Rapids: Eerdmans, 1982), Vol. II, pp. 1112-16. [Endorses Wilson's account of the Bartley story; the original ISBE, however, is silent on the Bartley tale]
- Wilson, Ambrose John. *Highways and Hedges, Streets and Lanes*. London: Williams & Norgate, 1929. [Autobiographical notes]
- \_\_\_\_\_. "The Sign of the Prophet Jonah and Its Modern Confirmations." *Princeton Theological Review* 25 (1927), 630-42.
- \_\_\_\_\_. "NOTES AND NOTICES: The Sign of the Prophet Jonah and Its Modern Confirmations." *Princeton Theological Review* 26 (1928), 618-21. [Wilson dismisses his critics, and all too neatly disposes of Mrs. Killam's testimony]

\_\_\_\_\_. "What Charles Darwin Really Found." *Princeton Theological Review* 26 (1928), 515-30. [An example of Wilson's anti-evolutionism]

### The Gorleston whale

Articles in the *Yarmouth Independent* from 13 June 1891 and 20 June 1891.  
File of relevant newspaper clippings from Great Yarmouth Library.

### Miscellaneous shark and whale stories, including serious studies

Bland-Sutton, Sir John. "The Psychology of Animals Swallowed Alive."  
Lecture delivered at the Royal College of Surgeons, 5 June 1925. Printed  
as Essay V (pp. 48-62) in his *On Faith and Science in Surgery*. London:  
Heinemann, 1930.  
Boulenger, E.G. *Queer Fish*. London: Partridge, 1925.  
Budker, Paul. *The Life of Sharks*. New York: Columbia University Press,  
1971.

\_\_\_\_\_. *Whales and Whaling*. New York: Macmillan, 1959. [Reviews the  
Bartley story and others]  
Bullen, Frank T. *The Cruise of the Cachalot*. London: Smith, 1898.  
Davis, Egerton Y., Jr. "Man in Whale." *Natural History* 6 (1947), 241. [Relates  
first hand story of a man swallowed (and killed) by a whale in the  
Arctic]  
Ellis, Richard. *The Book of Whales*. New York: Knopf, 1980.  
Macloskie, G. "How to Test the Story of Jonah." *Bibliotheca Sacra* 72 (1915),  
334-38. [Assesses scientific facts about whales; by a friend of McCosh,  
Asa Gray, and G.F. Wright]  
"Proving Jonah and the Whale." *Literary Digest* 47 (27 September 1913),  
528-29. [Reviews an article in another journal that presents various  
possibilities]  
Pusey, E.B. *The Minor Prophets: A Commentary*. 2 Vols. Grand Rapids: Baker,  
1950. Orig. publ. 1860. [Relates several interesting shark stories]  
Scheffer, Victor B. *The Year of the Whale*. New York: Scribner's, 1969. [Com-  
ments on Bartley and Egerton's story]  
"Who Swallowed Jonah?" *The Independent and Weekly Review* 102 (5 June  
1920), 331-32. [Suggests a whale shark]

## Weight By Light

Weight by light  
The waters of this age,  
The weathers of a world  
The fish shall swim,  
And do not tell the winds  
The shape a home shall take  
And do not dare to say  
They are the same,  
Fish and water,  
Wind and man.  
Light by light is light  
That tolls with time the hours  
That tell the distances to fame  
The moments no lottery shall run.  
What chance is there  
The fish shall swim aloud  
Or man upon the spinning earth  
Breath a word that bears  
His holy love,  
The sacred promise,  
That only God shall keep?

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# The Fundamentalist Origins of the American Scientific Affiliation

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*In the aftermath of the Scopes trial, few would have expected heirs of fundamentalists in 1941 to found an association dedicated to demonstrating the harmony between Christianity and science. What makes the origins of that organization, the American Scientific Affiliation, all the more remarkable from the perspective of 1925 is that it drew upon professors, not pastors, with earned doctorates in science from mainstream academic institutions, and was committed to a relatively open policy regarding theories about human origins, the very issue that had animated fundamentalists. This paper traces the continuity between conservative Protestant attitudes toward science in the Scopes era and the period of the ASA's founding. Focusing strictly upon fundamentalist opposition to evolution obscures the broader evangelical context out of which fundamentalists' attitudes toward science emerged. Through an examination of the writings of J. Gresham Machen, Frank E. Gaebelin, George McCready Price, and Harry Rimmer, and articles published by Moody Monthly in the 1920s and 1930s, this paper argues that fundamentalist perceptions of science were not out of character with both earlier and later evangelical habits of mind. To be sure, nineteenth-century evangelical Protestants had not been so quick to condemn the findings of scientists. But evangelical accommodations of science had often been for revivalistic, and, therefore, pragmatic reasons. Evangelicals writing about science during the fundamentalist controversy perpetuated the approach to science they inherited from the nineteenth century and their convictions proved an important stimulus to the founding of the ASA.*

When Will H. Houghton, president of Moody Bible Institute, in 1941 wrote F. Alton Everest, a professor of engineering at Oregon State University, about starting an organization that would demonstrate the harmony of Christianity and science, evangelicals with particularly sensitive ears must have thought they heard the secularists of the world snickering. After all, Houghton, who had attended college for only a semester, was a premier radio revivalist of the day, not a theologian or academic. Meanwhile, presiding over Moody Bible Institute had not nurtured Houghton's intellectual attainments. Though one of the largest Bible institutes in America, Moody had been founded, like similar institutions, along the lines of an adult vocational school, preparing people with meager educational backgrounds for evangelism and missions. Indeed, Houghton's letter to Everest, what Wilbur M. Smith called the "birth certificate of the American Scientific Affiliation," had all the earmarks of the mental habits that had resulted in the Scopes trial. Houghton expressed his concern that "some scientific facts [were] not having proper recognition, while some hypotheses [were] being

presented as laboratory truth." According to Houghton, the theory of evolution was still bedeviling fundamentalists who needed to get the word out that Christianity not only had the facts of the Bible but also the facts of nature on its side.<sup>1</sup>

One man who was spreading that word and who originated the idea for the ASA was Irwin A. Moon. A self-taught amateur scientist and formerly pastor of a church in Los Angeles, Moon left the pastorate in 1937 to devote his energies to his peculiar form of itinerant preaching. Like many fundamentalists, Moon feared the effects of standard collegiate scientific instruction upon impressionable students. His "Sermons from Science" were designed not only to counter such instruction but also to use the marvels of nature to convert young men and women. In the winter of 1937 Houghton added Moon to the Institute's expansive undertakings by making these "Sermons from

Special thanks goes to Kristal Otto, a graduate student at Wheaton College, for her help with research for this paper.



Science" part of the Bible Institute's Extension Department. Eventually, with Moon's help, Moody would produce its famous Science Films and create an Institute of Science in Los Angeles. But one of Moon's first successes was to enlist Houghton's support and Moody Bible Institute's resources for the ASA.<sup>2</sup>

Like many aspects of post-World War II evangelical intellectual life, the ASA's origins present a puzzle that deserves some consideration. The Affiliation's roots were firmly in the soil of fundamentalism and revivalism. Like William Jennings Bryan fifteen years earlier, Houghton and Moon were clearly worried about the moral and theological implications of scientific explanations that made no reference to God. Furthermore, their interest in science was pragmatic rather than theoretical. Their objections to evolution did not stem from an abstract concern to discover the proper models for understanding the workings of nature. Instead, science was something that was turning souls away from Christ. But, as Moon showed, it could also be used for evangelistic purposes.<sup>3</sup>

Yet these fundamentalist impulses were soon channeled into more conventionally academic directions. Houghton and Moon had the good sense to enlist evangelical scientists with reputable degrees and to let these scientists control the organization. Even more surprising, considering their fundamentalist heritage, was the decision of the ASA's leadership not to make opposition to evolution the organization's reason for existence. To be sure, the ministerial and scientific wings of the ASA's founders believed that anti-Christian attitudes in the academy could be traced, in the words of Everest, "directly to the door of evolutionary teaching." Still, the Affiliation's leaders decided not to adopt "deluge geology, anti-evolutionism, or anything else" as the organization's rationale. The ASA's goal was to demonstrate that Christianity was compatible with scientific investigation and that the Bible would withstand scientific scrutiny. As Everest explained to a would-be member, the ASA's leaders were convinced that the new organization would only be a "powerful tool in the hands of the Lord" if it did not wave "red flags before the eyes of scientists just to see the sparks fly."<sup>4</sup>

How, then, did the ASA emerge from the revivalist ethos of fundamentalism? Was the organization a fluke that the ASA's scientific leadership quickly steered into

more academically respectable channels? Or did fundamentalist attitudes to science contain elements that were favorable to the establishment of such an organization? The answer to these questions lies in the ASA's curious embodiment of the positions that fundamentalists elaborated during debates about science and religion in the 1920s and 1930s. Fundamentalists were committed, on the one hand, to the harmony of religious and scientific truth. But, on the other hand, they were even more concerned to counter the dangerous moral and social effects of evolution. This concern for America's spiritual well-being was an important catalyst in the formation of the ASA. During the late 1930s, as fundamentalists recovered from the public and ecclesiastical defeats of the 1920s, they established a series of networks and organizations that would carry the gospel out from the fundamentalist ghetto to the nation. The ASA, as it turns out, was the scientific component of that larger evangelical enterprise.

### Reuniting Science and Scripture

Understanding fundamentalist concerns about science is impossible without looking first at the way that liberal Protestants had appropriated modern science. Fundamentalists were, by definition, anti-modernist, and this was no less true when it came to science. Scientific discoveries or methods were rarely at issue. Instead, what bothered fundamentalists was that mainline Protestants had superficially reconciled modern science and Christian beliefs.<sup>5</sup>

Undoubtedly, the conflict over evolution in the 1920s came as something of a surprise. The so-called war between science and religion in the late nineteenth century had produced a compromise sufficiently durable to please all but fundamentalists and the most skeptical. What that compromise involved was a tidy separation between religion and science. Religion, many said, concerned piety and morality while science explored what was observable, rational, and physical. Conflict between religion and science was unlikely, if not impossible, because these two realms of human experience did not overlap.<sup>6</sup>

Many churchmen and scientists continued to invoke these terms during the 1920s. One writer attributed the controversy over evolution to the failure of fundamentalists to recognize the different aims of science and



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religion. Facts were the “business of science,” he argued, while religion’s purpose was to make “war against evil” and establish “righteousness, ... peace and good will.” Kirtley F. Mather, a loyal Baptist and Harvard geologist, believed that opposition to evolution stemmed from materialistic conceptions of natural history that contradicted Christ’s teaching of “fellowship and self-sacrifice.” Mather’s solution was to factor in “the role of service ... during geologic history,” thereby infusing evolution with “moral values of the finest Christian type.”<sup>7</sup>

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Mainstream biblical scholarship of the era reinforced the separation of religion and science by identifying Jesus’ ethical instruction as the essence of Christianity. According to sociologist Charles A. Ellwood, New Testament scholars had through their patient and extensive labors established Jesus as a “teacher of love.” He agreed with Harry Emerson Fosdick, who assured readers that critics had rediscovered “the historic Christ” and liberated the gospel from dogma. Meanwhile, many scientists cited the findings of biblical scholars to defend their own research by demonstrating that evolution did not contradict Christianity because it did not dispute Jesus’ teaching.<sup>8</sup>

Implicit in this truce between religion and science was the distinction between religion and theology, or between faith and dogma. Many explained the conflict over evolution as the result of a misunderstanding. Fundamentalists had mistaken their own doctrines — biblical inerrancy, the virgin birth, the resurrection, and the atonement, for example — for the essence of Christianity. But the controversy all but disappeared once Christianity was understood apart from formal theology. The Bible, accordingly, was not a book of doctrinal teaching, as fundamentalists maintained, but a collection of inspirational writings. Furthermore, genuine Christian faith did not depend upon intellectual assent to theological propositions. Instead, it consisted of vital religious experience. Nurtured by the non-confessional character of American Protestantism and philosophical developments in the late nineteenth-century, this distinction between theology and religion was best summarized by Shailer Mathews, dean of the Divinity School at University of Chicago, when he wrote, “Christianity is not a hard and fast system of philosophy or orthodoxy” but “the attempt of men to rely upon Christian principles in meeting the needs of their actual life-situations.”<sup>9</sup>

Ironically, by drawing the lines so sharply between religious experience and theological expression, liberal Protestants were in effect ceding concern for the intellectual implications of Christianity to fundamentalists. To be sure, liberals were far more involved and established in aca-

demical circles than fundamentalists and could make a good case that their recasting of Christianity was accomplished with the assistance of modern scholarship. Yet, fundamentalist attention to the theological ramifications of science was no less intellectually serious than liberal efforts to adapt Christianity to modern thought. Until recently, the fundamentalist concern for intellectual coherence was rarely noted by American historians who focused on the movement’s anti-intellectualism. But some fundamentalists of the period were quick to turn the epithet of anti-intellectualism back upon the proponents of Protestant modernism.<sup>10</sup>

None of the fundamentalists made more of liberal Protestantism’s tacit anti-intellectualism than J. Gresham Machen, professor of New Testament at Princeton and Westminster seminaries, and controversialist extraordinaire in the Northern Presbyterian Church. Machen himself had the kind of academic background that gave his charges credibility. He did his undergraduate work and a year of graduate study at the Johns Hopkins University, finished a masters in philosophy at Princeton University while completing the course of instruction at Princeton Seminary, and rounded out his studies with a year of advanced work in New Testament criticism at Marburg and Göttingen universities. Of course, as a defender of the New Testament’s historicity, Machen’s chief gripe against liberalism was theological. Liberal conceptions of God, Christ, human nature and salvation, for starters, departed to such a degree from historic Christianity that they deserved to be called by another name.<sup>11</sup>

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Yet Machen also argued that these departures from orthodoxy, though rooted in the desire to square Christianity with modern scientific conceptions, were fundamentally un-scientific and anti-intellectual. The science that Machen had in mind was not biology, geology, or physics. Rather, the latest findings from New Testament studies, Machen said, showed that the liberal conception of Jesus as “a mild-mannered exponent of indiscriminating love” was not at all compatible with modern research that showed the authors of the Gospels portraying Jesus as a supernatural person, fully aware of his sinlessness and messianic role. To be truly scientific, then, modern Protestants would have to come to terms with biblical scholarship. Such a task would force a choice between the Jesus of liberal Protestant fancies or the historic Christ of the Bible.<sup>12</sup>

Furthermore, liberal Protestantism was anti-intellectual, according to Machen, because it consigned Christi-

anity to the realm of ideals and experience, a realm entirely separate from scientific investigation. By reducing Christianity to its experiential and ethical aspects and by stripping it of its theological and historical content, liberals could perhaps dodge the grasp of science for a while, but eventually psychologists and philosophers would subject even the affective and moral dimensions of Christianity to criticism. Thus, the process of modifying Christianity to accommodate science showed a lack of intellectual resolve. Machen's charge of anti-intellectualism infuriated liberals, but made sufficient sense to be repeated by H. L. Mencken, the irreverent and skeptical journalist from Machen's home town, Baltimore. According to Mencken, "it is one thing to reject religion altogether, and quite another thing to try to save it by pumping out of it all its essential substance ... [reducing it] to a series of sweet attitudes possible to anyone not actually in jail for felony."<sup>13</sup>

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***"It is one thing to reject religion altogether, and quite another thing to try to save it by pumping out of it all its essential substance ... [reducing it] to a series of sweet attitudes possible to anyone not actually in jail for felony."***

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Part of Machen's appeal to Mencken, however, was his avoidance of the evolutionary controversy. Although Machen avoided the subject in public, in his correspondence he espoused a view of human origins not unlike his mentor at Princeton, Benjamin B. Warfield, who argued that God superintended the evolutionary process and intervened to create the human soul. Of course, this position was unusual among fundamentalists. But Machen's larger point — that the compartmentalization of science and religion was in effect an admission that Christianity did not correspond to scientific descriptions of reality — was one upon which most fundamentalists agreed. Indeed, one of the central fundamentalist arguments about science was that because all truth was God's truth, something could not be true in one sphere and false in the other. Fundamentalists were deeply committed to intellectual consistency and scorned liberals for abandoning the enterprise. Machen's way of achieving coherence was to defend the historicity of the New Testament. Because, at the very minimum, Christianity was bound up with a man who lived and died in first-century Palestine, he said, it could not be sequestered from the world of learning. Fundamentalist objections to evolution followed a similar logic. Because Genesis made particular claims about the origins of the universe and humankind, scientific findings on those matters could not be ignored.<sup>14</sup>

Of course, many fundamentalists defended the veracity of Scripture's creation account against evolution, but the most notable and influential were the creation scientists, George McCready Price and Harry Rimmer. Of the two, Price, a geologist at several Seventh-day Adventist schools

and author of many books, gave the appearance of being more accomplished in scientific matters. During the Scopes trial when Clarence Darrow asked William Jennings Bryan for scientists who shared his views, the only living scientist he could name was Price. Price's early books were published by denominational houses but by the 1920s his views were sufficiently popular to be published by the reputable Fleming H. Revell Company. Rimmer, whose only scientific training came during two terms at a homeopathic institution that required no more than a high-school diploma for admission, was a Presbyterian minister and evangelist and well-skilled in public delivery. He gave thousands of lectures and, by his own reckoning, never lost a debate. Together, Rimmer and Price popularized among fundamentalists a formidable alternative to mainstream scientific views.<sup>15</sup>

Reversing the village-atheist tactic of pointing out the apparent contradictions of the Bible, Price and Rimmer reveled in the apparent inconsistencies of science, often by pitting the findings of one discipline against those of another. For instance, in *The Facts of Biology and the Theories of Evolution*, Rimmer argued that the transmutation of species assumed the uniformity of cells since evolution taught that all forms of life came from a single primitive cell. But, as Rimmer was quick to note, biology had shown that all cells were not the same. Indeed, cells of different species varied as well as did cells within the human body. This simple fact disproved evolution and revealed the prejudice of established scientists who adhered to evolutionary views despite such basic evidence to the contrary. In a similar fashion, Price was ever alert to discrepancies in the fossil record. All over the world, he argued in *Back to the Bible*, rocks could be found that were out of order and that contradicted the "invariable order of the fossils" scientists had imposed upon the data. For Price and Rimmer, such facts did not simply prove the inadequacy of modern science and the willful ignorance of godless scholars. Most importantly, differences between cells and confusion in the fossil record confirmed the biblical account of the special creation of each species.<sup>16</sup>

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The details of the creationists' arguments are not as important as their larger claims about the relationship between science and religion. Though their methods and arguments may have been spurious, their explicit deference to the norms and models of science demonstrates that fundamentalists were no less desirous than their liberal antagonists of the authority and prestige that science could bestow. But fundamentalists were unwilling to abandon their traditional understanding of the Bible in order to make Christianity and science fit. So rather than reading Scripture as a source of moral and spiritual truth, they

developed a science that started with God's revelation and made the historical and scientific facts of the Bible central. In opposition, then, to liberal Protestants who contended that the truths and methods of religion were of a different order than those of science, fundamentalists insisted that all truth was ultimately from God and therefore harmonious. God "is the Author of both creation and [Scripture]," Rimmer wrote. "It follows as an elemental fact, that the Word of God and the works of God must agree." Price shared Rimmer's sentiments. "I cannot thus put asunder what God has joined together," he confessed; "to me religion and objective facts are only different aspects of one great unity." Some might content themselves with a religion that knew its place, but not the faithful remnant who, as Price put it, "in their hearts [were] still clinging to the Bible as in very deed the authentic word of God."<sup>17</sup>

### Darwinism's Social Threat

Fundamentalist cognitive objections to evolution should not obscure a deeper concern. Like most people, fundamentalists did not relish living with cognitive dissonance and wanted to know that the truths they affirmed on Sunday mornings were not going to be contradicted by what they might read in newspapers or books during the week. Still, the intellectual difficulties posed by evolution were not new in the 1920s. Like William Jennings Bryan, who believed that the earth was older than 6,000 years and accepted the possibility of the evolution of all species aside from man, many fundamentalists had probably made their peace with Darwinism in some fashion. Something else was at work in the rise of anti-evolution sentiments during the 1920s.<sup>18</sup>

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*Rimmer wrote, "It follows as an elemental fact, that the Word of God and the works of God must agree."*

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As much as fundamentalists complained that evolution was just a theory and lacked the support of evidence, the moral and social implications of evolution were far more disconcerting. Indeed, evolution's cultural threat makes more sense in explaining the particular timing of the anti-evolution crusade than do developments in biology, geology, or Rimmer's favorite, histology. As George Marsden has argued, World War I generated a cultural crisis that prompted conservative Protestants to question many of the assumptions about social progress that were prevalent in American culture. Because the terms and categories of evolution had often been used to support this progressive outlook, doubts about social improvement predisposed conservative Protestants to take issue with mainstream scientific thought. Furthermore, anti-German sentiments, fueled by the war, helped to unite evolution, liberal Protestantism, and German barbarism in fundamentalist minds. Germany, many argued, was a prime example of the moral and social decline that followed from evolution's godless principles. Bryan made the connection between

Darwin's biology and German militarism explicit when he blamed the war upon the intelligence of this so-called science. "The battleships," Bryan wrote, "were built by college graduates; ... scientists mixed the poisonous gases and manufactured liquid fire. Intellect guided the nations, and learning without the heart made war so hellish that civilization itself was about to commit suicide."<sup>19</sup>

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Darwinism's social threat was immediately evident in the controversies during the 1920s over education. In fact, Bryan, the cause celebre of the anti-evolution campaign, was drawn into the fray precisely because of evolution's dire threat to students. He had opposed Darwin's teaching as early as 1904 and his arguments for the Bible's infallibility changed little over time. What did change, however, was the intensity and pitch of Bryan's misgivings. A statistical study of the effects of college education upon religious beliefs published in 1916 confirmed Bryan's suspicions. The study, conducted by James H. Leuba, a professor of psychology at Bryn Mawr, found that 40 to 45 per cent of college graduates either denied or doubted many of the religious convictions that they held when then entered college. Leuba's findings squared with Bryan's own perceptions as a frequent visitor and lecturer at colleges throughout the country. According to his wife, Bryan received many letters from parents all over the country complaining "that the state schools were being used to undermine the religious faith of their children."<sup>20</sup>

Still, secondary education, not higher education, was what animated fundamentalists most and what sent Bryan to Dayton. Indeed, the anti-evolution crusade must be understood against the backdrop of public education's dramatic expansion. High school textbooks in the life sciences, as Edward J. Larson has shown, introduced students to evolutionary theories as early as the 1880s, and by 1920 evolution was standard fare. Fundamentalist opposition to Darwinism in the 1920s cannot be explained, then, by a sudden influx of evolutionary teaching into public schools. But if the content of science instruction did not change, the recipients of that instruction did. In 1890 the federal Commission of Education reported that America's 2,526 public high schools enrolled roughly 202,963 students. By 1920 those numbers had increased to 1,851,968 students in 14,326 schools. Larson concludes that "the public perception of such a change is the stuff of which popular crusades can be made." The anti-evolution crusade thus coincided with an expansion of public schooling that taught its students the lessons of evolution. Even Bryan admitted that evolution had not done more harm before the 1920s because a smaller percentage of children had attended high school then.<sup>21</sup>

The specific harms that evolution generated were increasing degeneracy and immorality. Indeed, fundamentalists' scientific and theological objections to Darwinism were subsumed in the more basic desire to preserve traditional morality and the social order that depended upon that morality. Fundamentalists, after all, were heirs of an evangelical heritage that had often appropriated the findings of science or used arguments for God's existence and the truthfulness of Scripture for the very pragmatic reason of upholding Christian virtues. Indeed, throughout American evangelical history, one standard that could be called upon to adjudicate disputed intellectual matters was morality. If a particular idea, whether religious, philosophical, or scientific, appeared to undermine evangelical convictions about human responsibility and the certainty of an afterlife where individuals would be rewarded or punished for their actions, said idea was automatically suspect.<sup>22</sup>

Bryan's arguments are very interesting in this regard. Despite his claims that Darwin's hypothesis was not as "firmly established as the law of gravitation or the roundness of the earth," the scientific correctness of evolution is a minor theme in Bryan's writings. Instead, he repeatedly underlined the dire consequences for religion and society that followed the acceptance of evolution. For instance, Darwinism took Darwin from an orthodox believer — one who often quoted the Bible as an "unanswerable authority on some point of morality" — to an agnostic. If that was what Darwinism did for Darwin, Bryan argued, imagine its effects upon "immature students who are throwing off parental authority and who gladly accept any hypothesis that will justify them in throwing off the authority of God." Not only did evolution undermine God's authority, but by linking humans and beasts physiologically, it denied humankind's spiritual capacity and so led to "the abandonment of belief in a future life with its rewards and punishments." Bryan's concerns went beyond the next generation of Christians to the very foundation of Christian civilization. Opposition to evolution was therefore a continuation of the statesman's social activism. In his mind Christianity provided the only basis for "universal peace" and "universal disarmament." But Darwinism robbed Christ of his glory and made him "impotent to save."<sup>23</sup>

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Frank E. Gaebelein, an evangelical educator and thoughtful advocate of Christian scholarship, resorted to the same sort of logic in one of the more interesting debates of the period, an exchange between him and Harry Elmer Barnes, a militant secularist, in the *North American Review*, a journal with deep roots in the patrician culture of New England gentlemen. Gaebelein's debate with Barnes is interesting because throughout much of it he made cogent arguments for Christianity's credibility. For instance, he

showed a good knowledge of biblical criticism and scientific developments and explained intelligently how belief in traditional Christian verities was compatible with modern learning. Yet, in the end the debate digressed into a discussion of Christianity's effectiveness in making individuals and society better. Barnes noted the defects in Gaebelein's utilitarian case by pointing out the happiness that Islam, Buddhism and atheism had inspired among their followers while observing that Christianity had promoted "persecution, witchcraft, inquisitions, incredible tortures, intolerance, ... wars, avarice and other untold horrors." Gaebelein responded by taking a "proud" stand on the argument from Christian experience. The grace of God had changed numerous lives and cultures for the better, from the cure of alcoholics to the "beneficent effects of missions." On the basis of the "verifiable fact" of Christ's transforming power Gaebelein challenged Barnes "and all our other free-thinking intelligentsia to produce a single similar trophy of atheism, agnosticism, utilitarian hedonism, or even modernism."<sup>24</sup>

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*Darwinism robbed Christ of his glory and made him "impotent to save."*

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George McCready Price, Bryan's lone scientific authority, was equally concerned to show Christianity's positive influence by pointing out the lethal effects of evolution on society. In his book, *Poisoning Democracy: A Study of the Moral and Religious Aspects of Socialism*, Price gave voice to the fears and suspicions of Bolshevism that were common among many Americans during the Red Scare after World War I. If his attack upon communism was unsurprising, his strategy of linking socialism and evolution was indicative of fundamentalist objections to evolution. As a result of the wide acceptance of evolution, Price lamented, "the world as a whole has completely lost its bearings regarding the fundamentals of morals and ethics." This "pagan philosophy" with its "ruthless ethics" was responsible for Germany's aggression in World War I and for the "doctrine of class war" that Karl Marx's followers were invoking around the world. With such connections established, Price spent the rest of the book tracing socialism to German philosophy and "the teachings of biological and geological science." Like Bryan, Price was no less convinced of the indispensability of Christianity to a moral and just society. But unlike Bryan, whose post-millennialism led him to believe that a revival of religion could put human history back on track, Price was a pre-millennialist and concluded on a somber note. The world's "impending doom" was certain and Christians needed the perseverance and patience to avoid "the frantic temporary expedients of those who would seek to prolong the present dying agonies of a doomed world."<sup>25</sup>

Although the *Moody Monthly* regularly published articles by Price, its other contributors were not quite so willing to acquiesce before the inevitable demise of American society. Some signs of hope, for instance, surfaced

in the magazine's concerns about the next generation of Christians who were attending America's schools and colleges. "We are going through an era of collegiate and high school moral turpitude," warned one writer, in large measure because "man is reduced in the minds of the pupils to the level of the beast, via a so-called scientific evolutionary hypothesis." Another complained that modern educators were using "young men as laboratory material for teachings that are more than doubtful." The results of such teaching were alarming and depressing. According to one author, the reason why fourteen young men had committed suicide over a two month period in 1927 was that evolutionary teaching deprived modern education of a spiritual basis and bred skepticism and despair. But such a gloomy situation did provide a course of action and a glimmer of hope. The proverbial silver lining was the necessity of Christian education. If young Christians could not receive a proper education at a liberal arts college, then, advised one minister, they should go to a Bible institute, a place "where the Word is taught" and where they could learn those things that would enable them to defend their faith.<sup>26</sup>

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*According to one author, the reason why fourteen young men had committed suicide over a two month period in 1927 was that evolutionary teaching deprived modern education of a spiritual basis and bred skepticism and despair.*

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While the concern of parents to pass on their beliefs to their children was a catalyst for combating evolution, Darwinism touched a deeper nerve. It went to the very heart of the course of human history and America's place in God's plan. Fundamentalist objections, thus, went beyond utilitarian arguments about the moral degeneracy that followed from evolutionary teaching to examples of the cultural crisis to which Darwinism had brought America and the world. Fundamentalists repeatedly ridiculed the idea, commonly implied by evolution's advocates, that society had shown considerable progress. To demonstrate the folly of such a proposition one editorial in the *Moody Monthly* asked,

Is man better morally today than formerly? Has science brought improvement into his soul? Who will hazard an affirmative reply? Is man not today as selfish, as covetous, as boastful, as proud, as blasphemous as he ever was?

Nations also provided counter-evidence to evolutionary assumptions about progress. The United States, according to one Philadelphia minister, was one such example. Evolution and theological modernism had undermined the Lord's Day, the home, and the school, the institutions upon which national well being depended. An even better example of national decay was "Red Russia," a society that had followed "evolution to its conclusion and eliminated Christ." The specter of communism, in fact, intensified fundamentalist opposition to evolution and

prompted sweeping generalizations about the contagion of modern science. Marx and Engels, wrote one author, applied Darwin's theories about natural history to human history and the spread of communism was a sure sign that the spirit of the anti-Christ was abroad in the world. The links between atheism, communism, and evolution made another minister even more suspicious of American schools and colleges where the hypothesis of evolution was being taught as a fact irrespective of the evidence.<sup>27</sup>

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*For them, Darwinism was synonymous with godlessness and unbelief...*

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The debates over evolution, then, brought to a head a basic cleavage among American Protestants about the character of their society. Fundamentalists and modernists were antagonists in a controversy that pitted Protestants who supported and identified with established cultural institutions and those who were at odds with the general direction of American society. The idea that God was immanent in the evolution of nature was, of course, quite congenial to liberal Protestants who were committed to constructing a Christian society through traditional religious and social structures. Fundamentalists believed, however, that God's grace was an immediate and supernatural disruption of the natural course of human affairs and so they were inherently suspicious of human efforts to improve society. For them, Darwinism was synonymous with godlessness and unbelief because its naturalistic explanation of human origins denied God's creative and gracious hand in nature and human history. If modern science denied God's sovereign intervention into history, then, fundamentalists reasoned, a society that relied upon and nurtured the application of science to all areas of life was one where atheism and immorality were sure to prevail.<sup>28</sup>

## Revivalism, Science and the ASA

Fears for a civilization that exalted science over the Bible naturally fostered a negative view of the science. Fundamentalists' cultural pessimism, therefore, foiled their otherwise positive estimate of science that flowed from their commitment to demonstrating the unity of God's revelation in nature and the Bible. Yet, opposition to science should not be interpreted necessarily as a form of anti-intellectualism. Fundamentalists invested a good deal of intellectual capital in the idea of objective and absolute truth, conceived of faith in highly rational terms and defined that faith along strict doctrinal lines. Rather, their objections to science were a form of social protest. Indeed, since the 1920s, fundamentalist and evangelical discontent with modern society has been expressed often in denunciations of science and the educational establishment. They have correctly perceived that science, not religious tradition or revelation, holds tremendous authority in modern culture. Putting restraints upon the claims of scientists is just one way of asserting the rights of ordinary believers. But the reverse is also true. In the same way

that fundamentalist repudiation of modern science indicated displeasure with society, appropriating science or demonstrating its harmony with Christianity reflected a desire to win back the culture. With the exception of a Machen or a Gaebelien, positive fundamentalist attitudes to science stemmed less from an interest in the life of the mind than from concerns to reach the lost.<sup>29</sup>

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*In general, positive fundamentalist attitudes to science have stemmed less from an interest in the life of the mind than from concerns to reach the lost.*

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The assistance that science could provide for evangelistic endeavors helps to explain how fundamentalists who were generally on the defensive with respect to science hatched the idea for the ASA. Fundamentalists were heirs of two religious traditions, pietism and revivalism, that were inimical to the life of the mind. Pietism first found expression in 17th century Protestant churches. It stressed the importance of vital Christian experience over formal theology, the psychological aspects of faith over the rational and objective elements of Christianity. Revivalism was a particular version of pietism that swept churches in England and America as early as the first half of the eighteenth century. It became the dominant force in American Protestantism and reinforced the anti-intellectual tendencies of pietism. Revivalists called upon believers to accept Christ themselves and encouraged the idea that everything of value in the Christian faith had to originate from the individual's own conversion experience. As a result, revivalism was deeply suspicious of tradition, especially traditions of learning. By encouraging people to take the step of faith for themselves, evangelicals came to distrust most forms of knowledge that the individual believer could not figure out for him or herself. Revivalism and pietism, then, exalted the ordinary individual over learned elites, intuitive experience over mediated knowledge, and practical over theoretical considerations. For these reasons American evangelicals have not encouraged or been an audience for first order scholarship. The pragmatic desire for tangible results, whether in holy lives or mass conversions, has been a sure criterion for evaluating ideas or institutions, and thus the hallmark of the evangelical mind.<sup>30</sup>

The intellectual legacy of pietism and revivalism was especially evident in fundamentalist opposition to evolution. Fundamentalists were generally uninterested in and oblivious to the theoretical aspects of evolutionary theory. They were much more concerned with the practical results of such scientific teaching. All around them they could see signs of what evolution was doing to their society. Its effects upon the churches and the schools, two important institutions for passing on the faith and for maintaining social stability, were particularly alarming. Given the individualistic and pragmatic character of evangelicalism, it was fitting that the most visible chapter of the evolution controversy was a political struggle that pitted

northeastern elites fully in sympathy with the educational establishment against simple believers who wanted to decide for themselves what their children would learn and whether evolution was true.

Exchanges between Clarence Darrow and William Jennings Bryan at the Scopes trial were indicative of the intellectual substance that informed this political conflict. During one interchange Darrow asked Bryan what he thought about a particular interpretation of the Bible. Bryan responded, "I do not think about things I don't think about." Darrow followed by asking, "Do you think about things you do think about?" Bryan answered, "Well, sometimes." Despite such gaffs in his testimony, Bryan was clear about one of the central issues of the Scopes case when in his opening remarks he objected to the testimony of scientists. "Why is it not absurd," Bryan asked, "to call experts from New York and Illinois to challenge the right of the people of Tennessee to legislate as they please, and according to their own sense of responsibility and their own judgment as to what is harmful and as to what is objectionable from a Bible standpoint?" As a good evangelical, Bryan knew that the people, no matter how well educated, were competent to decide whether the Bible or Darwin was right. And he also knew and was able to articulate for many fundamentalists that far more important than such theoretical matters as scientific or exegetical arguments was the social and moral decay that evolution was producing in America.<sup>31</sup>

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*As a good evangelical, Bryan knew that the people, no matter how well (or poorly) educated, were competent to decide whether the Bible or Darwin was right.*

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As dispensationalists, fundamentalists were already inclined to think that society would degenerate further and that the end of the age was near. The public defeats that they experienced through their inability to purge evolution from the schools and liberalism from the churches heightened fundamentalist cultural pessimism. As a result, during the late 1920s and throughout the 1930s fundamentalists withdrew from mainstream society to form their own institutions that would sustain the faithful remnant until the second coming. Yet, as much as they felt estranged from the dominant characteristics of modern American society, fundamentalists were also heirs of a religious tradition that had been dominant in America's past. Consequently, while functioning as outsiders, fundamentalists still thought of themselves as insiders who were responsible for preserving the evangelical faith and Christian civilization in America.<sup>32</sup>

During the late 1930s, as fundamentalists recognized that they could not abandon their neighbor while waiting for the Lord's return, they initiated a determined effort to reestablish evangelical Christianity in America. The failed public campaigns of the 1920s, however, provided



an important lesson for evangelical renewal. Rather than using ecclesiastical or civil courts, fundamentalist leaders turned to the revival as the surest means for righting America's wrongs. The new medium of radio broadcasting was especially important to this project. In the years just prior to the ASA's founding, Will Houghton, along with Charles Fuller and Donald Grey Barnhouse were among the most popular preachers on the air. Houghton, under the auspices of Moody Bible Institute, started a series of broadcasts entitled, "Let's Go Back to the Bible," that played on major stations in New York, Boston, Buffalo, Pittsburgh, Cincinnati, Detroit, Chicago, Denver and Philadelphia. His initial message captured fundamentalist ambivalence about American society and the growing sense that revival could dramatically change the nation's direction.

The spiritual condition of America is deplorable, indeed .... Conscience has gone into an eclipse, and moral standards have been thrown on the scrap heap .... Yet God has a stake in the nation and He is concerned that his word of warning and invitation shall be given forth. Extraordinary days call for extraordinary methods, and the time has come to carry our message to the people who will not seek a message .... Oh, that men might see again what God's Word has meant in the life of America and what it will mean if our people return to it in repentance and faith.<sup>33</sup>

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*Interestingly enough, the ASA was one of the first manifestations of this new spirit of cooperation among evangelicals.*

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This resurgence of revivalistic zeal produced a number of cooperative ventures among fundamentalists that were designed to carry the message of revival forward. The crisis generated by the threat of another war also convinced fundamentalists leaders of the need to unite for the purpose of promoting revival. Individuals with ministries of their own increasingly talked of laying aside their own differences in order to further a national revival. J. Elwin Wright, the leader of the New England Fellowship, toured the country between 1939 and 1941 calling evangelicals from all denominations to promote a revival that would restore a Christian witness. Wright's efforts had the blessing of the two leading radio revivalists, Will Houghton and Charles Fuller. And out of Wright's labors came the coalition of "progressive fundamentalists" who were responsible for the resurgence of evangelicalism during the 1940s. Sometimes called "The New Evangelical Coalition," this movement brought together such important leaders as Billy Graham, Harold Ockenga and Carl Henry, and gave birth to such influential institutions as the National Association of Evangelicals, Fuller Theological Seminary, and *Christianity Today*. The primary impulse behind this new evangelicalism was to reform fundamentalism. Houghton, Wright and Ockenga had not in any way abandoned fundamental Christian truths. But they did want to move fundamentalism beyond its separatistic and combative ways to have a positive influence upon America.<sup>34</sup>

Interestingly enough, the ASA was one of the first manifestations of this new spirit of cooperation among evangelicals. In fact, the new evangelical initiative of the early 1940s helps to explain why fundamentalists who were still suspicious of evolutionary views came together to form a scientific organization. Individual leaders within the ASA were well connected to the greater evangelical enterprise. Will Houghton, as already noted, was a prominent leader in devising a strategy for national revival and the man who provided the impetus for the ASA. Houghton's recruitment of Alton Everest was no accident, since Everest had been a classmate of Irwin Moon's wife at BIOLA and Moon and Everest had talked about an organization like the ASA as early as 1940. Another sign of the "progressive fundamentalist" network was Houghton's selection of Peter W. Stoner, a professor of mathematics and astronomy at Pasadena City College. Stoner was a member of Pasadena's Lake Avenue Congregational Church, the temporary site for Fuller Seminary in 1947 and the congregation where Charles Fuller held his membership.<sup>35</sup>

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*True to their evangelical and fundamentalist heritage, the ASA's scientific and ministerial leaders demonstrated a utilitarian attitude toward science.*

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Furthermore, several of the principles that gave momentum to plans for the ASA bore the imprint of the new evangelicalism. True to their evangelical and fundamentalist heritage, the ASA's scientific and ministerial leaders demonstrated a utilitarian attitude toward science. This tendency manifested itself in the Affiliation's organizers' concern for the effects of scientific instruction upon the faith and morals of young people. Moon's original idea for the ASA stemmed from his countless encounters with students who repeatedly asked him whether faith in the God of the Bible was compatible with the instruction they received in science courses. As a result, two of the first aims of the ASA were to help Christian students in the university and to enable lay Christians to understand science better and the place of interpretation in both science and Scripture. To be sure, these attitudes reflected older Christian beliefs about the unity of God's revealed truth in nature and the Bible. But they also revealed a certain mental habit, typical of evangelicals, that evaluated science more from the perspective of whether it confirmed or denied the faith rather than a genuine interest in scientific discovery. The ASA's founders, like many evangelicals in the past, were interested more in the application of science — specifically in this case, the application of science to religion — than in the sheer delight of researching the complexity of God's handiwork.<sup>36</sup>

Another telltale sign of the ASA's roots in the new evangelical coalition was its commitment to unity and cooperation. The specific item upon which ASA leaders



called for unity was evolution. Though opposed to evolution and its pernicious effects, the ministers and scientists who shaped the ASA were agreed that the organization should not adopt a specific rendering of Genesis' scientific implications that would become a criterion for membership. In fact, at the planning meeting for the Affiliation, several expressed disagreement with Peter Stoner's interpretation of Genesis but did not think this was sufficient grounds for disrupting the organization. According to Everest in his account of these early deliberations, the success of the ASA was premised upon the membership's ability to agree on basics, to exhibit tolerance on divisive matters, and to refrain from adopting a standard ASA interpretation of scientific matters.<sup>37</sup>

The ASA's commitment to tolerance was remarkably similar to the pragmatic rationale for the National Association of Evangelicals, probably the most visible organization of the new evangelical coalition. Like the ASA, the leaders of the NAE wanted to put aside fundamentalist nitpicking in order to unite evangelicals in bringing revival to America. The doctrinal or ecclesiastical issues that might divide evangelicals were considered unimportant compared to the greater burden of reaching the lost. In a similar fashion, the ASA overlooked the specifics of different ways to understand creation. The reasons for exhibiting tolerance on scientific details, however, stemmed less from intellectual openness than from pragmatic need. The majority of the ASA's founders were no less opposed to evolution than the most stalwart creationists. Yet they knew that getting bogged down in specific theories about creation would yield results similar to debates between fundamentalists about separation from the mainline churches. The architects of the new evangelical movement were convinced that precise ideas, whether theological or scientific, should not detract from the more important task of revival. This meant that just as the NAE presented itself as more moderate than the militant American Council of Christian Churches headed by Carl McIntire, the ASA tried to preserve its own identity apart from the aggressive anti-evolutionary views of its early rival, Price's Deluge Geology Society.<sup>38</sup>

Members of the ASA and other historians will have to decide to what extent the fundamentalist origins of the Affiliation have affected the development of the organization. But the influence of fundamentalism upon the founding of the ASA is clear. The organization was conceived in the hopes for a national revival, took shape in response to growing fears about evolution's effects upon society, and was designed to unite fundamentalists for the common goal of evangelistic outreach. Ronald Numbers has argued that evangelical scientists in the twentieth century have lived uncomfortably in two intellectual worlds, the religious world of creation and the scientific world of evolution. The fundamentalist origins of the ASA suggest another source of ambivalence that may be even more difficult to overcome, namely, the tension between pursuing science for the sake of exploring God's creation, and following science in order to reach the lost and improve society. If evangelical scientists want to shore up their flagging support from the evangelical laity, they

might do well to address this dilemma before attempting to reconcile Genesis and evolution.<sup>39</sup> \*

## NOTES

- <sup>1</sup>Smith, *A Watchman on the Wall: The Life Story of Will H. Houghton* (Grand Rapids, 1951), 142; Houghton quoted in Smith, *Watchman*, 142. The best treatment of Bible institutes can be found in Virginia Lieson Brereton's *Training God's Army: The American Bible School, 1880-1940* (Bloomington, 1990).
- <sup>2</sup>On Moon, see Smith, *Watchman*, 144-8; and Mark A. Kalthoff, "Evangelical Scientists: The American Scientific Affiliation as the Twentieth-Century American Interface between Science and Christianity," Paper presented at the Evangelicals, Voluntary Associations, and American Public Life Conference, Institute for the Study of American Evangelicals, June, 1991, 4.
- <sup>3</sup>Post-World War II evangelical intellectual life has not received sustained attention, but valuable insights can be found in Mark Noll, *Between Faith and Criticism: Evangelicals, Scholarship, and the Bible* (San Francisco, 1986), chaps. 5-9; George M. Marsden, *Reforming Fundamentalism: Fuller Seminary and the New Evangelicalism* (Grand Rapids, 1987); and idem, "The State of Evangelical Christian Scholarship," *Christian Scholar's Review* 27 (1988), 347-60.
- <sup>4</sup>Everest, "What is The American Affiliation of Scientists", typed manuscript, Dec. 6, 1941, and Everest to A. P. Kelly, Oct. 4, 1942, quoted in Kalthoff, "Evangelical Scientists," 7, and 24, note 12.
- <sup>5</sup>The standard work on fundamentalism is George Marsden's *Fundamentalism and American Culture: The Shaping of Twentieth-Century Evangelicalism: 1870-1925* (New York, 1980).
- <sup>6</sup>See for example, Albert Edward Wiggam, "The Religion of the Scientist," *World's Work* 50 (1925): 391-9; Harry Emerson Fosdick, "Science and Religion," *Harper's* 152 (1926): 296-300; Edwin Grant Conklin, "Science and the Faith of a Modern," *Scribner's Magazine* 78 (1925): 451-8; Charles A. Ellwood, *The Reconstruction of Religion* (New York, 1922); William E. Hammond, *The Dilemma of Protestantism* (New York, 1929); Shailer Mathews, *The Contributions of Science to Religion* (New York, 1924); and Jabez T. Sunderland, *Evolution and Religion* (Boston, 1925). On late nineteenth-century conflicts between science and religion, see James R. Moore, *The Post-Darwinian Controversies: A Study of the Protestant Struggle to Come to Terms with Darwin in Great Britain and America 1870-1900* (Cambridge, 1979); David N. Livingstone, *Darwin's Forgotten Defenders: The Encounter Between Evangelical Theology and Evolutionary Thought* (Eerdmans, 1987); James Turner, *Without God, Without Creed: The Origins of Unbelief in America* (Baltimore, 1985), chap. 6; Frederick Gregory, "The Impact of Darwinian Evolution on Protestant Theology in the Nineteenth Century," in *God and Nature* 369-90; and Glenn Altschuler, "From Religion to Ethics: Andrew D. White and the Dilemma of Christian Rationalism," *Church History* 47 (1978): 308-24.
- <sup>7</sup>Durant Drake, *The New Morality* (New York, 1928), 253, 255; Mather, "The Psychology of the Anti-Evolutionist," in *Controversies in the Twenties: Fundamentalism, Modernism, and Evolution*, ed. Willard B. Gatewood, (Nashville, 1969), 194, 196. See also Harry Emerson Fosdick, "Science and Religion," *Harper's* 152 (1926): 299-300; and Havelock Ellis, *The Dance of Life* (Boston, 1924), 190-5.
- <sup>8</sup>Ellwood, *Reconstruction of Religion*, 147, 151; Fosdick, *The Modern Use of the Bible* (New York, 1924), 272-3. See also Shailer Mathews, *The Faith of Modernism* (New York, 1924), chap. 3; William Pierson Merrill, *Liberal Christianity* (New York, 1925), chap. 5; J. Macbride Sterrett, *Modernism in Religion*, (New York, 1922), chap. 7; Eldred C. Vanderlaan, "Modernism and Historic Christianity," *Journal of Religion* 5 (1925): 225-38; Nolan R. Best, *Inspiration* (New York, 1923); George A. Barton, *Jesus of Nazareth, A Biography* (New York, 1922); Robert Andrews Millikan, *Science and Life* (Boston, 1924), 53-4; and H. G. Wells, *The Outline of History* (New York, 1921), 499-505.
- <sup>9</sup>*Faith of Modernism*, 16-7. See also W. S. Rainsford, "The New Religious Reformation," *World's Work* 50 (1925): 391-9; Conklin, "Science and the Faith of a Modern," Roy Wood Sellars, *Religion Coming of Age* (New York, 1928), 122-32; Charles A. Dinsmore, *Religious Certitude in an Age of Science* (Chapel Hill, 1924); *Contributions of Science to Religion*, 1-13; and Fosdick, *Modern Use of the Bible* chap. 4. On the anti-confessional character of American evangelicalism, see Nathan O. Hatch, "Sola Scriptura and Novus Ordo Seclorum," and George M. Marsden, "Every One's Own Interpreter? The Bible, Science, and Authority in Mid-Nineteenth-Century America," in *The Bible in America*, ed. Nathan O. Hatch and Mark A. Noll, (New York, 1982), 59-78, 79-100. For the influence of philosophical idealism on American Protestantism, see Bruce Kuklick, *Churchmen and Philosophers: From Jonathan Edwards to John Dewey* (New Haven, 1985), chaps. 13-5; and James Turner, *Without*

- God, Without Creed: The Origins of Unbelief in America* (Baltimore, 1985), chaps. 6-9.
- 10 Richard Hofstadter, *Anti-Intellectualism in American Life* (New York, 1962), 117-36, is a fairly representative treatment of fundamentalism prior to the work of Paul A. Carter, "The Fundamentalist Defense of the Faith," in *Change and Continuity in Twentieth-Century America: The 1920s*, ed. John Braeman, Robert H. Bremmer, and David Brody, (Columbus, 1968), 179-214; Ernest R. Sandeen, *The Roots of Fundamentalism: British and American Millenarianism* (Chicago, 1970); and Marsden, *Fundamentalism and American Culture*.
  - 11 Machen makes this argument most forcefully in *Christianity and Liberalism* (New York, 1923).
  - 12 *Ibid.*, chap. 5; quotation on 84.
  - 13 Machen, *Ibid.*, 5-8; Mencken, "Doctor Fundamentalism," *Baltimore Evening Sun* (Jan. 18, 1937).
  - 14 On the Princeton Theology and evolution, see Warfield, "Calvin's Doctrine of Creation," in *The Princeton Theology: Scripture, Science, and Theological Method from Archibald Alexander to Benjamin Warfield*, ed. Mark A. Noll, 293-8; and David N. Livingstone, *Darwin's Forgotten Defenders: The Encounter Between Evangelical Theology and Evolutionary Thought* (Grand Rapids, 1987), 112-22.
  - 15 On Price and Rimmer, see Ronald L. Numbers, "The Creationists," in *God and Nature: Historical Essays on the Encounter Between Christianity and Science*, ed. David C. Lindberg and Ronald L. Numbers, (Berkeley, 1986), 398-401.
  - 16 Rimmer, *The Facts of Biology and the Theories of Evolution* (Glendale, 1929), 10-13, 26; Price, *Back to the Bible or The New Protestantism* (Takoma Park, 1916), chap. 3.
  - 17 Rimmer, *The Harmony of Science and the Scriptures* (Glendale, 1927), 3; Price, *The Phantom of Organic Evolution* (New York, 1924), 9; *idem.*, *Back to the Bible*, 6.
  - 18 For Bryan's views on evolution, see Numbers, "The Creationists," 402; and Lawrence W. Levine, *Defender of the Faith, William Jennings Bryan: The Last Decade, 1915-1925* (New York, 1965), 260-72.
  - 19 Bryan, "Darwin's Christ Was Nobody," in *Controversy in the Twenties: Fundamentalism, Modernism, and Evolution*, ed. Willard B. Gates, (Nashville, 1969), 137. For the impact of the war on fundamentalism, see Marsden, *Fundamentalism and American Culture*, 141-52. For the influence of evolution on American thought, see Paul F. Boller, *American Thought in Transition: The Impact of Evolutionary Naturalism, 1865-1900* (Chicago, 1969); and the essays in *Evolutionary Thought in America*, ed. Stow Persons, (New Haven, 1950).
  - 20 Bryan's wife quoted in Levine, *Defender of the Faith*, 267. The book that confirmed Bryan's suspicions was James H. Leuba's *The Belief in God and Immorality* (Boston, 1916).
  - 21 Larson, *Trial and Error: The American Controversy over Creation and Evolution* (New York, 1989 [1985]), chap. 1, quotation and figures from 26, 27.
  - 22 On the centrality of morality for 19th century evangelicalism, see Timothy L. Smith, *Revivalism and Social Reform: American Protestantism on the Eve of the Civil War* (Baltimore, 1980 [1957]); Donald H. Meyer, *The Instructed Conscience: The Shaping of the American National Ethic* (Philadelphia, 1972); and with special bearing on science, Charles E. Rosenberg, "Piety and Social Action: Some Origins of the American Public Health Movement," and "Science and Social Values in Nineteenth-Century America: A Case Study in the Growth of Scientific Institutions," in *No Other Gods: On Science and American Social Thought* (Baltimore, 1976), chaps. 6 and 8. On the perpetuation of these convictions among contemporary evangelicals, see Grant Wacker, "Searching for Norman Rockwell: Popular Evangelicalism in Contemporary America," in *The Evangelical Tradition in America*, ed. Leonard I. Sweet, (Macon, 1984), chap. 10.
  - 23 Bryan, "Darwin's Christ," 135, 138; *idem.*, "Education without Morality," in *Controversy in the Twenties*, 230. On the connections between Bryan's involvement in the evolutionary controversy and his political activism, see Levine, *Defender of the Faith*, 268.
  - 24 Gaebelein, "An Evangelical's Defense," *North American Review* 232 (1931), 26-32; *idem.*, "More Dust," *North American Review* 232 (1931), 531-41, quotations on 533, 534, 537; and Barnes, "Throwing Dust," *North American Review* 232 (1931), 303-12, quotations on 310.
  - 25 (New York, 1921), 24, 25, 31, 157.
  - 26 "Morality of the High School," *Moody Monthly* 28 (July, 1928), 503; J. D. Eggleston, "What Makes a School Christian?" *Moody Monthly* 31 (Sept., 1930), 15; John W. Ham, "Atheism and Suicide in Our Universities," *Moody Monthly* 27 (April, 1927), 388; C. C. Meeden, "Should the Prospective Minister Attend College?" *Moody Monthly* 36 (Oct. 1935), 81.
  - 27 "Nitwit" Motorists, a Modern Type of the Natural Man," 36 *Moody Monthly* (Jan., 1937), 240; Merrill T. MacPherson, "The Menace of Modernism," *Moody Monthly* 36, (April, 1937), 454; Luther M. Harwood, "Why Christians Are Opposed to Evolution," *Moody Monthly* 26 (Nov., 1925), 108; Dan Gilbert, "The Rise of Beastism in America," *Moody Monthly* 39 (Sept, 1938), 14; and John B. Kenyon, "A Finished Education," *Moody Monthly* 40 (June, 1940), 533.
  - 28 On the cultural dimension of the evolution controversy, see George M. Marsden, "A Case of the Excluded Middle: Creation Versus Evolution in America," in *Uncivil Religion: Interreligious Hostility in America*, ed. Robert N. Bellah and Frederick C. Greenspahn, (New York, 1987), chap. 7; Ferenc Morton Szasz, *The Divided Mind of Protestant America, 1880-1930* (University, AL, 1982), chap. 11; and Paul A. Carter, *Another Part of the Twenties* (New York, 1977), chaps. 3 and 4.
  - 29 James R. Moore, "Interpreting the New Creationism," *Michigan Quarterly Review* 22 (1983), 321-34, observes the irony of recent creation scientists aping the very culture of professionalism and expertise they oppose.
  - 30 This paragraph is based largely on the work of Mark Noll, "The Evangelical Mind in America," a paper presented at the Institute for the Study of American Evangelicals' Religion and American Culture Seminar, April 10, 1990. See also the similar reflections of Nathan O. Hatch, "American Evangelicalism as a Democratic Movement," in *Evangelicalism and Modern America*, ed. George Marsden, (Grand Rapids, 1984), chap. 6.
  - 31 Bryan's responses to Darrow come from *The World's Most Famous Court Trial* (New York, 1971 [1925]), 199, quoted in Marsden, *Fundamentalism and American Culture*, 187. Bryan's opening remarks are excerpted in L. Sprague de Camp, *The Great Monkey Trial* (Garden City, 1968), 222. For a positive estimate of Bryan's arguments, see Garry Wills, *Under God: Religion and American Politics* (New York, 1990), chaps. 8-9.
  - 32 This and the next paragraphs follow the argument of Joel A. Carpenter, "The Renewal of American Fundamentalism, 1930-1945," Ph.D. dissertation, the Johns Hopkins University, 1984.
  - 33 Quoted in Smith, *Watchman*, 128-9.
  - 34 See Joel A. Carpenter, "From Fundamentalism to the New Evangelical Coalition," in *Evangelicalism and Modern America*, chap. 1; and Marsden, *Reforming Fundamentalism*.
  - 35 Kalthoff, "Evangelical Scientists," 4-7, makes these connections.
  - 36 F. Alton Everest, *The American Scientific Affiliation: Its Growth and Early Development* (n.p., 1986), especially Appendix 1a.
  - 37 Everest, *American Scientific Affiliation*, Chap. 1 and especially 27, 28. On the importance of tolerance and cooperation within the broader evangelical movement, see Carpenter, "Renewal," chap. 5.
  - 38 Kalthoff, "Evangelical Scientists," 8-9, makes a similar point.
  - 39 Numbers, "The Dilemma of Evangelical Scientists," in *Evangelicalism and Modern America*, chap. 12.

*The conflict between theology and science was quite as much a conflict between authority and observation.*

*The men of science did not ask that propositions should be believed because some important authority had said they were true; on the contrary, they appealed to the evidence of the senses, and maintained only such doctrines as they believed to be based on facts which were patent to all who chose to make the necessary observations.*

*The new method achieved such immense successes, both theoretical and practical, that theology was gradually forced to accommodate itself to science.*

Bertrand Russell, *Religion and Science*, 1961

# Irwin A. Moon, F. Alton Everest and Will H. Houghton:

## Early Links Between the Moody Bible Institute and the American Scientific Affiliation

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*A recent George Page PBS nature program featured the time dependent behavior of various birds, fish and mammals. Modern film methodology was employed to show startling effects and unusual behaviors. One scene featuring those slippery actors, the west coast grunions, reminded the viewer of the Moody Institute of Science (MIS) films of the 1940s which pioneered photographic methods and pictured so imaginatively the heavens, bat behavior and the grunion birthing process. Moody film pioneers Irwin A. Moon and Alton Everest were also key figures in the founding of the American Scientific Affiliation (ASA). The close early connection between ASA and MIS suggests that a study of films can provide insight into the attitudes toward science and the understanding of science/faith questions held by early members of the ASA. This paper describes the founding period of both organizations and offers an analysis of several early MIS productions.*

### "... a recounting of the acts of God ..."<sup>1</sup>

Today, it is hard to imagine a scenario in which the founding of the ASA would be inspired by an individual who never joined the organization, and that the organization would be nourished in the soil of the Bible Institute movement of the 1940s. A national news magazine of the day had described Moody Bible Institute (MBI) as "the powerhouse of American fundamentalism" and the Bible Institute of Los Angeles (BIOLA) fit the same mold.<sup>2</sup> Yet these institutions would offer meeting sites, encouragement, credibility, resources, and service opportunities for an organization which would soon come to harbor ideas which were anathema to their constituency.

The story of the ASA begins in Los Angeles about 1931 at the Montecito Park Union Church. Montecito Park's young pastor sought to reach the youth of his community through a series of scientific demonstrations designed to illustrate biblical truths and to set the stage for a call to Christian commitment. As a teenager, Irwin A. Moon (1907-1986) had developed a strong interest in science and accumulated an impressive collection of books and apparatus. His academic promise led to an offer of a scholarship to study physics at Yale, but a conversation with a Christian woman customer in the grocery store where he worked led to a radical change in his educational di-

rection.<sup>3</sup> She challenged his Christian commitment and willingness to serve Christ. Moon had been raised in a Christian family, but had given little attention to spiritual matters. His discussion with the woman raised doubts about his future course. Living in a religious culture which viewed science and religion as opposing forces, he was compelled to decide whether to prepare for a scientific career or give his life "wholly to serving the Lord Christ."<sup>4</sup> He chose "full time service" and enrolled that fall at Moody Bible Institute instead of Yale. The next year he moved back home to Los Angeles to complete biblical studies at BIOLA and Los Angeles Baptist Seminary.<sup>5</sup>

As he took up his work at the Montecito Church, Moon began to rethink the science-Christianity question. He attended a lecture series at the Mount Wilson Observatory.

"It was almost enough to make an atheist out of me," he said afterwards. "Was man but an invisible microbe crawling on a speck of cosmic dust?" With so many stars, so many planets, how could God possibly care for one man? And then everything began to fall in place. Moon believed that the answer to his questioning was a miracle of God's leading. The vastness of the universe, the equally vast microscopic world, weren't they evidence of a Divine Creator? Do these things prove rather than disprove the existence of God? Should not science and religion be allies, rather than in opposing camps?<sup>6</sup>

Moon's scientific presentations at Montecito Park Union Church attracted much interest and, as his fame spread, he became flooded with requests to take his "Sermons From Science" (SFS) on the road. As this ministry expanded he came to recognize that he could not do justice to both his church and SFS. His decision to leave Montecito Park to work full time with SFS was characteristic of a lifetime willingness to explore uncharted waters. Moon developed a series of spectacular electrical, optical, sound and chemical demonstrations and took to the road with a trailer which would eventually carry two tons of apparatus. He began to experiment in photography, constructing an electrical timing device with which he was able to take time lapse pictures of flowers opening, clouds changing, and butterflies emerging from their chrysalises. His ministry soon expanded to nationwide scope under the sponsorship of groups of churches and Christian businessmen's committees.<sup>7</sup>

**"... under his guidance (the) ... unusual and much used ministry of Dr. Irwin A. Moon came forward."<sup>8</sup>**

The next link in the birth of the ASA was formed in late 1937 when Moody Bible Institute president Will H. Houghton viewed a "Sermons From Science" presentation at the Church of the Open Door in Los Angeles. Moon later described his unease at Houghton's presence.

At that time the "Sermons from Science" ministry was in its infancy. Although God had blessed the work in a rather remarkable way, there were still many who looked upon the use of two tons of scientific equipment in the presentation of the gospel as undignified and improper, and who considered the ministry "gadget evangelism." Often I had wondered what the attitude of the institute would be toward a former student engaged in such unorthodox antics.<sup>9</sup>

Houghton invited Moon for a late "bite to eat" and shocked him with an offer to join the extension department of MBI. Moon later wrote, "at that period in my life, it was my firm conviction that all organizations were more or less of the devil and that it was quite impossible to be tied up with one and still be free to follow the leading of the Lord."<sup>10</sup> He mentioned this to Houghton and followed this pronouncement with the equally bombastic comment that his "burden was not to minister to the over-

fed Christians in the Bible conferences, but to reach those who would never be reached by ordinary methods, particularly high school and college young people."<sup>11</sup>

Moon was set back on his heels by Houghton's response.

"That's fine ... those are the ones I want to reach." But as he said it, there were tears in his eyes.<sup>12</sup>

For Moon,

Here at last was a man who understood, someone whom I could trust with every dream and plan I had for the future. In that brief hour was born a friendship and a relationship that was to be the greatest blessing of my life.<sup>13</sup>

His resistance broken, Moon would soon join the Moody organization for a fruitful and lasting relationship. Moody's extension office would open up new audiences and take much of the paper work off his hands. In spite of the many demands on his time, President Houghton would continue to maintain a strong interest in "Sermons From Science" and would occasionally join Moon in the ministry to counsel inquirers at the close of the meetings, especially when the work became focused on military bases. Moon noted, "Often there would be scores or even hundreds of men making decisions for Christ in the meetings, and at these times, Dr. Houghton would sit watching with tear-stained eyes."<sup>14</sup>

Moon later recalled:

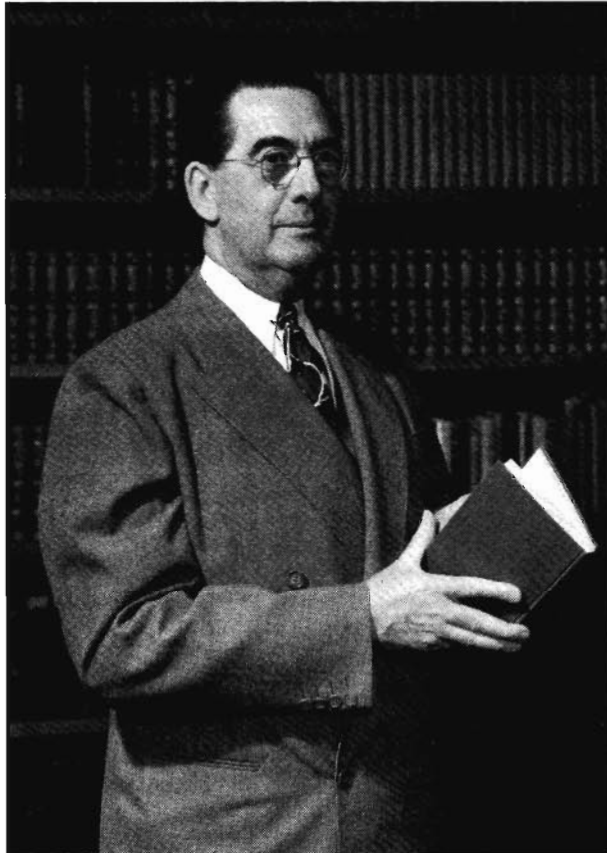
The most thrilling and wonderful hours of my life were those spent with Dr. Houghton as we dreamed and planned together for the future. In such times as these were born the gospel ministry at the World's Fair in San Francisco in 1939-40, the American Scientific Affiliation with its vast potential, the gospel film ministry of the Moody Bible Institute ... the Moody Institute of Science with its many fields of service, all with their message to youth around the world.<sup>15</sup>

One is driven to ask why Houghton was so impressed with Moon's scientific approach to evangelism. MBI offered no science courses, and its publication, the *Moody Monthly* evidenced no love of science. Houghton's exposure to formal education at Eastern Nazarene College (then



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in North Scituate, Rhode Island) had lasted a short six months and was bereft of science. Undoubtedly, the enormous popularity and many conversions stemming from SFS must have attested to the value of Moon's approach. The appeal to youth touched Houghton, whose own effective appeal to young people while at Calvary Baptist Church in New York City had caused it to be dubbed "the young people's church."<sup>16</sup>



(Courtesy of Moody Institute of Science)  
**Will H. Houghton**

At a different level, Houghton may have been attracted by the "show biz" dimension of the demonstrations. As a teenager he had developed a strong interest in acting through his involvement in religious plays performed in a Lynn, Massachusetts church.<sup>17</sup> Later he would gain a small part in a traveling company and spend four years doing black-face and tramp acts for a national vaudeville circuit.<sup>18</sup> Although a Christian during this period, a "back-slidden" Houghton required a radical change in his life to move from vaudeville to ordination in the Canton, Pennsylvania Baptist Church in 1915. His preaching gifts became widely recognized and he was called to a series of important churches (the last being New York's Calvary Baptist Church) prior to his appointment to become President of Moody in 1934.<sup>19</sup>

A potential barrier to bringing SFS into the Institute fold was the need for the approval of Moody's trustees. A Moody press release of the 1940s provided the reasoning

behind the decision, saying that "[i]t was a radical venture for the Institute, known for its conservative ideas, but Dr. Houghton believed in Dr. Moon and he finally sold the Bible Institute's board of trustees on his 'different evangelism.'"<sup>20</sup>

"Sermons From Science" was to be a popular feature at the 1939-40 Treasure Island World's Fair in San Francisco, with an audience estimated at several hundred thousand.<sup>21</sup> During the war years, Moon presented his programs at military bases under the auspices of the United Service Organization. The quality of his programs so impressed the military that they gave him gas ration coupons so that he could fly his plane to the next city to rest up for the next engagement while his assistants were transporting (often overnight) the massive amount of equipment.<sup>22</sup>

Moon's programs were good fodder for the local press. The *Buffalo Courier Express* for October 19, 1938 bore the headline: "Evangelist in Scientist's Role Refutes Old Ideas of Conflict." Another headline read: "Spectacular Demonstrations Bear Out Theme That Bible and Book of Nature Agree." A reporter quoted Moon:

A true scientist knows that he is searching for truths which have been there, and have been there because of God. Religion seeks God and truth in other directions, and only the old-fashioned see conflict between science and God. There is not an unscientific fact in the Bible.<sup>23</sup>

### "What a time to start a new organization!"<sup>24</sup>

The next character in our plot, F. Alton Everest, had heard about Moon through his wife, Elva, a fellow student at BIOLA in the late 1920s. Moon was known for his "zany exploits" and for being the president of the student body.<sup>25</sup> Everest had seen Moon's SFS when at Corvallis and had arranged for the blowing of a Geiger tube and construction of a counter circuit for his use. Everest held degrees in electrical engineering from Oregon State and Stanford University, had done early developmental work in television and was then on the electrical engineering faculty at Oregon State. Everest delivered the apparatus to Moon in late 1940 during a SFS series in Salem, Oregon. From Everest's description and the later course of their lives, this meeting had the same sense of recognition of mutual interests and strong bonding that had characterized the earlier encounter between Moon and Houghton. Each was concerned about the challenges to faith that young Christian students faced when they entered the university and the inability of the church of that day to help them. They concluded that an organization of scientist-Christians would be the best base to formulate a strategy to offset these faith shattering encounters.<sup>26</sup> The question was how to get such an organization started on a firm basis. They needed someone with national contacts and influence among conservative Christians to set the stage for the founding meeting.

Moon had in mind the right man for the task, his boss Will Houghton, who not only wrote a letter of invitation

to prospective participants for an organizational meeting at MBI but convinced long term Moody patron and Board of Trustees President Henry Parsons Crowell to pay the travel and living expenses for those who would attend.<sup>27</sup> Houghton's June, 1941 invitational letter spelled out Moon's (and Everest's) vision of the goals and membership requirements for the new organization.<sup>28</sup> Houghton indicated that the group would not be associated with or be influenced by MBI and that Moon himself (although in Chicago during the time that the founders met) would not be a part of the founding group. Moon never became a member of ASA, but gave both advice and financial support. He realized that he did not have the scientific credentials necessary to join the "science teachers" that were to make up the organization, and perhaps felt it wise to distance himself from any official connection with the group so that his ministry would not be compromised by potentially "heterodox" ideas held by ASA members. Instead, he chose to make his contributions from behind the scene.

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*Houghton looked for a new breed to tackle the task of carving out an organization — professional scientists who would seek to avoid conflict and provocative public pronouncements and instead would thrash out issues on a man-to-man basis.*

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This was not the first attempt to develop a science/Christianity organization in the Windy City. The Religion and Science Association had held its initial meeting in early 1936 at Moody's Memorial Church. But interpretative disagreements among leaders L. Allen Higley, W. Bell Dawson, Harry Rimmer, and George McCready Price led to a quick demise.<sup>29</sup> Houghton may have learned from the failures of this and other short-lived groups and looked for a new breed to tackle the task of carving out an organization — professional scientists who would seek to avoid conflict and provocative public pronouncements and instead would thrash out issues on a man-to-man basis.<sup>30</sup> He assigned Everest the task of drawing up a prototype constitution for the new organization.<sup>31</sup>

With this operating philosophy the membership managed to hang together until the early 1960s, a point at which there was sufficient numerical strength to offset the loss of a dissident group which formed the Creation Research Society. Everest suggested that the ASA founders soon identified within their group a fundamental difference in approach from other organizations of their day. "Instead of coming together on the dual basis of a shared faith plus fixed interpretation of science and scripture, the [ASA] membership shared a basic Christian faith plus a desire to seek the truth between the many conflicting scientific and scriptural interpretations."<sup>32</sup>

Ultimately five men would attend the founding meeting held September 2-5, 1941. They were a mixed bag geographically and in terms of academic discipline; Peter Stoner (1888-1980), astronomer and mathematician at Pasadena City College, Russell D. Sturgis (1897-1969), chemist on the faculty of Ursinus (PA) College, Irving Cowperthwaite (1904- ), chemist and metallurgist living near Boston who had attended Calvary Baptist Church in New York during Houghton's pastorate, John P. Van Haitsma (1884-1965), biologist at Calvin College, and F. Alton Everest, (1909- ) electrical engineer at Oregon State University.<sup>33</sup> The founding members became the first Executive Council and elected Everest president, a position he would hold for a decade.

Cowperthwaite recently recounted the circumstances of his invitation to the founding meeting.<sup>34</sup> He had been a member of Calvary Baptist Church during Houghton's pastorate and had moved to the Boston area in early 1941 to take a new position. He took the opportunity to attend a Sermons from Science presentation at Boston's Park Street Church at which Houghton was to be present. Afterwards, Cowperthwaite and his wife, Fay, took Houghton and Moon out for some ice cream. The conversation got around to the new organization that Houghton was attempting to pull together and the need to invite the right people. At that point Fay piped up, "What's the matter with Irving?" Houghton replied, "Of course" and called his secretary later that evening to issue Cowperthwaite a formal invitation.

World War II became real to Americans a few months later and the five members of the ASA and advisors Moon and Houghton found their lives drastically changed. Sturgis and Van Haitsma were forced to reduce their ASA commitment, and the bulk of the work of the council during the war years was carried out by Stoner, Cowperthwaite, the secretary-treasurer, and President Everest. Everest took a leave from Oregon State to head a Navy research team working on ocean acoustics. This gave him the chance to move about the country recruiting members and prodding council members to do their work.<sup>35</sup> His letters of this period exhibit an indefatigable desire to promote the ASA and get on with the many projects that had been discussed at the founding meeting. Although Everest was able to visit each of them again on their home turf, the five were destined not to meet together again.

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*Ultimately five men would attend the founding meeting held September 2-5, 1941.*

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As the war years continued, the ASA membership haltingly grew and a major "student handbook" project began to take form under the alternate badgering and cajoling of Everest, whose frustration with the indifference of writers and reviewers to deadlines foreshadowed that of ASA journal editors thereafter. The handbook, first suggested



by Moon, was "to be placed in the hands of prospective college students with the idea of forewarning them of the apparent [religious] difficulties they would encounter in their college studies."<sup>36</sup>

Council member Stoner produced *From Science to Souls* in 1944. The impressive sales (350,000 copies) of his work, reprinted in 1952 and reissued as *Science Speaks* in 1976, can hardly fail to bring a sense of longing on the part of latter day ASA authors.<sup>37</sup> Stoner, Cowperthwaite and Everest sought to reach the Christian community by contributing articles to *Moody Monthly*. Everest kept Moon and Houghton in touch with the progress of ASA, often including them as recipients of his letters to council members. The first ASA regional meetings were held in the fall of 1942 at Pasadena, Gordon College in Boston, and MBI. Houghton's interest in the ASA continued until his death in 1947. He provided lunch for members attending a regional meeting at MBI in 1944 and, along with an anonymous donor, paid for the initial printing of the booklet, *The Story of the ASA*, in that year.<sup>38</sup>

The founders and consultants, Moon and Houghton, were of one mind about the need to maintain a low profile. They were fully aware of the sensitivity of their fundamentalist constituency to science-Bible issues and felt that their approach to the scientific community needed to be accomplished in a non-confrontational manner. Everest was often asked to sponsor debates on various issues. In one instance, Dudley Joseph Whitney asked for a debate with unbelieving scientists to "force the issue [evolution] before the public and lick them." Everest in response noted " ... since we are not agreed among ourselves ... no lasting good would result from public debate of the type you suggest."<sup>39</sup> The pressures of war-time activity weighed heavily on Everest. In a letter to Barnes he wrote,

I am so loaded down, Marion, I am afraid that I have been brief to the point of gruffness with you. We are all pretty much on our own due to the great separation in distance yet so close together in our aims and hopes and aspirations.<sup>40</sup>

### "MBI is laying plans for a Christian Scientific Lab"<sup>41</sup>

As World War II began to wind down, Everest's letters suggested that he might not return to Oregon State when peace arrived. In a November, 1943 letter to Moon he asked to be kept informed "of the activities of the [film production group] you were instrumental in starting."<sup>42</sup> Earlier in the year he had written to Edward Hart, his pastor, indicating "certain plans the Affiliation has for Christian films in science and the Bible."<sup>43</sup> On the same day Everest received a letter from Paul Bauman, Chairman of the Department of Theology and Apologetics at BIOLA who noted his joy at Everest's "reaction to the work that Moody is planning to do."<sup>44</sup> He asked him to "consider the possibility of going there ...[with the] possible prospect of being associated with such men as Irwin Moon and Dr. Houghton."<sup>45</sup>

Everest did not easily come to the conclusion that MBI was the best place for the production of science-Christianity films, and addressed the ASA executive council on the matter in a letter of June, 1944. He discussed the possibility of ASA involvement and mentioned Moon's film work using time-lapse photography. He asked the council, "Should ASA enter the field?" Although no record of their response exists, subsequent events suggest that the council did not feel that the 50-member organization could assemble the resources to mount such an ambitious endeavor. A letter in early 1945 from Everest to the council indicated that "MBI is laying plans for a Christian Scientific Lab which will turn out high quality films [and] conduct research on a long-term basis."<sup>46</sup> Soon after, Everest wrote his friend Phil Burman about the project, noting, "I may be in it myself as the Lord seems to be leading."<sup>47</sup> The ASA itself would not become involved with film production until the late 1980s.<sup>48</sup>

### " ... who is to be boss"<sup>49</sup>

Moon, Houghton, trustee H. Coleman Crowell and Everest met in Chicago during the Moody Founders Week in February 1945 to lay final plans for the new venture. However, one nagging question had not been resolved — the lines of authority. A series of letters among the four men resolved the problem and at the same time revealed the Christian character of these visionary individuals. Moon raised the question of authority in the context of an earlier film production, *They Live Forever*, which had at one point reached the "stage of a hopeless muddle."<sup>50</sup> He recognized the need for careful planning and execution of projects for the Christian and scientific communities and was fearful of the effect of mistakes on these audiences.

Everest quickly put the matter to rest.

Everything, including my inability to participate for some months, points toward Irwin's taking the lead in this work, assuming the responsibility, being given the authority, and taking the title as director of the laboratory. In this way he would have control over the policies and could stand guard against pitfalls .... Perhaps, over a period of years I will have proven myself to the extent that Irwin will want to entrust more and more to me as the work grows.<sup>51</sup>

President Houghton settled the matter indicating that each man would be given the title of "director."

Mr. Moon is the originator, creator, and the platform man. Mr. Everest will be the detail man. Not that he will run the errands or wield the broom, but he will see that these things are done. He will break down the projects and assign the parts to personnel.<sup>52</sup>

Houghton also recognized a much deeper problem.

It is one thing to do a first-class laboratory job; it is another to do a job with our fellow fundamentalists, some of whom have little knowledge but deep prejudices in the realm of science .... It is not our job to start a new

reformation and move fundamentalism out of its inclination to think with its emotions.<sup>53</sup>

His concern with the audience extended to a suggested anthropology project.

We will have to keep in mind that most of our orthodox friends not only believe in the plenary inspiration of the Bible, but the verbal inspiration of Schofield's notes and Ussher's chronology. When you talk about the antiquity of man they think you are talking about evolution.<sup>54</sup>

He then approvingly quotes from Moon's February 24, 1945 letter: "I am questioning the advisability of starting the career of the laboratory and perhaps ending it, in a martyr's role."<sup>55</sup>

Everest made the move to join with Moon and MBI in September, 1945 — a relationship which continued until his retirement in 1970. Everest stated his view on the relation between ASA and MIS in a letter of the same month to Allen MacRae, president of Faith Seminary.

The burden of this group (MIS) will be to dwell on the problems arising between science and Christianity and to bear a vital witness in intellectual and scientific fields... there shall logically be a very close tie between this group and the ASA, and that complementary in nature.<sup>56</sup>

Moon and Everest set up shop in a former lodge hall in west Los Angeles, California. Building their equipment from scratch and making full use of the war surplus items, these pioneers and a dedicated staff put together a state-of-the-art film production facility that by 1953 had produced six films which had been used in 62 countries in some 15 different languages.<sup>57</sup> By 1986, the initial film, *God of Creation* (1945) was showing in 28 language versions in 132 countries.<sup>58</sup>

### Attitudes toward science in the *Moody Monthly* during the 1940s

As Moon and Everest began the film production process, they needed to establish the tone and the strategy for this new evangelistic approach. Should the films simply record the SFS demonstrations and scripts already fine-tuned by Moon over many years of experience, or should they take advantage of new developments in cinematography to offer a much richer presentation of nature? Should the rhetorical style of the "demonstrations" be to let the facts of nature and scripture speak for themselves in setting the stage for a presentation of the Gospel? Or should there be an active effort to attack the evils of materialism and evolution and argue the validity of the biblical account of creation?

The rhetorical options available were clearly spelled out in the widely circulated *Moody Monthly* edited by President Will H. Houghton. During the 1940s *Moody Monthly* published a number of articles on Christianity/science themes which paralleled the line of thought which became

the central credo of the Creation Research Society established two decades later. A July, 1940 editorial noted that "the evolutionary concept is largely responsible for the confusion of our times."<sup>59</sup> Articles such as "Why is evolution believed?" (1941), "Why I believe in creation rather than evolution" (1941), "Why I believe the flood to be the key to geology" (1941), "Is evolution of the universe a myth?" (1943), and "Was the flood universal?" (1945) reflected the thinking and the important issues for the vast majority of North American conservative Christians. Hyman Appleman, a prominent preacher on the Bible conference circuit, settled the big question for fundamentalists with his comment that "evolution is no longer accepted by real scientists."<sup>60</sup>



(Courtesy of Moody Institute of Science)

Irwin A. Moon

(Still photo from the Moody Institute of Science film, *Facts of Faith*.)

During this same period ASA founders Peter Stoner and Irving Cowperthwaite wrote *Moody Monthly* articles which struck a different note. Stoner's "The creator of gravitation" (1942) placed emphasis on the power and wisdom of God. His "Faith lost in college" (1944) dealt with the problems of students in secular institutions who felt that science undermined their Christian beliefs. Irving Cowperthwaite wrote devotional articles on "Lessons from growing grain" (1945) and "Marvels of God's atom" (1946). Both writers saw science as a means of displaying the Creator's works more effectively rather than as an adversary of Christianity. Everest became a science consultant for *Moody Monthly's* "Youth Supplement" and wrote a

two-part article "Can Christians be scientific?"<sup>61</sup> He strongly encouraged young Christians to enter the scientific professions, arguing that the strict application of Baconian scientific method would root out any errors in scientific thinking (or biblical interpretation) and that each would harmoniously support the other. Everest recalls that the early ASA members drew on the *British Journal Transactions of the Victorian Institute* for ideas.<sup>62</sup> Moon's 1960 article in the *Christian Herald* argued against "fighting over a little strip of ground" instead of "look[ing] over the whole estate."<sup>63</sup> He felt that both the church and science had contributed to the rift between them and warned his readers about interpreting scripture to fit current science.

The SFS films that appeared in a steady stream in the next two decades showed that Moon and Everest would reach far beyond the science of the Moon demonstrations to encompass new scientific discoveries and film technology. They steadfastly refused to engage in science bashing or confrontation, seeking instead to develop a positive relation between science and the Bible.

**"...the experiments by the air pump, condensing engine and electrical machine...exhibit the operations of nature, and the God of nature Himself"<sup>64</sup>**

The "Sermons From Science" approach follows, in some measure, a tradition which went back far beyond Moon's shows in the 1930s. I will digress to look at this earlier tradition which exhibited some of the same goals as its modern counterpart. The 17th and 18th centuries saw practitioners of natural philosophy demonstrating their discoveries before audiences ranging from their colleagues, to the general public, to the royal court. Before the development of "scientific journals" in France and England, this activity was a major means for transmitting scientific information. A scientist argued his scientific case by demonstrating the phenomenon before his peers. As phenomenal complexity and time constraints became more extensive, "demonstrations" lost their original purpose, but remained popular as teaching devices, ways of popularizing science and of making money for the lecturer and, in an era where science and Christianity were still linked for religious purposes, were used to demonstrate the mark of the Divine. A myriad of examples could be drawn from nature to demonstrate the wisdom of the Creator right before the audience's eyes. An earlier set of metaphysical "proofs" could now be supplemented by the "facts" of nature. A purposeful cause could be seen in the very small as well as the very large — through microscope and tele-

scope. The observed perfection of creatures in natural history was illustrative of purposeful cause. As de Maupertuis (1698-1759) would note, those holding this perspective would discover in nature the views of the Creator, finding his intent in the most minute parts of nature: "the tiniest parts of nature constitute repeated demonstrations [of his being]; his power, wisdom and goodness are painted on the wings of butterflies and in every spider's web."<sup>65</sup>

Evangelist John Wesley was less sure after viewing a mid-eighteenth century electrical lecture.

I went with two or three friends to see what are called the electrical experiments. How these must confound those poor half-thinkers who will believe nothing but what they can comprehend. Who can comprehend how fire lives in water, and passes through it more freely than through air? How [did] issue out of my finger, real flame, such as sets fire to spirits of wine? How these and many more strange phenomena arise from the turning around a glass globe? It is all mystery; if haply by any means God may hide pride from man.<sup>66</sup>



(Courtesy of Moody Institute of Science)

**F. Alton Everest and friends.**

(Still photo from the Moody Institute of Science film, *Voice of the Deep*.)

Regardless of the mystery, Wesley would later write a work on electricity (1760) and use an "electrical machine" to cure various physical afflictions of "hundreds, perhaps thousands" of his constituents.<sup>67</sup>

The "Sermons From Science" demonstrations of Moon, George Speake, G. Keith Hargett and, today, Dean Ortner are a latter day edition of this earlier tradition. They feature, however, an evangelistic centerpiece which would have been unthinkable to their forerunners. The science films, in turn, have acted to accentuate the marvels of nature

and multiply the audience of the latter day “demonstrators.” They communicated the attitudes of Moon, Everest and their ASA consultants on such questions as the value of science, the nature of scientific method, the relation between science and scripture and the “message” that nature was seen as communicating about God.

**“...to demonstrate the reliability of the Scriptures, the reality of God and provide a foundation upon which the Gospel of Christ was presented ...”<sup>68</sup>**

The three films reviewed here were produced between 1945 and 1962 and are each 28 minutes in length. They were filmed in color and employed state-of-the-art cinematography and scientific apparatus. Over the years, the MIS team published papers in scientific journals and received many awards for the films and scientific innovations. Their use of film to portray nature’s grandeur and unusual behaviors was a powerful attention grabber from which to present the gospel to the unconverted and deepen the faith of the believer.

The writers drew from many areas of science to present a teleological case; design, law and order, purpose, a harmony that demands an intelligent creative genius. The next stage in their argument would point to a personal God to whom we are responsible. Each film followed the same general outline; first, a popular presentation of some scientific theme with theological overtones, then a more or less logical transition to an analogous religious theme, and finally to an invitation for Christian commitment.

Film audiences ranging from servicemen on military bases, world’s fair audiences, college and high school classrooms and prison populations to Youth For Christ and Sunday evening services offered a massive challenge to the writers. For the most part the MIS films chose to allow nature and scripture to speak for themselves. While evangelism was the basic motive, for the Christian viewer there was an unstated yet clear affirmation of science as a career. Review by ASA members would guarantee that the scientific facts were correct. Unfortunately this review was difficult to implement during the film production process and took place only in the early films.

The writers established a religious identity at widely varying points. The initial film, *God of Creation* (1945), begins with Moon at a desk with a Bible open before him, asserting, “We are going to explore various realms of God’s creation ... before we close we will agree that he is a wonderful God.” The astronomy section begins with the verse, “The heavens declare the glory of God and the firmament showeth His handiwork.”<sup>69</sup> At the close of that sequence Moon notes that in the “immensity of God’s universe man seems too small for God to care anything about.” A later segment on the lily uses the verse “consider the lilies of the field.”<sup>70</sup>

*Red River of Life* (1957) presents a powerful exposition of the argument of design based on the wonders of blood

and the human circulatory system. We note only one direct reference to Christianity — “new wonders of God’s creation” in the early scientific segment. *City of the Bees* (1962) jumps right into bee science without the usual initial scenes of Moon at a lecture desk. An intriguing view of bee biology and social behavior is portrayed with no religious references until the discussion turns from bee to human social behavior and the Ten Commandments are asserted as the standard for human society. The argument is then made for individual commitment to Christ.

*God of Creation* ranged from galaxy to lily to paramecium to demonstrate the vastness of creation and the unity of organic and inorganic behavior. This is seen in the use of time-lapse photography and the creative use of music. Moon then turns to the interplay of sun, plant and insect in the life cycle of the poppy and the butterfly. He closes his discussion with a sequence on the microscopic paramecium, arguing that its apparent simplicity is deceptive. For Moon, these are “strange and wondrous things.” He asks, “What do all these amazing things mean to us?” and argues the point that “it is not what you know, but who you know that counts.” He asks, “What is your relation to God?” and asserts the need for “a personal experience with God whose greatest creative miracle is that of salvation.” “This experience is not with a formula, we need to experience a new life, not turn over a new leaf.” “God’s work as Creator is not over; he stands ready to do his greatest miracle — create a new life.”

*Red River of Life* resonates with Christian images which its writers wisely do not explore until the close of the film. At that point they forcefully argue that the intricate mechanism of the circulatory system and the efficient design of its parts “demands an explanation” — intelligent design.

The attitudes of Moon, Everest and their colleagues toward science are seen both in what was said and what was not said. Science was viewed as a worthy enterprise for Christian and non-Christian alike. They treated the scientist with respect regardless of his religious views. They spoke with caution, recognizing the limits of scientific understanding and showed remarkable restraint for that day in not using the Bible as a guide to science. One exception was the comment on George Washington’s last days and the blood letting process that may have hastened his death. Moon would comment that if they had read the Bible which lay on the desk by his bed they would have recognized that “the life was in the blood.”<sup>71</sup> The writers did not engage in the all-too-common fundamentalist put-down of evolution or use a rhetoric of confrontation even though they viewed the subject of origins in a different way than the scientific orthodoxy of the day. They were not unwilling to use modern illustrations of the design argument to attract the interest of the listener to the Christian message.

**“ ... just the facts, Ma’am ... ”<sup>72</sup>**

The practices of science and theology in ASA/MIS and most conservative Christian circles (and the general public)

in the 1940s were popularly viewed in simple Baconian terms. Science was concerned with the facts and laws of nature while theology dealt with the facts and principles of the Bible; the result was a kind of symmetry between science and theology in which issues arising between the two would be resolved by the "right" facts which would be found if one looked hard enough and was patient. This methodological perspective had been adopted by a wide range of American Calvinistic theologians of the previous century including such stalwarts as Charles Hodge, Robert Dabney, B. B. Warfield, James Thornwell and a host of lesser lights.<sup>73</sup> The influence of the "Princetonians" on conservative Christian thought moved far beyond traditional Calvinistic circles and deep into the 20th century as well. Evangelical historian George M. Marsden has sought to examine the reasons why conservative Christians, particularly those descended from the turn-of-the-century Princetonians, espoused the scientific basis of their culture even though it "was undermining belief in the very truths of the Bible they held most dear."<sup>74</sup> By the 1930s this relationship had become more tenuous in the Bible institute milieu. The dispensational movement was Baconian in its insistence on the literal meaning of scripture but was more deeply concerned with the influence of evolution on American culture.

Today Bacon's method is seen as an unreachable ideal and the idea that there is a "scientific method" in any but the most simple sense is a hotly debated topic. The provisional nature of scientific thought cannot be doubted. Science is a human activity, not a royal road to truth; being human is knowing both science and theology only in part. The contributions of Thomas Kuhn, Abraham Kuiper and Cornelius Van Til have helped us to see that facts of science and religion, the kinds of facts deemed relevant and the process of fact-gathering are bound by culture.

Van Til sought to temper the view that "facts" were common to both Christians and non-Christians in a letter to Everest concerning a draft of the "student handbook" which had been sent to prominent American evangelicals for comment.<sup>75</sup> Everest felt that Van Til's ideas needed wider exposure in the ASA and invited him to speak at the first Annual Meeting of the ASA at Wheaton College in August 1946.<sup>76</sup> Van Til would challenge his audience to be philosophers and theologians as well as good scientists if their scientific work was to "count as an apologetic for Christianity."<sup>77</sup>

Van Til closed his remarks with a description of a dream in which

... [he] saw a large group of scientists, Christians all, working in so many fields of science ... they worked as those who knew that no facts but theistic facts can ever be observed and that no hypotheses but Christian theistic hypotheses can have genuine relevance to experience. Then I saw these men in my dream standing in the gates reasoning with men who worship Chance or Fate or a combination of the two. The really global war began. I saw also in my dream that the Christian scientists were much encouraged by the progress they were making. They were now really able to expose the bankruptcy of any scientific

methodology that is not [either] self-consciously or unconsciously based on Christian theism.<sup>78</sup>

The founders of ASA and MIS may generally have sided with their fellow Christians against evolution and adhered to some form of Mosaic geology, yet they chose not to engage in polemical debate in their early books, articles and film presentations. Conflict and division would appear soon enough, but for a few years there was a positive note on which to build an organization and witness to the Gospel. As the early ASA reviewed the heritage of Christianity/science discussion that had flowed from such examples as Rimmer and Price, they found it wanting in both science and theology.<sup>79</sup> They recognized the need to develop books and a journal which would hone the new discussion with the best that a resurgent evangelical scholarship could muster. Today, the tasks suggested a half century ago by the founders of ASA seem far more complex and the landscape far broader, yet the challenge to think and speak to our generation remains. \*

## ACKNOWLEDGEMENTS

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## NOTES

- 1 Alton Everest, *The American Scientific Affiliation: Its Growth and Early Development*, 1986. p. 10. Privately printed. Copies are held at American Scientific Affiliation, Box 668, Ipswich, MA 01938 and Wheaton College Library Archives (WCA).
- 2 *Newsweek*, Vol IV, #12, Sept. 22, 1934, p. 37. Moody educated pastors had been known to condemn the search for knowledge beyond scripture as sinful and denounce science as the path to atheism. Joseph Millard, "Now Science, Too, Joins the Church." *Redbook Magazine* 95:4 August (1950) pp. 36-37.
- 3 Undated press release "Evangelism's New Tool, Science presents ... the Gospel," p. 11. Moody Bible Institute Archives, (MBIA) MIS File 12. A series of undated press releases in the MBI Archives describes Moon's youthful interests in radio (he had an operator's license at the age of 12), film, cars, motorcycles and "gadgeteering" in general. He would charge visitors to his parents' ostrich farm a dime to listen to the "spurts and crackles" of Morse code on his radio receiver.
- 4 *ibid.* p. 12.
- 5 Ref. 1, p. 29.
- 6 Ref. 3, p. 12.
- 7 Ref. 1, p. 30.
- 8 "The 'Silent Deep' Speaks Up". *Moody Monthly*, XLVII(1947) p. 807.
- 9 Wilbur M. Smith, *A Watchman on the Wall: Life Story of Will H. Houghton* (Grand Rapids: Wm. B. Eerdmans Publishing Co., 1951) p. 145.
- 10 *ibid.* p. 145.
- 11 *ibid.* p. 146.
- 12 *ibid.*
- 13 *ibid.*
- 14 *ibid.* p. 147.
- 15 *ibid.* p. 148.
- 16 *ibid.* p. 19.
- 17 *ibid.* p. 20.
- 18 *ibid.* p. 19.
- 19 *ibid.* p. 101.
- 20 undated 1940s press release, MISA MIS File p. 4.

- 21 Ref. 1. p. 32.
- 22 *ibid.* p. 31.
- 23 *Buffalo Courier Express*, October 19, 1938, p. 1. The MBI Archives hold an extensive collection of newspaper clippings from Moon's meetings.
- 24 Ref. 1. p. 34.
- 25 "Biographical Material on Dr. Irwin A. Moon," ca. fall 1948. MBIA File 12. p. 2.
- 26 Ref. 1. pp. 31-32.
- 27 *ibid.* p. 15.
- 28 Ref. 6. pp. 142-144.
- 29 Ronald L. Numbers, "Creationism in 20th Century America." *Science* 218 (1982) p. 541; Ref. 1. pp. 37-8.
- 30 Letter from Peter Stoner to Everest Feb. 25, 1944. WCA ASA Box 5 "We ASA should be friendly to science. The deluge geology bunch seems to go out with a chip on their shoulder and dare someone to knock it off."
- 31 F. Alton Everest, "The American Scientific Affiliation — The First Decade." *Journal of the American Scientific Affiliation* 3 (1951) p. 37.
- 32 Ref. 1. p. 43.
- 33 Ref. 1. pp. 16-25.
- 34 Personal communication from Cowperthwaite to Haas, April 16, 1991.
- 35 Ref. 1. p. 35.
- 36 Letter from Everest to Van Haitsma, May 18, 1942. WCA ASA Box 5. 33 Ref. 1. p. 19.
- 37 Ref. 1. p. 19.
- 38 Letter of Everest to the Executive Council, May 25, 1944. WCA ASA Box 5.
- 39 Letter of Everest to Dudley Joseph Whitney, March 21, 1944. WCA ASA Box 5.
- 40 Letter to Marion D. Barnes, March 31, 1944. WCA ASA Box 5.
- 41 Letter of Everest to the Executive Council, February 19, 1945. WCA ASA Box 6.
- 42 Letter of Everest to Moon, November 8, 1943. WCA ASA Box 5.
- 43 Letter of Everest to Edward Hart, March 25, 1944. WCA ASA Box 6.
- 44 Letter from Paul Bauman, to Everest, March 25, 1944. WCA ASA Box 6. Bauman (later a vice-president at BIOLA) was a good friend and confidant of Everest. Bauman, a trained zoologist, was a strong supporter of ASA and offered BIOLA facilities for ASA use. He would recruit members for the organization while on the Bible conference circuit.
- 45 *ibid.*
- 46 Letter of Everest to the Executive Council, June 19, 1944. WCA ASA Box 6.
- 47 Letter of Everest to Phil Burman, March 26, 1945. WCA ASA Box 6.
- 48 A six hour PBS series "Space, Time and God" is in the final script phase as this article goes to press. *ASA Annual Report 1990*, p. 2.
- 49 Letter from Everest to Houghton, Crowell and Moon, March 2, 1945. WCA ASA Box 6.
- 50 Letter from Moon to Houghton, Crowell and Everest, February 24 and 28, 1945. WCA ASA Box 6.
- 51 Ref. 49.
- 52 Letter from Houghton to Moon and Everest. March 8, 1945. WCA ASA Box 6.
- 53 *ibid.*
- 54 *ibid.*
- 55 *ibid.*
- 56 Letter of Everest to Allen MacRay, September 3, 1945. WCA ASA Box 7.
- 57 F. Alton Everest, "The Moody Institute of Science." *Journal of the American Scientific Affiliation* 5 (1953) p. 10.
- 58 Ref. 1. p. 29.
- 59 unsigned editorial, *Moody Monthly* XL 11(1940) p. 591.
- 60 Hyman Appelman in an editorial, *Moody Monthly* XLIV 7(1944) p. 380.
- 61 F. Alton Everest, "Can Christians Be Scientific?" *Moody Monthly* Part I XLVII 9 (1947) p. 663; Part II. 10 p. 737.
- 62 Ref. 1. p. 37.
- 63 Irwin A. Moon, "Science and the Christian." *Christian Herald* Feb. (1960) p. 11.
- 64 Joseph Priestley, *Lectures on history and general policy in J. T. Rutt (ed): The theological and miscellaneous works of Joseph Priestley* (25 vols, London, 1817-31), Vol. xxiv, pp. 27-28.
- 65 Roger Hahn, *Laplace and the Mechanistic Universe in God and Nature*, David C. Lindberg and Ronald L. Numbers, eds. (Berkeley: University of California Press, 1986) p. 265.
- 66 John Wesley, *The Journal of John Wesley*. Vol. 2 (London: J. M. Dent & Sons, 1906) p. 36.
- 67 *ibid.* Vol 3 pp. 355-6. See also Frank W. Collier, *John Wesley among the Scientists* (New York: The Abingdon Press, 1928) which provides an analysis of the deep interest that Wesley had for the physical sciences and his views on the relationship of science and Christianity.
- 68 Private communication from Everest to Haas, May 14, 1991.
- 69 Psalm 19:1.
- 70 Matthew 6:28.
- 71 Deuteronomy 12:23.
- 72 An often used line by Sgt. Joe Friday in the "Dragnet" TV series of the 1950s.
- 73 Theodore Bozeman, *Protestants in an age of Science* (Chapel Hill: University of North Carolina Press 1977).
- 74 George M. Marsden, *The Evangelical Love Affair with Enlightenment in Understanding Fundamentalism and Evangelicalism* (Grand Rapids: Wm. B. Eerdmans Publishing Co., 1991) p. 126.
- 75 Letter of C. Van Til to Everest received November 24, 1945. WCA ASA Box 7.
- 76 Address by Professor Van Til, in "Report of the American Scientific Affiliation for 1946, Miscellaneous Papers and Reports 1946-1948". WCA ASA. pp. 24-26.
- 77 *ibid.* p. 24.
- 78 *ibid.* p. 26.
- 79 Bernard Ramm, *The Christian View of Science and Scripture* (Grand Rapids: Wm. B. Eerdmans Publishing Co., 1955).

### Books Received and Available for Review

(Please contact the Book Review Editor if you would like to review one of these books.

This is a partial list — others are also available.)

- J. Barrow, *Theories of Everything: The Quest for Ultimate Explanation*, Oxford
- D. Browning & I. Evison, (eds.), *Does Psychiatry Need a Public Philosophy?* Nelson-Hall Publishers
- J. Casti, *Searching for Certainty: What Scientists Can Know About the Future*, Morrow
- J. Cobb, Jr., *Matters of Life and Death: The Right to Kill, The Right to Die*, Westminster/John Knox Press
- J. Collins, *The Cult Experience*, Thomas Publishers
- C. Colson & J. Eckerd, *Why America Doesn't Work*, Word
- M. Coughlan, *The Vatican, the Law and the Human Embryo*, Iowa Univ. Press
- D. DeMarco, *Biotechnology and the Assault on Parenthood*, Ignatius
- C. DeWitt, (ed.), *The Environment and the Christian*, Baker
- A. Ehrlich & J. Birks, (eds.), *Hidden Dangers: Environmental Consequences of Preparing for War*, Sierra Club
- P. Kurtz, *The Transcendental Temptation: A Critique of Religion and the Paranormal*, Prometheus
- H. Kyburg, Jr., *Science and Reason*, Oxford
- H. Malony & B. Spilka, (eds.), *Religion in Psychodynamic Perspective*, Oxford
- J. Mander, *In the Absence of the Sacred: The Failure of Technology*, Sierra Club
- M. Matthews, (ed.), *History, Philosophy, and Science Teaching*, Columbia
- N. Mott, (ed.), *Can Scientists Believe?*, James
- F. Turner, *Rebirth of Value: Meditations on Beauty, Ecology, Religion, Education*, SUNY
- J. White, *The Meeting of Science and Spirit: Guidelines for a New Age*, Paragon



# The Harmonious Dissonance of Evangelical Scientists: Rhetoric and Reality in the Early Decades of The American Scientific Affiliation

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*Founders of the American Scientific Affiliation were convinced that many Christians needlessly struggled in their faith because of prevailing fundamentalist misconceptions regarding science and its relation to Christianity. Through publication, discussion, and review, members of the young ASA partially realized their objective of countering error. Yet because they were learning themselves, the vision of just how the "facts of science" were to be "correlated" with scripture remained somewhat rudimentary and obscure. Consequently, in their efforts to articulate the alleged "harmony" between science and scripture, the unseasoned evangelical scientists failed to avoid producing their own dissonant chords. Potentially worrisome notes sounded in several ways: in divergent views of the nature of science, in efforts to review publications and to publish their own material, in discussions of flood geology, and in disparate convictions about the concept of evolution. This paper highlights these dimensions of early ASA history in order to illustrate ways the words and deeds of ASA members mingled to produce a fascinating harmony from dissonant chords.*

In June of 1942 the fathers of the American Scientific Affiliation could look with expectant satisfaction upon the first fruit of their labors, an eleven-page promotional brochure which told *The Story of the American Scientific Affiliation*. This first "history" of the "infant religion and science association" summarized the early months of the organization's life, outlined plans, presented the newly-drafted constitution, and concluded with the hopeful speculation that "this can become the most important movement since the Reformation." Exactly what the American Scientific Affiliation and the Reformation would have in common was left unspecified. Interestingly, the word "reformation" had replaced the word "renaissance" which had been used in the original draft. Both words conjured the image of something profoundly important and lasting in effect. That seems to have been the principal concern.<sup>1</sup>

But profoundly important and lasting effects are the consequences of penetrating ideas. The founders of the ASA, indeed, had what they believed to be such a keen idea. F. Alton Everest (b. 1909), the young group's first president and tireless organizational chief, expressed that

idea in the fall and winter of 1941 in letter after hand-typed letter to prospective members. He wrote, "[T]here can be no real discrepancies between the Bible and the real facts of modern science." The American Scientific Affiliation had a job that went beyond what Everest called the "red-blooded man's duty and privilege" of being a Christian. "This group of scientists can prove to the world," proclaimed the founders, "that the principles of our Christian faith welcome investigation and that the Bible, being the Word of God and thus infallible, will withstand any encounter with science which might be proposed."<sup>2</sup>

So by mid-1942 everything was in place: a constitution, goals, plans, new letterhead, and a slowly-but-surely-growing membership. Now all that had to be done was that "red-blooded man's work" of expounding to the world the harmony of science and scripture. There had been a good deal of rhetoric bantered about during those early days regarding "the facts of science," "correlation with the Bible," and "fundamental Christianity," both within and without ASA membership. And there was a

bit of bravado accompanying the litany of ASA "plans" and "objectives."

The result was that the historical realities of implementing those plans did not always square with the original rhetoric. This should hardly be surprising, given that the members came together with differing scientific, theological, educational, and geographical backgrounds. Still, if its goal was to announce that the "facts of science" were in harmony with scripture, then it seemed incumbent upon the ASA that it broadcast harmony from the interaction of its own members. That it did. But at times that harmony reverberated with curiously dissonant strains. The vision of just how the "facts of science" were to be "correlated" with scripture remained rudimentary and obscure. As the ASA grew from five members to nearly eight hundred members in its first one-and-a-half decades, that rudimentary and obscure vision matured as ASA members thought and learned and interacted. As words and deeds of ASA members mingled to produce a fascinating harmony from sometimes dissonant chords, they left a record of interesting episodes, ideas, and anomalies that merit review.

### The "Real Facts of Science"

In late January of 1942 Alton Everest revealed his thoughts in the form of a rhetorical question: "There are so many variant opinions and interpretations within even our small group concerning certain biblical passages, how can we expect to appear before a B[ible] I[nstitute] group without appear[ing] to be wrangling among ourselves?" Everest answered his own question. The ASA had to present "a solid, well thought out front." As he later communicated to a prospective member, "[W]e are firmly convinced that our group will be a more powerful tool in the hands of the Lord if we maintain our standards so high that the confidence of those in the other camp will be compelled. For this reason we have chosen not to adopt deluge geology, anti-evolutionism, or anything else as the basis of our group."<sup>3</sup>

The wisdom evident in the founders' fear of becoming too narrow in creed has left the ASA with a legacy of the so-called "open forum" approach. This tactic would prove to be the source of its own set of problems. But for the meantime, while still thinking matters through, the organizers of the ASA were becoming wary of ad-

vertising adherence to anything more specific than an "unerring" Bible and "the real facts of science." It was the invocation of this rhetorically pleasing phrase, "the real facts of science," however, that would betray a degree of philosophical naivety and conflicting views of science within the ASA.<sup>4</sup>

Philosophers of science have long acknowledged the tenuous ontological status of scientific "facts." The temptation right now is to undertake a digression reviewing the ideas of William Whewell (1794-1886), Pierre Duhem (1861-1916), Thomas Kuhn (b. 1922) and others on this subject. Resisting that temptation, the point is that many philosophers who think about these things have insisted that presuming autonomous existence for "facts of science" is unacceptable. The ASA founders were not philosophers, however. As a result they had not given these matters much thought.<sup>5</sup>

The affair becomes more complex when relating the presumed "facts of science" to Scripture. In their rhetoric, ASA founders gave voice to sentiments reminiscent of Scottish Common Sense Realism as transmitted through such Princeton theologians as Benjamin B. Warfield (1851-1921). As Mark Noll has observed, "The Scottish philosophers regarded truth as a static entity, open equally to all people ... They were deeply committed to an empirical method that made much of gathering relevant facts..." Warfield believed that this common rational sense could then be pressed into theological service. He "held that history, reason, and objective science could demonstrate the validity of Scripture as divine revelation. Individuals convinced by such demonstration could then rely on Scripture to construct theology."<sup>6</sup>

Viewed from this perspective, the writings of ASA founder Peter Stoner qualify him as a Warfieldian of sorts. His popular book, *From Science to Souls* (1944), concluded its argument on a definitive note. Stoner proclaimed that his presentation was "proof of the Bible's inspiration by God — proof so definite that the universe is not large enough to represent it.... Any man who rejects Christ as the Son of God is rejecting a fact proven perhaps more absolutely than any other fact in the world."<sup>7</sup>

Apparently a preferred method of proof among ASA founders was a three phase "Scientific Procedure" outlined by Alton Everest in his *Moody Monthly* article, "Can Chris-



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tians Be Scientific?" Surely they could. After all, the phases of the "Scientific Procedure" could be followed by anyone. They were "1) Lack of Bias ... 2) Hypothesis ... 3) Testing the hypothesis." Everest explained, "A scientist must approach a problem with no pre-conceived ideas which would tend to influence his conclusions." Any other view which admitted pre-conceived bias and still claimed scientific status would be sheer nonsense.<sup>8</sup>

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*Kuyper argued that there were "two kinds of people," Christians and non-Christians, and therefore, respectively "two kinds of science," each beginning from separate sets of presuppositions.*

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"Sheer nonsense" — that was B. B. Warfield's feeling about the Dutch theologian Abraham Kuyper's (1837-1920) view of science. Kuyper held that no scientist could ever approach a problem without preconceived ideas. He argued that there were "two kinds of people," Christians and non-Christians, and therefore, respectively "two kinds of science," each beginning from separate sets of presuppositions. Kuyper's presuppositionalism seems to run counter to the evidentialist position of Warfield. Where Warfield saw universal scientific agreement as at least theoretically possible, Kuyper believed that, regarding the two kinds of scientists, "each group naturally contradicts whatever the other group asserts."<sup>9</sup> Interestingly, however, it is not hard, despite the Warfieldian sounds of Stoner and Everest, to find other ASA members sounding contrary Kuyperian chords.

Historian of American religion George Marsden has made much of this distinction between "Warfieldians" and "Kuyperians." "In almost every field today," argues Marsden, "evangelical scholars are divided basically into two camps, with some hybrids in between. These camps are the Warfieldians and the Kuyperians, although they do not necessarily identify themselves as such or follow their mentors precisely."<sup>10</sup> While Marsden's approach has merit, attempting to apply a strict topology shaped along the contour of a rigid Warfieldian-Kuyperian dichotomy could prove thorny. Nevertheless, for purposes of identifying dissonant strains within ASA ranks, Marsden's strategy functions well heuristically.

It would take people formally outside the ranks of ASA membership to play the first non-Warfieldian notes, however. In the fall of 1945 Cornelius Van Til of Westminster Theological Seminary explained to Alton Everest, "The Christian has a radically different conception of the very idea [of] fact than has the non-Christian. Any discussion about facts therefore which does not include a settlement on the question of the philosophy of fact is bound to be very weak." When Van Til presented his invited paper, "Epistemological Assumptions of Scien-

tists," at the first ASA convention in August, 1946, he made sure this theme was clear. "The non-Christian scientist carries with him," reasoned Van Til, "the assumption that man is the final reference point of his own interpretation ... It is in terms of this assumption that he *observes* the facts."<sup>11</sup>

The first ASA publication venture materialized in 1947 as a monograph, "Christian Theism and the Empirical Sciences," by another non-ASA member Cornelius Jaarsma. Presumably Van Til's message was resonating well within the ASA membership, for Jaarsma's monograph echoed a similar note. He announced, "Facts have no being without God, nor can they continue as facts apart from God. He is the presupposition of all things. The fact of God must be taken into account to give adequate, yes, true interpretation of other facts." Perhaps the very notion of autonomous "facts of science" to correlate with scripture was an error stemming from secular philosophy. Jaarsma concluded in a Kuyperian vein insisting that, "When the primary fact of ... God is ruled out ... erroneous conclusions are inescapable."<sup>12</sup> By formally endorsing Jaarsma's article, was the ASA renouncing a Warfieldian heritage?

No, it was not. The following year, the ASA's student handbook, advertised as "a 289-page Christian Classic that took twelve men five years to produce," appeared. On the fundamental question of the nature of scientific fact did the ASA present "a solid, well thought out front?" Editor Everest explained in the preface that the volume's purpose was to demonstrate "a harmony" between "the observations of science and a simple, direct interpretation of the Bible narrative." In the chapter on "The Witness of Physical Science to the Bible," the author seemed willing enough to grant "facts" autonomy. "By the facts of science the conclusion is endorsed that the universe must have had an origin in time ..." Rather than beginning with God, then, the "facts of science" had foundational status. Interestingly, in the chapter on "Psychology and the Christian Faith," editor Everest added to the second, enlarged edition of 1950 a comment which implied the autonomy of "scientific facts." The revised chapter concluded, "No psychological gymnastics are necessary to reconcile the Christian position with the facts of psychology and psychiatry."<sup>13</sup>

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*"The non-Christian scientist carries with him," reasoned Van Til, "the assumption that man is the final reference point of his own interpretation... It is in terms of this assumption that he observes the facts."*

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From these brief passages an undercurrent of Warfieldian sentiment may be assumed. But such an inference could be drawn only by ignoring other passages from

the book. For example, chapter one, "A Christian Interpretation of Science," suggests that there are two kinds of scientists after all. "The scientist who is a follower of Jesus Christ finds that his conception of science is determined by his beliefs.... [T]he Christian theistic view ... has its own interpretation of science" and its own presuppositions. The chapter on "Geology and the Bible," struck a similar chord: "[I]t is not possible to reconcile the [scientific] interpretation with the Scriptures. This is due to the fact that the two are essentially irreconcilable." Such insistence upon the irreconcilability of scripture with scientific knowledge that is not first founded on presuppositions of biblical supernaturalism sounds rather Kuyperian.<sup>14</sup> Kuyperian sounds continued to get hearings within the ASA in other forms as well.<sup>15</sup> But, despite members voicing such convictions, as the years wore on, a Kuyperian view never clearly dominated.

A litany of Warfieldian and Kuyperian counter-examples could be extended, but by now the point should be clear. Marsden has argued that "in virtually every field the principal intraevangelical debate has been the same: Do evangelical Christian scholars pursue their science or discipline differently from the way secularists do?"<sup>16</sup> Some within the ASA have urged that they must; others believed that if Christians and non-believers share anything in common, certainly it must be science. Has this dissonant strain ever been resolved within the ASA? Perhaps one could argue that a Warfieldian model finally came to dominate with the approval in 1970 of the ASA's fourth constitution. There the "Doctrinal Statement" included for the first time the statement, "The scientific approach is capable of giving reliable information about the natural world."<sup>17</sup> The Kuyperian might object to the use of the definite article — he might ask, "Which scientific approach, the Christian or the non-Christian?" But a Warfieldian would not be likely to bother with this distinction. Neither did the new ASA constitution.

### **Blackballing Fundamentalist Pseudoscience: Ironies in the Construction of an ASA Imprimatur**

The question of whether or not evangelical scientists pursue their discipline differently than secular scientists, Marsden suggests, is "the principal intraevangelical debate." To be sure, as I have briefly tried to demonstrate, evangelical scientists of the ASA were not of one mind on this matter. Some minded a lot, for others it didn't matter. While for early ASA members the question certainly was a principle of debate, it was only one thread in a broad fabric of issues which they considered meaningful.

The chief reason ASA leaders during the early years did not fuss much over the theological and epistemological questions surrounding the notion of "scientific fact" (aside from the reality that it had not really occurred to some of them as an issue) was that they could only bother with so many things at a time. Their published "PLANS" for "correlating" scripture with the "facts of science" made scant allowance for worrying about what a "fact" was.

Leading the list of ASA plans was what Everest considered the job "that would be expected to appear first in a new organization" — "reviewing." "Our main object," he explained in a letter to a new member accompanying a package of nine books, "is to get a list of books ... which we can recommend without reservation." Among the founders, Everest and Stoner were especially eager to guard "the fundamental church" against well-intentioned but basically "crack-pot presentation[s]" of science by "Bible-teachers, preachers, and evangelists," whose approach "left a dark brown taste in the mouth of those of scientific training." In keeping with original plans, the founders hoped to provide "a 'stamp of approval' for publishers' use in the flyleaf of approved books and pamphlets ... I keep thinking of the 'Good Housekeeping Institute Seal of Approval,'" wrote Everest to Irving Cowperthwaite, "but I hope ours means more."<sup>18</sup>

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*In these early years ASA aspirations ran high for becoming the evangelical Vatican for fundamentalists preferring literature with a scientifically correct imprimatur.*

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In these early years ASA aspirations ran high for becoming the evangelical Vatican for fundamentalists preferring literature with a scientifically correct imprimatur. In the end, however, rhetoric, both published and otherwise, outstripped the historical realities. This is not meant to suggest that the ASA of the 1940s did not make a hearty effort to fill the role of censor.

Everest and Stoner were especially pleased to announce in mid-1942 that the ASA already "has one job to its credit." A "sensational" little book had appeared in fundamentalist circles purporting to "have proven beyond a shadow of a doubt" the inspiration of scripture by employing what detractors labelled "absurd and erroneous" methods of numerology. Stoner, the ASA's mathematician, had demonstrated that using the book's method, its own foreword "was even more inspired than the Genesis passages themselves!" Apparently several organizations had encouraged sales of the book. Having alerted those groups to this serious flaw, the ASA took pride in its role in effecting the book's demise.<sup>19</sup> This first "reviewing" victory charged the ambition of the young science and religion society; and the founders quickly organized a formal reviewing phase of their work.<sup>20</sup>

The ASA mark of "approval" would routinely appear on many of the Moody Institute of Science films — something that probably did as much for ASA's credibility as it did for Moody's. And, perhaps remarkably, the ASA endorsement appeared on a few editions of John R. Howitt's (1892-1985) pocket-sized booklet, *Evolution: "Science Falsely So-called."*<sup>21</sup> But an ASA endorsement was never to rival Good Housekeeping's Seal in name recog-

nition or importance. Beyond these examples the founders' vision of a widely-recognized ASA imprimatur gradually fizzled. This was not due so much to lack of energies for reviewing as it was to a shortage of approvable material. Two notable examples are worth mentioning — the cases of Harry Rimmer (1890-1952) and Henry Morris (b. 1918).

Rimmer, a Presbyterian minister and self-proclaimed "research scientist," had founded his Research Science Bureau, Inc. in the early twenties "to prove ... that science and the literal Bible were not contradictory." He gained influence and notoriety travelling the lecture circuit and publishing numerous books and pamphlets. Despite his wide influence, his writings represented to many ASA members the sort of "hopeless" material that "should not have been published" in the first place.<sup>22</sup>

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It was the fall of 1947 and the ASA leadership was in the thick of final reviewing and preparation for *Modern Science and Christian Faith*. Already swamped with ASA business, Everest received a request from Van Kampen, their publisher, for "the ASA's opinion of Harry Rimmer's books prior to accepting some for republication."<sup>23</sup>

Only one book, however, Rimmer's *Theory of Evolution and the Facts of Science*, ended up being subjected to ASA scrutiny. Given the ASA penchant for the phrase "facts of science" this was a natural choice for review. In typical fashion Rimmer explained that "With facts we have no dispute; we accept every fact of every science known to man. Our argument is with the interpretation of those facts, and it does not follow that because we accept the facts in any given field of research we are constrained to accept all the theories based on those facts."<sup>24</sup>

Despite the presence of such conservative names as Walter Lammerts, William Tinkle, and Edwin Monsma on the eight-member review team, the overwhelming consensus was that whatever merits the book may possess, its "glaring faults" ultimately "weaken the book to the point where it should not be republished." Perhaps there is subtle irony here. The ASA, a group established to demonstrate that "there can be no real discrepancies between the Bible and the real facts of modern science," concludes this episode recommending that a Christian publisher avoid issuing a book whose author spent a lifetime allegedly championing the very same cause. Perhaps, sensing an incongruity, one member expressed concern that the ASA "might become known in the eyes of the Christian world only as an anti-Rimmer club."<sup>25</sup>

There were several ASA members, however, intent upon preventing that. Chief among these was Wheaton biology professor and soon-to-be-ASA-President, Russell Mixer (b. 1906). Wheaton College had been named recipient of a sizable donation. A condition for receiving this gift, however, was that Harry Rimmer visit the school annually to make sure evolution was not being taught. Mixer, chuckling at the whole situation surrounding the review of Rimmer's book, wrote to Everest proclaiming, "Rimmer has me on the spot! ... he doesn't know any of this! When he comes to town next year, I'll get sick ... All you need to do is laugh." Mixer later explained his jocular comments to Everest, "Really, I was joking about Rimmer. He's a joke(r) too, not so? But wouldn't he have fun if he knew just who was doing what?" Rimmer never did find out "who was doing what" and Van Kampen did not republish his book. Rimmer died three years later and in many libraries his books began gathering dust.<sup>26</sup>

But as that dust was settling on Rimmer's books, the influence they had exerted over the young mind of Henry Morris was just beginning to manifest itself. While still in his twenties and wrestling with the way to relate science to his faith, Morris had read *The Theory of Evolution and the Facts of Science*. He later confessed that Rimmer's "book did as much as any one thing to convince me once and for all that evolution was false." In 1947, modeling his mentor, Morris was busy polemicizing against evolution.<sup>27</sup>

One essay was a piece entitled "Can a Christian Consistently Believe in Evolution?" The summary paragraph declared unequivocally Morris's answer to the title's rhetorical question: "Evolution, then, in any form, whether materialistic or theistic, is an utterly un-Scriptural and un-Christian philosophy and is unscientific as well." Morris did not submit this essay to the ASA for review, but *Moody Monthly* did. Everest had received a letter from the magazine's editorial staff requesting an opinion of Morris's manuscript. Sarcastically remarking upon the ASA's success at acquiring material for review, Everest commented to a colleague, "Well, we asked for it, and now we have it!"<sup>28</sup>

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*"Evolution, then, in any form, whether materialistic or theistic, is an utterly un-Scriptural and un-Christian philosophy and is unscientific as well," declared Morris's essay.*

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What did the ASA do with it? — pretty much the same thing they had done with Rimmer's book. Everest selected three prominent ASA leaders for the task. They were Peter Stoner, Russell Mixer, and J. Laurence Kulp (b. 1921), the bright young Wheaton alumnus whose Ph.D. in physical chemistry from Princeton was followed with all the coursework for a second doctorate in geology from Columbia. Everest, especially pleased that ASA had attracted

a member of Kulp's caliber was hopeful that the young geochemist would help steer the ASA into the mainstream of scientific respectability.<sup>29</sup>

One thing was certain: Kulp's ardent resolve to steer away from material like Morris's essay. Critical of the article's "illogical" thesis and "unscholarly attitude," Kulp suspected that Morris's summary paragraph alone "would make most educated readers look for the nearest trash basket." The assessments of Stoner and Mixer were no more favorable. Everest sent the reviews to *Moody Monthly* with the kind comment that "men like Morris are so very sincere." But no recommendation to publish the article accompanied the kind remark. Perhaps another subtle irony lies in this episode, where the ASA gave the "thumbs down" to the work of a man they would soon welcome into membership and later elect as a fellow.<sup>30</sup>

The founders' vision for the ASA mark of approval as the symbol of quality and trustworthiness in evangelical science never fully materialized. Ironically, this was not because they did not review books, films, and pamphlets. They just had a darned hard time finding any that passed muster. Kulp had complained, "If there is even one 'good' anti-evolutionary book, I would be delighted to know about the same." Maybe that was the problem. ASA reviewers increasingly seemed to see the classification "good anti-evolutionary book" as an oxymoron. And when so much of the literature to review was anti-evolutionary, gaining name recognition with a "seal of approval" could be tricky. So rather than blackballing fundamentalist pseudoscience by sifting Christian literature through its reviewing filter, the ASA increasingly took the offensive, attacking scientific follies head on and offering alternatives designed to bring the emerging new evangelical coalition into harmony with mainstream science.<sup>31</sup>

## Too Much Influence by the Orthodox Viewpoint? Washing Up Flood Geology

If eradication of fundamentalist pseudoscience was an objective of the ASA reviewing function, that did not mean ASA members always drew the line between quackery and legitimate science in the same way. Member disagreed with member; and over time individual members changed their views.<sup>32</sup> But when exchanges of ideas are lively enough, they can be the source of inharmonious strains. This is especially true in the case of controversial subjects. If consonance between members on debatable issues was a desired end, it would come, if at all, only after enduring a measure of dissonance. The stories of ASA dealings during the forties and fifties with "Deluge Geology" and evolution are fitting illustrations of harmonious dissonance.

In the spring of 1942 two ASA founders, John Van Haitsma and Russell Sturgis, communicated approving judgments of George McCready Price's (1870-1963) deluge geology. Van Haitsma concluded that Price's book, *Genesis Vindicated*, which argues for a recent six-day creation, "is in line with the aim of our society." And Sturgis pronounced the early volumes of *The Bulletin of Deluge Geology*

and *Related Sciences* "very worthwhile material" and "well worth having in our library..."<sup>33</sup>

How far would the ASA go in espousing this unconventional harmonization of Genesis and geology? Everest later received a letter from Ben F. Allen, Secretary of the Deluge Society, proposing that "the two societies get together in the publication of a journal." And, when Price himself (to the surprise of many) showed up in the fall of 1942 at a small "regional meeting" at Stoner's Pasadena home, Walter Lammerts seized the opportunity to present a letter from Cyril B. Courville, leader of the Deluge Society. Courville's proposal echoed Allen's sentiments and suggested the formation of an interdenominational board to back the proposed journal. Most agreed, however, that it would be unwise to "sponsor some one idea just to watch the heads fall." The subtle message to the flood geology contingent was that the ASA would rather do its job "the slow hard way and with men who are not sold out to some idea."<sup>34</sup>

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*"I asked our Geologist how many Geologists in the schools accepted Price's work. He says absolutely none, but some schools require their students to completely refute this argument before they complete their course."*

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Apparently, however, the hint was not strong enough. In early 1944 another associate of the Deluge Society, Dudley Joseph Whitney (1883-1964), approached the ASA with a proposal for joining together in the formulation of a "Creed of Creation." Fearing the worst, Everest shared the Whitney correspondence with the council. He began his accompanying letter, "I have a bomb in my lap which I would like to pass on to the rest of you." Unwilling to be drawn into association with an idea he considered "basically unsound" and "extremely unscientific," Peter Stoner penned a few remarks to let Everest and the rest of the council know his feelings about flood geology:

I feel that our job is to show the relation of the sciences to the Bible and to do it in a way, as far as possible, friendly to science. This deluge geology bunch seems to go out with a chip on their shoulders and dare science to knock it off. They certainly have the scientific world against them.

I asked our Geologist how many Geologists in the schools accepted Price's work. He says absolutely none, but some schools require their students to completely refute this argument before they complete their course.

[And in another letter] ... The Deluge group have been trying to get a debate for a long time... It is something like the position I would be in if I claimed  $2 \times 3$  was 7 and challenged the Mathematical world to debate the sub-



ject. No Mathematician of standing would accept such a debate.<sup>35</sup>

Not surprisingly, the ASA leadership remained disinclined to join forces with the flood geology group. Instead they voiced agreement with Allen MacRae, president of Faith Seminary, who would soon join the ASA council. In a statement incorporating "Rimmeresque" overtones MacRae explained:

To my mind it would be unfortunate for the Affiliation to go on record strongly in favor of any one of the various views. It seems to me that its purpose should rather be to show that the Bible as correctly and carefully interpreted, and without any twisting whatever, leaves room for every scientific fact as yet discovered, however much it may be at variance with some particular theory built upon these facts.

Admitting the existence of "differences of opinion within [their] group," but not wishing to make that dissonance public, the ASA leadership followed the advice of Secretary-Treasurer, Marion D. Barnes, "to let the correspondence with D.J.W. drop." It seemed that the ASA was making it clear to all concerned, in as harmonious a way as possible, that an "open forum" was not the same as a platform for the peculiar.<sup>36</sup>

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*It seemed that the ASA was making it clear to all concerned, in as harmonious a way as possible, that an "open forum" was not the same as a platform for the peculiar.*

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The questions of how to relate Genesis and geology had not been settled, however. In September of 1947, a seminar, again at the home of Peter Stoner, was held on the subject "The Age of the Earth by Radioactive Methods." Ultimately printed and distributed in 1948 as *A Symposium on "The Age of the Earth" by Members of the American Scientific Affiliation*, the collection of seven papers generally supported the reliability of using radioactivity in age determination. The opening paper, "The Biblical Evidence of the Age of the Earth," by Bernard Ramm concluded that "the time element as a general principle can be granted to the geologist." And J. Laurence Kulp's review of the "Present Status of Age Determination in Geology" resonated with confidence in the usefulness of radiometric dating methods.<sup>37</sup>

But the pages of the little booklet still contained enough room for echoes of Everest's nemesis, Dudley J. Whitney. Walter Lammerts contributed an essay based in part on a 1938 paper by Whitney. Following Whitney, Lammerts argued that radioactive analysis was seriously inconsistent with "the usual methods used in age determinations." As if trying to minimize the impact of Lammert's contrary

tone, six of the short paper's eight paragraphs were followed with editor's explanatory comments, such as, "These anomalies are not as bad as the author indicates." The tone of the booklet indicated the general ASA desire to walk in harmony with mainstream geology. But in typical fashion, there remained a dissonant chord.<sup>38</sup>

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*Edwin Y. Monsma, a Calvin College biology professor, was especially concerned about Kulp's willingness (in "Antiquity of Hominoid Fossils") to admit uniformitarian presuppositions and the possibility that "wholesale death and destruction took place before the fall."*

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Growing weary of the persistent legacy of Price, Rimmer, and others, Everest hoped that Kulp would lend his expertise at the 1948 ASA convention the following August. He wrote Kulp in the winter of 1947 with a plea so eager it bordered on the urgent:

It would be most helpful if you would present a comprehensive destruction of Flood Geology, we'll give you a whole session if necessary, or an evening meeting, perhaps. This material could also appear as a magazine article, or better yet, the ASA could publish it in monograph form and publish it ourselves in order to allow the more comprehensive data which would be necessary for a solid work.<sup>39</sup>

Kulp, who had been reading about man-like fossils, had come to believe another tactic was in order. He told Everest that contrary to "the various pseudoscientific statements in Christian apologetical literature" there was a "tremendous number of geological facts concerning the chronology of the Pleistocene period [which] make it apparent that such [man-like] creatures have been on the earth probably hundreds of thousands of years." He felt that the ASA ought to know about these facts. Consequently he recommended postponing what he agreed to be "the necessary destruction of flood geology" in order to focus upon a subject he believed to be "of far more importance to the A.S.A."<sup>40</sup> Thus Kulp's 1948 convention paper was entitled "Antiquity of Hominoid Fossils."<sup>41</sup>

Following Kulp's presentation a lively discussion session ensued, marked by worried comments from Edwin Y. Monsma. The Calvin College biology professor was especially concerned about Kulp's willingness to admit uniformitarian presuppositions and the possibility that "wholesale death and destruction took place before the fall."

Kulp responded congenially and with confidence that no genuine evangelical convictions were threatened. De-

spite the mild dissonance, the session concluded with Kulp's proclaimed objective realized — "instruct[ing] evangelical scholars in the ways of geology and the age of man."<sup>42</sup>

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***Kulp's paper, simply titled "Deluge Geology," set about to remove systematically any shred of credibility that flood geology owned.***

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Kulp's self-described work had, indeed, only begun. About a month later — in a letter congratulating him on being elected to replace Monsma on the executive council (a move perhaps symbolic of the direction ASA was moving and certainly one capitalizing on Kulp's "strategic place") — Everest reminded Kulp of the persistently lingering bogey man. "This flood business seems continually to crop up," he groaned; and then went on to share a substantive excerpt from one of Henry Morris's recent letters. Intently hopeful that Kulp would view Morris's remarks as evidence that flood geology required a straightforward dismantling and burial, Everest concluded the letter with the hint to take on the subject at the next annual meeting. Kulp concurred "that an analysis of Flood Geology is required." His only request was that Everest provide him with more information on the deluge school; for his own library contained only two of Price's books.<sup>43</sup>

The ASA president gladly replied with a promise to loan Kulp his file of "The Bulletin of Deluge Geology" with the condition that it be returned after use because, as Everest explained, "Although this is on my 'screw shelf', I prize them highly." A note of caution was at the heart of the sagacious leader's letter, however. Although Kulp was a known quantity and had proven at the last convention that he could "treat ... controversial subject[s] with tact," Southern California, the site of the next meeting, was home of "the foremost proponents" of flood geology. "[T]he presentation of a destruction of something they hold very close to biblical truth itself," cautioned Everest, "if not done very carefully and wisely, might turn them from the ASA."<sup>44</sup>

Plans went forward, however, and Kulp plunged into the corpus of works by flood geologists. Upon completion of the last copy of the "Bulletin of Deluge Geology," he pronounced in exasperation, "What confusion!" Clearly determined to unleash all his abilities on the young-earth rhetoric, Kulp proposed to Everest that he also "undertake the authorship of a purely scientific monograph on the present status of radioactive age determination." Everest later commented that he rarely encountered "such a display of energy on an ASA project." He seemed to find the whole prospect exhilarating, however. "Inasmuch as I am in hearty accord with your motives, I will hold on tight and let's go," he proclaimed. So by early 1949, the stage was being set for what could be a big western showdown in August.<sup>45</sup>

Throughout, Everest had remained the consummate administrator, always operating in order to derive the maximum return with the least interpersonal friction. Acutely aware of the stakes, he reminded Kulp that he was "looking forward to a cool, dispassionate, and factual presentation that will essentially close the subject."<sup>46</sup>

Kulp's paper, simply titled "Deluge Geology," set about to remove systematically any shred of credibility that flood geology owned. His introduction made the problem clear. Deluge geology was a theory "in complete disagreement with the conclusions of trained geologists the world over." But, it had "grown and infiltrated the greater portion of fundamental Christianity in America primarily due to the absence of trained Christian geologists." His task — try to train them. Kulp argued that flood geology entailed "four basic errors." After explaining each in the context of an extended geology lesson, Kulp finally pronounced his judgement that Deluge Geology was "entirely inadequate." But, he assured, this should not be a source of difficulty to the evangelical Christian. "The science of geology precludes certain interpretations of Genesis but does not make impossible acceptance of plenary inspiration of the scriptures." And so the "cool, dispassionate, and factual presentation" for which Everest had hoped finished with assurances that orthodoxy remained intact.<sup>47</sup>

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***Morris, complaining that Kulp had "used the paper merely to bolster his pre-determined conclusion," surmised that its author "may still be too much influenced in his own thinking by the orthodox geological viewpoint."***

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The big showdown had come to pass, but, despite the presence of "feeble" 79-year-old George McCready Price in the front row, it did so without any guns a-blazin'. At the last minute circumstances had conspired to prevent Kulp from attending the meeting; so Marie Fetzner was recruited to read Kulp's paper. Her presentation was followed by plenty of discussion, but, as Everest later reported to Kulp, Price only "said something very brief which missed what everyone was waiting for."<sup>48</sup>

Everest had also hoped that Kulp's presentation would "essentially close the subject." After pondering the conference's impact, however, he admitted that "a discussion of a paper like that needs more than a single hearing for best results." Kulp concurred, "I suppose we must keep banging away on the educational program." And bang away they did.<sup>49</sup>

Although harmony rather than dissonance had characterized the 1949 meeting in Los Angeles, that did not mean Kulp's message was passively or universally warmly received. In the June, 1950 issue of the ASA *Journal* there appeared a one page anonymous article entitled, "Com-

ment on the 'Deluge Geology' Paper of J. L. Kulp." Its author was none other than Henry Morris. Morris, complaining that Kulp had "used the paper merely to bolster his pre-determined conclusion," surmised that its author "may still be too much influenced in his own thinking by the orthodox geological viewpoint." And while he was on the subject, Morris went on to include Cordelia Erdman, whose paper on "Fossil Sequence in Clearly Superimposed Rock Strata" had preceded Kulp's at the 1949 meeting, as another who "I feel ... is perhaps too much committed to the orthodox viewpoint."<sup>50</sup> When it comes to the point where one man's heresy is another man's orthodoxy and vice versa, it has also come to the point where the word dissonance has found legitimate use.

Morris was not the only ASA member to find fault with Kulp's paper. At the 1951 meeting at Shelton College, Uuras Saarnivaara, a sociologist specializing in exegesis and ethics at Suomi Theological Seminary in Hancock, Michigan, trotted out his rejoinder to Kulp in a paper entitled, "Flood Geology." According to the abstract, the paper promised to show that "practically all the arguments of Kulp against flood geology are based on faulty information, or on faulty conclusions." Yet, despite the abstract's brazen claims, it apparently fell on deaf ears.<sup>51</sup>

The dissonant chatter about flood geology between ASA members did not remain within the confines of ASA meetings and publications either.<sup>52</sup> During the mid 1950s the pages of *InterVarsity's HIS* magazine became a forum for various ASA members to dispute flood geology and related subjects. Both Kulp and Morris were key figures in these articles.<sup>53</sup>

That Whitcomb and Morris's *The Genesis Flood* would not appear for the better part of a decade is evidence enough that the dissonant harmony sounding from ASA quarters would continue. Everest had hoped to "essentially close the subject." But such visions of washing up flood geology once and for all were obviously symptoms of too much influence by the orthodox viewpoint.

## Coming to Terms with the "E-Word"

In early 1948 Alton Everest received a letter from Fuller Seminary's professor of theology and philosophy, Carl F. H. Henry, inviting Everest and local ASA members to a meeting on the Fuller campus. Henry explained, "I do not think of anything more important than the evangelical scientists of our country could dedicate themselves to than the project we hope to launch that night, a closely-knit refutation of evolution timed to come out on the hundredth anniversary of Darwin's origin of species [sic]." Henry went on to suggest that he, Everest, and Bernard Ramm get together beforehand for a planning session: "We ought not to leave it to the meeting itself to evolve something, for none of us believe in naturalistic evolution anyway, nor theistic evolution for that matter." The delighted Everest invited eight other colleagues to the gathering to help launch the program for what he explained "may become one of the most significant single Christian efforts of our day."<sup>54</sup>

After that initial meeting the whole project remained on the back burner as more pressing issues received attention. One early response did come from Wheaton alumnus, J. Frank Cassel (b. 1916) who had gone on to join the zoology faculty at Colorado A. & M. College (and would later move to North Dakota Agricultural College and would serve on the ASA executive council). Cassel described the proposal as "near to my heart;" but went on to voice reservations at the "scarcely scientific" attitude of assuming "that evolution can be refuted!" He believed that instead of "the preconceived attitude of disagreement," the ASA should be positive. Certainly scientists would welcome a "thoroughgoing Creationist interpretation" of observed facts if given in the right attitude, he argued.<sup>55</sup>

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The first real ASA effort to give such a "creationist interpretation" of evolution came in 1950 with the publication of the organization's second monograph, *Creation and Evolution* by Russell Mixer. Actually a compilation of papers Mixer had composed in the late 1940s, the monograph was originally written as a critical evaluation of A. F. Shull's influential textbook, *Evolution*. Convinced that "people who place their faith in Divine Creation as the explanation of the development of life ... have as much justification for their belief as do [atheistic evolutionists for theirs]," Mixer was unwilling to make a case for the soundness of macroevolutionary hypotheses. But he determined that "the flood was not world wide and may be disregarded in a study of animal distribution." Furthermore, following and expanding upon Floyd Hamilton's *The Basis of Evolutionary Faith*, to which he referred throughout, Mixer considered likely the evolutionary development of organisms "within the order." Not surprisingly, his conclusion that "a creationist may believe in the origin of species at different times, separated by millions of years, and in places continents apart," was bothersome to ASA's anti-evolutionary contingent. As had been the case with J. Laurence Kulp's "Deluge Geology" paper, an anonymous critical response appeared in the ASA journal. Perhaps this was a gesture symbolic of the fact that the ASA movement away from anti-evolutionism was not to be a saltatory change.<sup>56</sup>

Sensing this, Cassel, who was preparing his paper, "A Study of Evolution" for the 1951 Shelton College Convention, wrote to Everest with an inquiry about Carl Henry's original proposal: "How do things stand? I don't want to rehash too much old stuff, neither do I wish to arouse any sleeping dogs I can't tame." Everest, ever the sensitive politician, replied that Henry's proposal was "not dead, only sleeping," like the dogs that might awaken if Cassel did not tame his proposed paper abstract by re-

moving the statement, "Therefore, evolution is a fact." Cassel reluctantly complied. And it was just as well, for some were not ready to face the "E-word" in that context just yet. For example, commenting to Mixer on the proposed centennial volume, founder Peter Stoner explained, "I would be in favor of the ASA publishing a book giving the arguments against the Theory of Evolution .... if we can establish the fact that there were acts of creation in the biological field, the theory of evolution falls automatically."<sup>57</sup>

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*"Until we admit something exists, we can't study it — and evolution is in need of much thoroughgoing study by conservatives. At least among us girls, let's call it by name, talk it over, and then do something about it."*

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Still, the patience with anti-evolutionism among a younger progressive ASA contingent was beginning to wear thin. Kulp, for instance, had responded to Mixer regarding the Darwinian centennial volume, "I, for one, will have no part of a straight "anti-evolution" treatise, which is the form in which it was originally proposed." And Cassel, by the time of the Shelton College meeting, was at about his wits' end. In an letter of exasperation he complained:

... until we admit something exists, we can't study it — and evolution is in need of much thoroughgoing study by conservatives. At least among us girls, let's call it by name, talk it over, and then do something about it. Let's stop this wasting time saying, now this is evolution, and I believe in it, but it really isn't evolution — because something else is evolution.

... so let's make use of a perfectly good — if much misused and much misunderstood word.

Now I well realize that in accepting such a position ... we are heretics on both ends and "no longer fundamentalists!" (Oh happy day, what an easy way to get out from under that stigma — gentlemen, I jest).

... I have no particular love for my statement — "Therefore, evolution is a fact." ... I tried to simply say that 2 plus 2 equals 4, rather than put it as we have been for so long in A.S.A. — "It is axiomatic what 2 plus 2 equals, but I can't say it cause it's a dirty word — and besides that's not what I'm talking about, anyhow." This time it happens to be what I'm talking about.<sup>58</sup>

Cassel's views gradually prevailed. By mid-decade, even H. Harold Hartzler, the ever-agreeable ASA President from Goshen, Indiana, informed a group of ASA leaders that "the A.S.A. should not be an anti-evolutionary society. Rather, we should examine the facts." And Everest, who

had once led prospective members to believe that the ASA would be an anti-evolutionary organization, admitted a change of outlook: "My view concerning the purposes of the ASA and some of the problems, such as this topic of evolution, have matured considerably during the course of the past ten years .... I cannot now recommend as a primary purpose of the proposed volume 'to show the inconsistency of evolution.' This is far too negative an approach."<sup>59</sup>

Perhaps a watershed point in the evolution of ASA thinking on evolution came in late August, 1957 at the twelfth annual convention held on the campus of Gordon College and Divinity School. Here the atmosphere was made right for discussion of the "E-word," with such papers presented as "The Formation of Living Organisms From Non-Living Systems," by the amiable iconoclast, biochemist Walter Hearn, "Primitive Earth Conditions and The Origin of Life," by Karl Turekian, one of Kulp's outstanding Ph.D. students, and "Radiocarbon Dating — A Tool in Fixing Chronology of the Last 50,000 Years," by Edwin Olson, another of Kulp's assistants at the Lamont Geological Observatory. So when, in the session devoted to "An Evaluation of the Fossil Record," Russell Mixer, the guru of evangelical thought on origins, finally got up and said he felt the gaps in evolutionary theory were being closed and that he was prepared to quit emphasizing those gaps, many felt the ASA had come to a big turning point.<sup>60</sup>

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*Whether or not that meeting functioned for many as a cathartic experience or an eye-opening revelation of ASA apostasy on the evolution questions is not especially important. Rather, the point is that by the end of the decade the ASA had been instrumental in bringing about an "evolution of evangelical thinking on evolution."*

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Whether or not that August meeting functioned for many as a cathartic experience or an eye-opening revelation of ASA apostasy on the evolution questions is not especially important. Rather, the point is that by the end of the decade the ASA had been instrumental in bringing about an "evolution of evangelical thinking on evolution." Reflecting on the fact that "Evolution" had originally been considered "a dirty word," Frank Cassel admitted that "in fifteen years we have seen develop within A. S. A. a spectrum of belief in evolution that would have shocked all of us at the inception of our organization."<sup>61</sup>

When *Evolution and Christian Thought Today* finally appeared in late 1959 under Mixer's editorship, the final chapter entitled "Theology and Evolution" by Carl F. H. Henry was somehow "out of tune" with the rest of the

volume. As the author of another chapter later remarked, "It was almost as though he [Henry] hadn't read the other chapters or he didn't know the material that other people were talking about." Rather than the "closely-knit refutation" that Henry had envisioned over a decade earlier, the book came off the press as something of an eclectic Christian endorsement of organic evolution. Significant was the chapter on "The Origin of Life" by Walter Hearn and his student, Richard Hendry. Suggesting the likelihood that "a complete metabolic machine may have appeared only after long periods of 'chemical evolution,'" the authors concluded that "the expressions in Scripture regarding the creation of life [were] sufficiently figurative to imply little or no limitation on possible mechanisms." Despite these controversial propositions, the book placed the American Scientific Affiliation in the mainstream of the emerging neo-evangelical constituency. While *Christianity Today* voted *Evolution and Christian Thought Today* one of the twenty-five "best books of 1959 from a strictly evangelical point of view," *Eternity Magazine* judged the volume to be "The Most Significant Book of the Year" for 1960.<sup>62</sup>

As with the story of the ASA dealings with deluge geology, the dissonant tones accompanying efforts to come to terms with the "E-Word" would not fade away. Instead they would resonate ever louder until some of those making those dissonant sounds would depart from the ASA fold in order to sing in unison their own song. But events of that departure make another whole story.

## Conclusion

Harmony entails a pleasing combination of different tones. It is much more satisfying to the ear than unison. Perfect harmony is also more difficult to obtain, however. Therefore, those pursuing the greater richness that comes from singing in harmony also risk creating discordant sounds in the attempt.

The ASA founders adopted a musical metaphor to explicate their view of the encounter between science and Christianity. Rather than unison, the word they chose was harmony. They chose well; for the members of the ASA have only rarely sung in unison. On the other hand, the mingling of different convictions and beliefs has on occasion fallen short of the richest harmony. Of course, rhetoric does not always match perfectly the historical realities.

Webster defines dissonance as "a mingling of discordant sounds, lack of agreement, or inconsistency between the beliefs one holds."<sup>63</sup> During its first decades the American Scientific Affiliation was at times a source of dissonance. But as Godly pilgrims pursuing Truth, they were more tolerant of their differences, even if they did notice them—Everest once quipped to Kulp referring to the ASA, "we are quite brutal with ourselves."<sup>64</sup>

The result has been harmony, but at times a dissonant harmony, issuing from an affiliation of scientists who were out to prove to the world and to themselves that the term "evangelical scientist" is not an oxymoron. \*

## ACKNOWLEDGEMENTS

I would like to thank the many members (past and present) of the American Scientific Affiliation who have supported this work by offering encouragement, granting interviews, and sharing with me the rich resources of their personal archives. Research for this paper was funded in part by a grant from the Lilly Endowment and the Institute for the Study of American Evangelicals.

## NOTES

<sup>1</sup>For reference to the ASA as an "infant religion and science association" see John P. Van Haitsma to F. Alton Everest, December 31, 1941, American Scientific Affiliation Collection, Wheaton College Archives and Special Collection (hereafter referred to as "ASA Papers"); F. Alton Everest, *The Story of the American Scientific Affiliation*, p. 7, ASA Papers, (comparison to the reformation); F. Alton Everest, "What Is The American Affiliation of Scientists?," typed manuscript, December 6, 1941, ASA Papers, (comparison to renaissance).

<sup>2</sup>F. Alton Everest to P. Carlson, November 18, 1941, ASA Papers, (no real discrepancies); F. Alton Everest, *The Story of the American Scientific Affiliation*, p. 7, (red-blooded man's duty and prove to the world), ASA Papers. By self-admission, not a scientist, but an engineer, (see F. Alton Everest to E. B. Saye, March 5, 1943, ASA Papers) Everest had been at first favorably impressed by the writings of George McCready Price, Harry Rimmer, and especially the physician Arthur I. Brown, whose radio messages on the "Miracles of Science" received wide airing along the Pacific Coast. See Arthur I. Brown, *Miracles of Science* (Findlay, Ohio: Fundamental Truth Publishers, 1945).

For further discussion of Rimmer, Price, Brown, and the others involved with science and religion themes during the first half of the century see Ronald L. Numbers, "The Creationists," in *God and Nature: Historical Essays on the Encounter between Christianity and Science*, eds. David C. Lindberg and Ronald L. Numbers (Berkeley and Los Angeles: University of California Press, 1986), pp. 391-423 and Henry M. Morris, *History of Modern Creationism* (San Diego: Master Book Publishers, 1984).

Everest's friends and colleagues often remarked on his abilities as a tireless organizational chief. For example see Russell Mixer to F. Alton Everest, January 15, 1949; where Everest is called "Most Notable President and Voluminous Worker."

<sup>3</sup>F. Alton Everest to John P. Van Haitsma, January 28, 1942, (wrangling among ourselves); F. Alton Everest to Arthur P. Kelly, October 4, 1942, (powerful tool); both in ASA Papers.

<sup>4</sup>Regarding "thinking matters through," Everest had suggested to Van Haitsma in the January 28 letter the possibility of publishing a paper to present the ASA view: "That would be in black and white and hard to misunderstand, and would come only after much thought on the subject." So it was not clear from the outset that the ASA founders were opposed, in principle, to having an ASA "position." But, they postponed adopting such a position until enough "thought on the subject" had been completed. On "unerring" Bible and the "real facts of science" see "The Constitution of the American Scientific Affiliation" Article II - Creed, as found in "The Story of the American Scientific Affiliation".

<sup>5</sup>For a fine introductory survey see John Losee, *A Historical Introduction to the Philosophy of Science*, 2nd ed. (Oxford: Oxford University Press, 1980); William Whewell, *Philosophy of the Inductive Sciences* (London: John W. Parker, 1847); Pierre Duhem, *The Aim and Structure of Physical Theory*, trans. by P. Wiener (New York: Atheneum, 1962); Thomas S. Kuhn, *The Structure of Scientific Revolutions*, 2nd ed., enlarged (Chicago: University of Chicago Press, 1962).

The generalization that the founders had not given much thought to philosophical questions I arrived at initially by surveying writings and correspondence. Confirmation of this view came in the form of an interview of F. Alton Everest by historian Ronald Numbers. During that conversation Everest admitted that "none of these [the founders] were what you would call philosophically oriented persons ..." I acknowledge the generosity of Ronald Numbers for sharing this information.

<sup>6</sup>Mark A. Noll, "Introduction," in *The Princeton Theology 1812-1921: Scripture, Science, and Theological Method from Archibald Alexander to Benjamin Warfield*, ed. Mark A. Noll (Grand Rapids: Baker Book House Company, 1983), pp. 31 and 41.

<sup>7</sup>Peter W. Stoner, *From Science to Souls* (Chicago: Moody Press, 1944), pp. 100-101. See also Stoner's undated manuscript, "Come let Us Reason Together or New Evidences of the Inspiration of God's Word." For

- biographical information, see Stoner's autobiography, *God's Dealings With One Man*, n.d. ASA Papers.
- <sup>8</sup>F. Alton Everest, "Can Christians Be Scientific," *Moody Monthly* (June, 1947), p. 737. See also George M. Marsden, *Religion and American Culture* (San Diego: Harcourt Brace Jovanovich, 1990), p. 102 for discussion of his term "methodological secularism" which seems to have application in this context.
- <sup>9</sup>Abraham Kuyper, *Principles of Sacred Theology*, trans. by J. Hendrik De Vries (New York: Charles Scribner's Sons, 1898; reprint ed., Grand Rapids: Baker Book House Company, 1980), p. 156. For Kuyper's entire discussion see Chap. 3, "The Twofold Development of Science," esp. pp. 150-159. For Warfield's view that Kuyper's position was "sheer nonsense" see George Marsden, "The Evangelical Love Affair with Enlightenment Science," Chapter 5 in his *Understanding Fundamentalism and Evangelicalism* (Grand Rapids: William B. Eerdmans Publishing Co., 1991), p. 123.
- <sup>10</sup>Marsden, *Understanding Fundamentalism and Evangelicalism*, p. 151.
- <sup>11</sup>C. Van Til to F. Alton Everest, undated but marked received November 24, 1945, ASA Papers, Cornelius Van Til, "Address by Professor Van Til of Westminster Theological Seminary," *Yearbook of the American Scientific Affiliation* (1946): 24, 26. I am grateful to Jack Haas for bringing to my attention these references.
- <sup>12</sup>Cornelius Jaarsma, "Christian Theism and the Empirical Sciences," *Journal of the American Scientific Affiliation* 7 (June, 1955): 4, 6. This article is the text of the first monograph which the ASA Council decided to republish in the Journal. Apparently by 1955 the message was still resonating.
- <sup>13</sup>Comment on *Modern Science and Christian Faith* being a "Christian Classic," is taken from typed draft of a promotional brochure, ASA Papers. "To our knowledge, this is the first successful attempt to present a concise, scientifically accurate treatment of the relationship of the Bible to the many fields of modern science," proclaimed the dust jacket. F. Alton Everest, ed. *Modern Science and Christian Faith: A Symposium on the Relationship of the Bible to Modern Science* (Wheaton, IL: Van Kampen Press, 1948). F. Alton Everest, "Preface," in *Modern Science and Christian Faith*, p. 7, (harmony); Frank Allen, "The Witness of Physical Science to the Bible," in *Modern Science and Christian Faith*, p. 129, (facts of science); Anon., "Psychology and the Christian Faith," in *Modern Science and Christian Faith*, second edition, enlarged, 1950, p. 277. The author of this chapter was John Howitt, then at Ontario Hospital, Hamilton, Ontario, who felt constrained by his employment arrangement to avoid open publication on science and religion. The text from the first edition which Everest changed had read, "No psychological gymnastics are necessary to reconcile the Christian position with the rapid advances in the field of psychology."
- <sup>14</sup>Roger J. Voskuyl, "A Christian Interpretation of Science," in *Modern Science and Christian Faith*, p. 14; Edwin K. Gedney, "Geology and the Bible," in *Modern Science and Christian Faith*, p. 50. Gedney continued this passage arguing, "The scientific interpretation is basically mechanical in character, blind in its operation, and quite void of the supernatural. The Scripture is based primarily upon the supernatural as an effective cause."
- <sup>15</sup>For example, Robert D. Knudsen read a paper, "The Idea of Christian Scientific Endeavor in the Thought of Herman Dooyeweerd," at the 1953 annual convention. Here he argued against the assumption of "a neutral factuality that can be grasped and understood alike by Christian and non-Christian." Robert D. Knudsen, "The Idea of Christian Scientific Endeavor in the Thought of Herman Dooyeweerd," *Journal of the American Scientific Affiliation* 6 (June, 1954): 11.
- <sup>16</sup>Marsden, *Understanding Fundamentalism and Evangelicalism*, pp. 150-151.
- <sup>17</sup>"Constitution of the A. S. A., Article II, Section 1, as reproduced in F. Alton Everest, *The American Scientific Affiliation*, Appendix 5a.
- <sup>18</sup>F. Alton Everest, Open letter to prospective members beginning, "Dear Friend," January 1, 1943, (reviewing first); F. Alton Everest to Paul De Koning, February 7, 1943, (recommend without reservation) - Interestingly, the package of books included, among others, volumes by L. Allen Higley, George McCready Price, and Harry Rimmer. F. Alton Everest to W. B. Anderson, April 13, 1942, (crack-pot presentation, dark brown taste); see also Peter W. Stoner to Editor of Sunday School Times, *Sunday School Times* (December 26, 1942), p. 1073; F. Alton Everest to Irving Cowperthwaite, December 7, 1941 (Good House-keeping Seal); except Stoner letter all in ASA Papers.
- <sup>19</sup>F. Alton Everest to W. B. Anderson, April 13, 1942, (one job, proven beyond shadow, more inspired than Genesis); see also F. Alton Everest, Open letter to prospective members, January 1, 1943, pp. 3-4. The sensational little book was Karl G. Sabiers, *Astounding New Discoveries* (Los Angeles: American Prophetic League, n.d.), a popularization of the numerological work of the Canadian, Ivan Panin. Peter Stoner gave his analysis of this work in "Dr. Ivan Panin's Work on Bible Numerics," *ASA Yearbook* (1947). A small controversy was stirred up when the fundamentalist magazine *Sunday School Times* published a scathing review of Sabiers' book (Sept. 5, 1942, pp. 711-713). Among the outpouring of letters in response was one from Stoner published in the December 26, 1942 issue (see pp. 1058ff). See also F. Alton Everest, *The American Scientific Affiliation*, p. 111f.
- It is somewhat ironic, but in keeping with a Warfieldian belief that one can muster evidence for inspiration rather than presupposing it, that Stoner's book, *From Science to Souls*, as well as his booklet *Come Let Us Reason Together*, and an entire chapter in *Modern Science and Christian Faith*, "Mathematics and Prophecy," were devoted to using mathematical techniques in order to establish the inspiration of scripture. Clearly, members of the early ASA were generally in favor of both the means and end of the little book they helped demolish, with but one exception, its derivation of truth from error. See note 7 for the Stoner reference. The chapter, "Mathematics and Prophecy," in *Modern Science and Christian Faith* was by Wheaton College Mathematics Department Chairman, Hawley O. Taylor. Interestingly, after being refereed by H. Harold Hartzler, the chapter was dropped from the book's second edition.
- <sup>20</sup>This meant that Stoner submitted a little article, "The Creator of Gravitation" for ASA review. Containing "little requiring expert scientific opinion," the article appeared in *Moody Monthly* with an asterisk by the title referring the reader to the official-sounding endorsement at the bottom of the page: "Approved by the American Scientific Affiliation..." F. Alton Everest, Open letter to prospective members, January 1, 1943, p. 4, (little expert opinion); Peter W. Stoner, "The Creator of Gravitation," *Moody Monthly* (April, 1942), pp. 458 and 486. Stoner's book, *From Science to Souls* had received an ASA endorsement as well.
- <sup>21</sup>For general discussion of ASA's reviewing function see F. Alton Everest, "Reviewing Function of the ASA," Chapter 5 in *The American Scientific Affiliation*, pp. 110-115.
- John R. Howitt served on the ASA executive council from 1955-1959 and was very active in ASA affairs. His booklet was a "compact summary of anti-evolutionary arguments" published by the International Christian Crusade. For a brief discussion of Howitt and his booklet, *Evolution*, see "Obituaries" in the "News Letter" of the American Scientific Affiliation, Vol. 28, No. 1, February/March 1986, p. 3f. On ASA decision to grant "approval" to his booklet, see F. Alton Everest to John R. Howitt, September 5, 1945, ASA Papers.
- The growth of the *Journal's* book review section and the flurry of activity and controversy surrounding the ASA's published response to the National Academy of Sciences booklet on creationism, *Teaching Science in a Climate of Controversy* (1986) are perhaps the remaining legacy of the founders' vision of reviewing. Neither of these is insignificant. Yet, neither do they precisely embody the reviewing plans of the founders.
- <sup>22</sup>For biographical detail on Rimmer see Mignon Brandon Rimmer, *Fire Inside: A Biography of Harry Rimmer* (Berne, Indiana: Berne Witness Company) and Charles Brandon Rimmer, *In the Fullness of Time* (Berne, Indiana: Berne Witness Company, 1948). I am grateful to Edward ("Ted") Davis for directing me to these references. See also Ronald Numbers, "The Creationists," in *God & Nature*, p. 399f for a sketch of Rimmer and the quotation regarding purpose of the Research Science Bureau. For more on the Research Science Bureau see Rimmer's promotional brochure in ASA Papers. Rimmer's notorious offer of "\$1000.00 REWARD" "to any person who could prove that there is even one scientific error in the Bible" was never paid. For Rimmer's "\$1000.00 Reward" see dust jacket of *The Harmony of Science and Scripture*, eleventh edition (Berne, Indiana: Berne Witness Company, 1940). Fascinating accounts of one attempt to collect the reward and the ensuing court trial are given in James E. Bennet, *The Bible Defeats Atheism: The Story of the Famous Harry Rimmer Trial as Told by the Attorney for Defendant* (Grand Rapids: Zondervan Publishing House, 1941) and Harry Rimmer, *That Lawsuit Against the Bible* (Grand Rapids: William B. Eerdmans Publishing Co., 1940). See Frank J. Cassel to William J. Tinkle, May 5, 1948, ASA Papers for "hopeless" comment; see review of Rimmer's *The Theory of Evolution and the Facts of Science* by Edwin Y. Monsma, January, 1948, ASA Papers for comment that it "should not have been published."
- <sup>23</sup>F. Alton Everest to George R. Horner, et al., November 26, 1947, from J. Frank Cassel Papers, Wheaton College Archives and Special Collections. Since the time I reviewed these papers, they have been incorporated into the ASA Collection.
- <sup>24</sup>For speculation on ASA interest in Rimmer's book because of the phrase "facts of science" see F. Alton Everest, *The American Scientific Affiliation*, p. 112. Harry Rimmer, *The Theory of Evolution and the Facts of Science* (Grand Rapids: Wm. B. Eerdmans Publishing Company, 1935), p. 49, emphasis Rimmer's.
- <sup>25</sup>The eight men submitting reviews of Rimmer's book were Paul E. Parker, George R. Horner, William Tinkle, C. B. Hamann, Harley Barnes, Edwin Monsma, Walter Lammerts, and J. Frank Cassel. J. Frank Cassel to William Tinkle, May 5, 1948, (glaring faults); William J. Tinkle, "Review



- of Rimmer's *Theory of Evolution and the Facts of Science*," manuscript, April, 1948, (should not be republished); Marion D. Barnes to F. Alton Everest, February 19, 1949, quoted by Everest in *The American Scientific Affiliation*, p. 113, (anti-Rimmer club), all in ASA Papers.
- 26 Russell Mixer to F. Alton Everest, December 20, 1948, (Rimmer has me on the spot!); Russell Mixer to F. Alton Everest, January 15, 1949, (I was joking), both in ASA Papers. To avoid creating a stir, the decision was made to label the Rimmer critiques "confidential" for circulation among members. The plan seemed to have worked; see Everest, *The American Scientific Affiliation*, p. 113.
- 27 Henry Morris, who would later launch the "revival of creationism" by co-authoring *The Genesis Flood* and helping found the Creation Research Society from a small group of disgruntled ASA members, would also become a fellow of the American Scientific Affiliation; but in the fall 1947 his membership application was still a year and a half from being filled out. Morris signed his ASA membership application March 9, 1949 and was notified of his acceptance early the next month. For more on Henry Morris see, *History of Modern Creationism*, p. 90, (Rimmer influence); this is a valuable, albeit slanted source of autobiographical material on Morris. For discussion of "Henry M. Morris and the Revival of Creationism" see Ronald Numbers, "The Creationists," in *God & Nature*, pp. 407-410.
- 28 Henry M. Morris, "Can a Christian Consistently Believe in Evolution?"; F. Alton Everest to J. Laurence Kulp, December 28, 1947, (explanation of situation and quote), ASA Papers.
- 29 Personal interview with J. Laurence Kulp, November 7, 1990, (biographical information); F. Alton Everest to J. Laurence Kulp, November 27, 1947; I also gratefully acknowledge Ronald Numbers's loan of the recording of his July 23, 1984 interview with Kulp.
- A Veteran of Manhattan Project research, Kulp had become a faculty member at Columbia's Lamont Geological Observatory and an important leader in applying Willard F. Libby's (1908-1980) newly developed methods of carbon-14 dating to problems of geology.
- 30 "Reviews of the Manuscript: 'CAN A CHRISTIAN CONSISTENTLY BELIEVE IN EVOLUTION' by Henry Morris," January 31, 1948, sent as an enclosure in letter from F. Alton Everest to Walden Howard, January 31, 1948, (kind remark), all in ASA Papers.
- 31 For Kulp's comment on no good anti-evolutionary books see his "Comments on 'Can a Christian Consistently Believe in Evolution?'" by Henry M. Morris," p. 3, ASA Papers. For discussion of the "new evangelical coalition" see Joel A. Carpenter, "From Fundamentalism to the New Evangelical Coalition," in *Evangelicalism and Modern America*, ed. George Marsden (Grand Rapids: William B. Eerdmans, 1984), pp. 3-16.
- 32 Certainly this could all be interpreted as part of that lively exchange of ideas required "to integrate and organize the efforts of many individuals desiring to correlate the facts of science and the Holy Scriptures." From "Article I - OBJECTS," original constitution of the American Scientific Affiliation, May 1942.
- 33 For more on Price see works by Morris and Numbers cited in note 2 above. For a sympathetic account by a student of Price see Harold W. Clark, *Crusader for Creation: The Life and Writings of George McCready Price* (Mountain View, Calif.: Pacific Press Publishing Association, 1966). George McCready Price, *Genesis Vindicated* (Takoma Park, Md.: Review and Herald Publishing Company, 1941) was Price's last major work. Van Haitsma to F. Alton Everest in postscript to letter to council, March 23, 1942, (aim of our society); this is an important letter also because Van Haitsma submits twenty questions on Bible-science relations for discussion at conferences with faculties of Bible Schools. Sturgis to Council, April 15, 1942, (worth while material), both letters in ASA Papers.
- 34 F. Alton Everest to Council cc/ Moon and Houghton, October 7, 1942, (report of Ben Allen's letter and meeting at Stoner's home); F. Alton Everest to Stuart J. Bates, October 8, 1942, ("Price's presence was a genuine surprise"), ASA Papers.
- 35 On J. D. Whitney and his efforts with the Religion and Science Society in the mid 1930s see Numbers and Morris references in note 2 above. F. Alton Everest to Council, May 9, 1944 (bomb); Edwin Y. Monsma to F. Alton Everest, May, 1944 (Creed of Creation); Peter Stoner to F. Alton Everest, February 25, 1944 (extremely unscientific, chip on shoulders, students required to refute Price); Peter Stoner to Council, May 15, 1944 (basically unsound,  $2 \times 3 = 7$ ), all in ASA Papers.
- 36 F. Alton Everest to Council, May 9, 1944, (Allen A. MacRae comment quoted); Edwin Y. Monsma to F. Alton Everest, May, 1944, (differences within the group); Marion D. Barnes to F. Alton Everest, June 2, 1944 (agreement with MacRae's position, suggestion to drop correspondence); all in ASA Papers.
- It is worth noting that MacRae's comment continued to resonate well within the ASA. In his 1957 essay, "The ASA, an appraisal of its achievements in light of its purposes," H. Harold Hartzler again quoted verbatim the same passage. In ASA Papers.
- 37 A Symposium on "The Age of the Earth" by Members of the American Scientific Affiliation, ed. J. Laurence Kulp, 1948, pp. 1-1, II-3, and VIII-1 through VIII-6; mimeograph copy in ASA Papers.
- 38 W. E. Lammerts, "Critique of Radioactivity Estimates of Age of the Earth," in A Symposium on "The Age of the Earth" by Members of the American Scientific Affiliation, ed. J. Laurence Kulp, 1948, pp. VI-1 through VI-4, in ASA Papers.
- 39 F. Alton Everest to J. Laurence Kulp, November 27, 1947, (comprehensive destruction); F. Alton Everest to Harley Barnes, November 27, 1947, Everest wrote, "The prospect of Dr. Kulp writing on Flood Geology for the next ASA convention is very heartening to me, personally, for these things should be met squarely," both in ASA Papers.
- 40 J. Laurence Kulp to F. Alton Everest, April 29, 1948, ASA Papers.
- 41 Kulp presented what he regarded to be "considerable scientific evidence" for the thesis that "man-like creatures have been on the earth for at least many tens of thousands of years." He admitted that such a position "requires a reexamination of our interpretations of Genesis," but insisted that such a thesis "is not disastrous to a strong conservative apologetic." See abstract for his paper as printed in the "Program for the Third Annual Convention, The American Scientific Affiliation, Inc.," reproduced as appendix 27 in F. Alton Everest, *The American Scientific Affiliation*.
- 42 "DISCUSSION ON PAPER BY DR. KULP," in Proceedings of the Third Annual Convention of the American Scientific Affiliation at Calvin College, Grand Rapids, Michigan, September 1, 2, and 3, 1948, pp. 70-88, in ASA Papers. For Monsma's comments see pp. 70-71 (uniformitarianism), pp. 80-81 (death before the fall). Regarding the assumption of uniformity in nature Kulp suggested, "if that assumption is now true, that is the only one you need to make to demonstrate in a crude way that the earth is very old, and there have been certain long periods in the past. That doesn't say anything about evolution as such. All it does is demonstrate the antiquity of the earth." And regarding Monsma's concern about death before the fall he proposed that it "is very much of a philosophical question as to what we mean by death before the fall. There is death and there is death. Death in the animal kingdom is quite different from death in a spiritual sense..." see pp. 72-73 (emphasis mine), and p. 81; J. Laurence Kulp to F. Alton Everest, November 14, 1948, (instruct in ways of geology).
- 43 F. Alton Everest to J. Laurence Kulp, November 6, 1948, (strategic place, crop up, Morris letter, 1949 meeting). Morris was especially exercised by the fact that Edwin Gedney, in his chapter, "Geology and the Bible," in *Modern Science and Christian Faith*, had given Price's flood geology short shrift. In fact Gedney had ignored it completely. The only reference to Price came in Everest's "patronizing" footnote which had been included as a political gesture. Everest's "patronizing" political gesture acknowledging Price appears in *Modern Science and Christian Faith*, p. 58, note 28 in the 1948 edition. It appears again unaltered p. 43, note 26 in the 1950 edition. Morris was unable to prevail.
- Actually, Everest and Kulp had corresponded rather extensively during the late forties on the content and purposes of *Modern Science and Christian Faith*. Although Kulp's editorial capacity was not official, he assisted Everest in reviewing several chapters. Kulp collaborated directly with Gedney in revisions of "Geology and the Bible" for the second edition. The exclusion of Price's view was no oversight. "We agree to hit Flood Geology by omission rather than by attack for the purpose of the present volume," Kulp explained to Everest; J. Laurence Kulp to F. Alton Everest, March 21, 1949, ASA Papers.
- J. Laurence Kulp to F. Alton Everest, November 14, 1948, (analysis required), ASA Papers.
- 44 F. Alton Everest to J. Laurence Kulp, November 21, 1948, ASA Papers.
- 45 J. Laurence Kulp to F. Alton Everest, December 29, 1948, (What confusion, monograph proposal); F. Alton Everest to J. Laurence Kulp, February 2, 1949, (hold on tight, let's go), both in ASA Papers. In addition to the "Bulletin of Deluge Geology and Related Sciences" Kulp had read Price's *Q.E.D.: Or New Light on the Doctrine of Creation* (New York: Fleming H. Revell, 1917) and *The New Geology* (Mountain View, California: Pacific Press, 1923). These were among Price's early works; and, although Kulp did not think Price's argument had changed substantively, he was interested in obtaining more recent materials. Kulp had also read Harold W. Clark's book, *The New Diluvialism* (Angwin, Calif.: Science Publications, 1946) in which Clark, Price's former student, departed from his former teacher's views on several points, but still argued from a flood geology perspective.
- 46 F. Alton Everest to J. Laurence Kulp, February 2, 1949, (internal friction); Everest to Kulp, February 24, 1949, (close the subject), both in ASA Papers.
- 47 J. Laurence Kulp, "Deluge Geology," *Journal of the American Scientific Affiliation* 2 (January, 1950): 1-15. Kulp elucidated the errors of flood geology as follows: first, it mistakenly assumes "that geology and evolution are synonymous." Second, it makes the logical error of "assuming in the major premise that which is to be proved." That is, the

- flood geologists assume "that life has been on the earth only a few thousand years" and conclude, therefore, that "the flood must account for geological strata." Third, proponents of deluge geology do not understand the conditions under which rocks are formed and folded. Fourth, Price's writings and conclusions antedate most of the important geological advances of the first half of the twentieth century which render his theory untenable. Quotations from pp. 1, 2, and 15.
- 48F. Alton Everest to J. Laurence Kulp, September 13, 1949; In a letter to Everest the day after the meeting, Price echoed his obliging tone, "I was pleased to recognize the evident intention to have free and open discussions of mooted points of science, together with a frank and positive allegiance to the basic facts of the Christian religion ... I foresee distinct possibilities for great good, if the work of the A S F [sic] can be continued on this high level ... " George McCready Price to F. Alton Everest, August 24, 1949, both in ASA Papers.
- Everest stepped in and read Kulp's other paper, "The Carbon 14 Method of Dating," himself. In the same letter to Kulp he reported that it was "well received" and followed by lively discussion.
- 49F. Alton Everest to J. Laurence Kulp, September 13, 1949, (more than a single hearing); J. Laurence Kulp to F. Alton Everest, September 26, 1949, (banging away), both in ASA Papers. Virtually guaranteeing Kulp's paper wide ASA exposure, it appeared the following January in the *Journal*. And making sure that issues of geology and antiquity remained topics of discussion, Kulp, Cordelia Erdman, Delbert Eggenberger, and Marie Fetzner all contributed papers to the 1950 Convention the following summer on such topics as "Recent Developments in the Carbon 14 Method of Dating Fossils," "The Paleontology of the Horse," "Methods of Dating the Earth and Universe," and "Recent South African Fossil Finds." See the "Official Program Fifth Annual Convention of The American Scientific Affiliation, August 29th through September 1st, 1950 at Goshen College," obtained courtesy of H. Harold Hartzler.
- 50"Comment on the 'Deluge Geology' Paper of J.L. Kulp By an A.S.A. Member", *Journal of the American Scientific Affiliation* 2 (June, 1950): 2. On establishing Morris as the author see F. Alton Everest to Henry M. Morris, March 1, 1950; Russell Mixer to Marion Barnes, April 18, 1950; Allan A. MacRae to Russell Mixer, April 26, 1950, all in ASA Papers.
- 51Quotation from abstract as printed in "Official Program, Sixth Annual Convention of the American Scientific Affiliation, August 28-31, 1951, Shelton College," obtained courtesy of H. Harold Hartzler.
- Regarding the comment that his paper fell on deaf ears — J. Laurence Kulp had absolutely no recollection of the man or the paper during an interview, November 7, 1990. Walter Hearn, then a young member, recalls being very favorably impressed by both Kulp and the ASA when at the Shelton meeting Kulp took aside a person who gave a paper that Hearn and Kulp considered to be "pretty far off the track" and kindly "took him aside" in order to help set him straight. Perhaps this was Saarnivaara. Interview with Walter Hearn, January 12, 1989.
- 52The issue did remain alive and well within the ASA *Journal* as well. No less than twenty-six articles or letters touching on flood geology have appeared in the *Journal* in the years since Kulp's paper.
- 53See J. Laurence Kulp, "The Christian Concept of Uniformity in the Universe," *HIS*, May, 1952, pp. 14-16, 23-24; J. Laurence Kulp, "Does Nuclear Science Preclude Survival," *HIS*, November, 1954, pp. 7-9, 27-28; Henry M. Morris, "Creation and Deluge," *HIS*, January, 1954, pp. 6-11, 18-23; Wilbur L. Bullock, et al, "Readers' Reactions to 'Creation and Deluge' January, 1954, *HIS*," *HIS*, April, 1954, pp. 19-23, 30-31; Henry M. Morris, "Letter to Editor," *HIS*, May, 1954, pp. 30-31. I am grateful to Wilbur L. Bullock for bringing this latter correspondence to my attention, Interview of Wilbur L. Bullock, August 6, 1990.
- 54Carl F. H. Henry to F. Alton Everest, March 1, 1948; F. Alton Everest to Walter E. Lammerts, et al, March 21, 1948. The eight men invited to the planning meeting at Fuller were Stuart J. Bates, Walter E. Lammerts, Peter W. Stoner, Harvey F. Ballenger, Roland N. Icke, Earl C. Rex, Edgar B. Van Osdel, and Hawley O. Taylor.
- 55J. Frank Cassel to F. Alton Everest, May 5, 1948, ASA Papers.
- 56A. F. Shull, *Evolution* (New York: McGraw-Hill Book Co., 1936); on Mixer's intent see Russell L. Mixer to H. Harold Hartzler, December 18, 1963, Hartzler Papers, courtesy H. Harold Hartzler; Russell L. Mixer, *Monograph Two: Creation and Evolution* (Wheaton, Illinois: The American Scientific Affiliation, 1950), quotations from pp. 16, 17, 18, and 30. Mixer was favorably influenced by Floyd E. Hamilton, *The Basis of Evolutionary Faith: A Critique of the Theory of Evolution* (London: James Clarke & Company, Limited, 1931). For example, on page 17 of his monograph, Mixer favorably quotes Hamilton and inserts an exclamation point which does not appear in Hamilton's text. For the response to Mixer and Mixer's rebuttal see "A Criticism of the A.S.A. Monograph on 'Creation and Evolution'," *Journal of the American Scientific Affiliation* 6 (March 1954): 24-28.
- 57J. Frank Cassel to F. Alton Everest, July 30, 1951, (sleeping dogs), Cassel's original draft of his abstract was included with this letter; F. Alton Everest to J. Frank Cassel, July 31, 1951 (not dead); Abstract of "The Study of Evolution" by J. Frank Cassel as printed in "Official Program, Sixth Annual Convention of the American Scientific Affiliation, August 28-31, 1951, Shelton College," Cassel's new wording was, "Therefore, by definition this particular phase of evolution does occur;" Peter W. Stoner to Russell L. Mixer, March 29, 1952, (evolution falls automatically).
- 58J. Laurence Kulp to Russell L. Mixer, January 20, 1950 (will have no part); J. Frank Cassel to F. Alton Everest and James Buswell, III, August 4, 1951, both in the ASA Papers.
- 59H. Harold Hartzler to F. Alton Everest, et al, January 24, 1955; F. Alton Everest to Russell L. Mixer, et al, February 20, 1955, both in ASA Papers. Regarding Everest's assurances of the ASA's anti-evolutionism Everest had written to Arthur P. Kelley, October, 4, 1942 explaining, "Of course we are in the 'anti-evolution' fight in a way ... ", ASA Papers; and Walter Lammerts later insisted, "When I was asked to join in 1943 by Alton F. Everest [sic], he assured me that the stance of the society would be anti-evolutionary"; from Walter E. Lammerts, "The Creationist Movement in the United States: A Personal Account," *The Journal of Christian Reconstruction* 1 (Summer, 1974): 54.
- 60"Official Program, Twelfth Annual Convention of the American Scientific Affiliation, August 27 - 29, 1957, Gordon College & Divinity School," obtained courtesy of H. Harold Hartzler. Interestingly, this is the only ASA convention program to have a bright red cover (perhaps symbolic?); Russell Mixer's paper "An Evaluation of the Fossil Record" was reprinted in the *Journal of the American Scientific Affiliation* 11 (December 1959): 24-26. Remarks summarizing Mixer's comments and affirming the significance of the Gordon meeting as a turning point in ASA history are from an interview with Walter Hearn, January 12, 1989.
- 61J. Frank Cassel, "The Evolution of Evangelical Thinking on Evolution," *Journal of the American Scientific Affiliation* 11 (December, 1959): 26-27.
- 62Russell L. Mixer, ed., *Evolution and Christian Thought Today* (Grand Rapids: William B. Eerdmans Publishing Co., 1959). Hearn and Hendry quotations from pp. 67 and 69. On reception by evangelical magazines see, *Christianity Today*, February 15, 1960, p. 17 and *Eternity*, December 1960, p. 46. Comments about Carl Henry's chapter in relation to the rest of the book are from Walter Hearn, Interview, January 12, 1989.
- 63Webster's New Collegiate Dictionary (Springfield, Mass.: G. & C. Merriam Company, 1979).
- 64F. Alton Everest to J. Laurence Kulp, November 6, 1948, ASA Papers.

As biochemists discover more and more about the awesome complexity of life,  
it is apparent that the chances of it originating by accident are so minute that they can be completely ruled out.  
Life cannot have arisen by chance.

Fred Hoyle, *The Intelligent Universe*, 1983.

# The Future of the ASA: Challenges and Pitfalls

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*The central charter of the ASA is to maintain support for authentic science and for authentic Christian theology, seeking to integrate valid insights from both without sacrifice of either. Faithfulness to this charter requires the recognition that: (1) neither redemption theology nor "gifts of the Spirit" are changed by changes in our scientific knowledge and understanding; (2) we must avoid "scientific theology," which becomes pseudotheology as theology is bent to match current scientific understanding, as well as "theological science," which becomes pseudoscience as science is bent to match current theological understanding; (3) we must avoid false syntheses of science and theology, which effectively remove the authenticity from both science and theology. The ASA should be neither a "scientific scholarly society" nor an "evangelistic branch of the church," while in fact making contributions to both endeavors. The members of the ASA are called to serve as a bridge between the scientific community and the Christian community. It is not that we should be involved in building a bridge between the communities by some kind of forced synthesis, but that we ourselves be such a bridge. Finally we should seek a variety of ways to continue to reach out beyond our own communities and the strictly American Scientific Affiliation in order to establish contacts with others of like mind and purpose around the world.*

Sometimes a look into the future can be clarified by a look into the past, particularly if what we're seeking are guidelines for the future. In our search for the future directions and spirit of the ASA, therefore, let us start by taking a look at some of the guidelines that have been provided to us today by our own past. I would like to call your attention to the words of five individuals or groups of individuals who saw a vision for the ASA.

In 1950, nine years after the ASA had been founded in 1941 with a primary emphasis on providing insights to college and university students, the 2nd edition of *Modern Science and Christian Faith* was published. The preface to that volume was written by F. Alton Everest, then President of the ASA, and a stalwart voice through the years. He notes that the book had been "widely adopted as a textbook and as a reference book for collateral reading by Bible institutes, theological seminaries, and Christian colleges." He goes on to define the purpose of the ASA and its avoidance of common pitfalls.

One of these pitfalls is too-ready acceptance of anything in the name of science and a forcing of scriptural interpretation to fit. The other is a stubborn clinging to some

doubtful biblical exegesis which distorts the whole outlook. The main function of the American Scientific Affiliation is to survey, study, and to present possible solutions.

In this insightful 40-year-old message, Alton sets forth some of the answers to our questions about the future of the ASA. (1) We should set forth possible solutions to problems that arise from an interaction between science and Christianity, without falling victim to departures from authentic science or authentic biblical theology. (2) We should set forth these solutions in such a form that they are accessible to and useful for students in Bible institutes, seminaries, colleges, and universities, without sacrificing their integrity as solutions defensible before and useful to experts in either science or theology.

In 1968, Aldert van der Ziel, himself a contributor to the literature on the interaction between science and Christianity in *The Natural Sciences and the Christian Message* (1960) and *Genesis and Scientific Inquiry* (1965), wrote in the preface to *The Encounter Between Christianity and Science*,

Based on the Banquet Address given at the 50th Anniversary Annual Meeting of the ASA, Wheaton College, Wheaton, Illinois, on July 27, 1991.

The authors show that their science and their faith do not battle against each other, but that they mutually enrich and complement each other. The harmony thus achieved is not attained by rejecting major parts of the Christian doctrine or the scientific endeavor, but by accepting the basic tenets of Christianity and by keeping an open attitude to *all* aspects of science.

He emphasizes again a basic respect for both authentic science and authentic Christian theology so that they are both brought together to complement one another.

Both Alton and Aldert spoke from the perspective of scientists. In 1971, in the preface to *The Human Quest*, Dr. Paul K. Jewett, Professor of Systematic Theology at Fuller Theological Seminary, gave expression to a similar perspective from the theological side.

The human mind seems to have an inveterate tendency to extremes .... Too often the Christian thinker is either threatened into overreaction, and defensiveness by the results of scientific inquiry or else embarrassed into abject compromise of the Christian faith by accommodation to the repressive role of the Church against free inquiry ... the reader will find this book characterized throughout by a practical concern to meet the needs of today's college and university students.

Here we find from a theologian's point of view the attractiveness of a neither/nor approach to some of these problems, a repeated warning against forsaking either authentic science or authentic theology, and a concern for the availability of these discussions to college and university students, and others with similarly questioning minds.

For our last two examples we move forward to 1986 to look at two publications by ASA authors. The first of these is *The Fourth Day*, the book by then President of the ASA, Professor of Physics and Astronomy, Howard Van Till. In the preface to that book, Howard writes,

It is my contention that neither the scriptural nor the scientific view of the cosmos is complete in itself, despite the fact that each view contributes an essential perspective on the complete reality .... This book is addressed to those who want to take both the Bible and the Creation seriously, to those who, like myself, are vitally concerned first to get clear and accurate views of the cosmos through scrip-

tural exegesis and scientific investigation and then to form a unified, coherent perspective that incorporates both views.

Howard stresses the importance of obtaining valid insights into the nature of reality from both science and theology, and then integrating them to form a unified, coherent perspective that is faithful to both kinds of insights.

Finally, consider that outstanding example of the ASA's concern with students and the process of education, the discussion first published in 1986, *Teaching Science in a Climate of Controversy*. In this now widely disseminated treatment, we read,

For some of the deepest human questions about ultimate meaning and purpose, religious faith is part of the investigative process. The methods of science probe *how* and *when*, but cannot reach "beyond nature" to explore *why* things exist or whether a supreme intelligence is behind our own existence. For many students the two sets of questions appear to be thoroughly entangled .... ASA wants teachers to present the subjects of origins and of biological evolution with accuracy and openness. Students are better served by valid, up-to-date scientific information than ideological arguments of strong attackers or defenders of evolution.

These quotations taken from over the past 40 years of the ASA's activity illustrate a continuity of perspective and application. Our challenge is to see that these guidelines of purpose and practice continue to be developed and expanded in balance.

Let's now focus on four major challenges that are critical for the faithful witness of the ASA in the future. We might say that they deal with "how we should think," "how we should act," and "what we should be." Since what we think to a large extent governs what we do and, hence, what we are, we will spend the largest part of our time on the first of these.

(1) At the very heart of the ASA's purpose and work lies the fundamental need to support both authentic science and authentic biblical theology, seeking to integrate valid insights from both without sacrificing the integrity of either. Any failure here, any major departure from the clear



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vision with which the ASA was founded, any undiscerning compromise or syncretism, regardless of how noble the motive, will destroy the effectiveness of the ASA as nothing else will.

(2) We need to carefully define our own mission, so that we do not lose our mainstream identity in the midst of the interaction between science and Christianity in the real world, only to become either an inaccessible club of scholars on esoteric subjects, or a division of the church organization with the single purpose of defensive apologetics. Even as we strive to develop perspectives that are formally defensible among the most outspoken scholarly critics, we must also be faithful in expressing the results of these reflections in a form accessible to the layperson, the student and the pastor.

(3) We need to live up to the unique opportunities that are afforded to us by being active members of both the Christian community and the scientific community, living out in our own lives and testimonies what it means to bring these two types of valid insights into practice, and serving as a kind of living bridge between the two communities.

(4) We need to continue to think globally, beyond the confines of church denomination and nation, to communicate with and be of service to the whole body of Christ around the world.

## Discerning Authentic Science and Authentic Theology

By *authentic science* we mean a particular way of knowing based on the human interpretation in natural categories of publicly observable data obtained by sense interaction with the world. The hermeneutical procedure in science follows fairly well-defined standards. Any activity claiming the title "scientific" that departs from these criteria is not authentic science.

By *authentic (Christian) theology* we mean another particular way of knowing based on the Spirit-guided human interpretation of the Bible and on human experience lived out in personal relationship with God in Jesus Christ. The hermeneutical procedures in theology, however diverse the results have been in historical perspective, still follow fairly well-defined standards. Any activity claiming the title "theological" that departs from these criteria is not authentic theology.

Both science and theology are the results of human interpretation. Both science and theology provide us with descriptions of reality. But we must remember that the descriptions of authentic science do not provide us with theological insights; nor do the descriptions of authentic theology provide us with scientific insights. A mystical convergence of science and theology in the future does not speak of authentic science and authentic theology. If such a convergence of science and theology were to occur, it might well be because we had lost both authentic science and authentic Christian theology. The defense of authentic

science is closely coupled with the defense of authentic theology; if one of these comes under serious attack or reformulation, the other suffers with it.

Insofar as the descriptions of science are compatible with the actual physical world, and insofar as the descriptions of theology are compatible with the actual relationships that describe our life in and with God, both provide true and valid insights that need to be integrated in each individual. These insights may be said to be complementary, providing different kinds of information derived from the two different kinds of disciplines, yet dealing with the same reality.

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Maintaining the creative tension that results from this view of science and theology is not something that human beings readily accept. We much prefer to have simple and well-defined categories. The history of the interaction between science and theology has seen us often driven to maintain such simple and inadequate categories even when conflict and rejection of one or the other is the major consequence, or even when compartmentalizing and trivializing them results. Nevertheless, it is this creative tension that the ASA must be dedicated to preserve and defend.

There are three principal ways in which this creative tension is threatened. (1) There is the attempt to make science the ultimate guide for acceptable theology, sacrificing biblical integrity for the sake of apparent scientific credibility, thus producing a pseudoteology. (2) There is the symmetrical attempt to make theology the ultimate guide for acceptable science, sacrificing scientific integrity for the sake of apparent theological credibility, thus producing a pseudoscience. (3) Perhaps the most seductive of all is the attempt to make a forced synthesis between science and theology in a "new age" situation, destroying the integrity of them both in the process. It is frequently found that pseudoscience and pseudoteology reinforce one another. Let us consider each of these in a little more detail.

Theology passes from being authentic to being pseudoteology whenever the methods of interpretation suitable for this mode of revelation are rejected, whenever theological concepts and constructs are dictated by non-theological concerns, and whenever theology is called upon to provide information or guidelines in areas where it is unable authentically to do so.

So-called "scientific theology" usually supposes that biblical categories of thought are hopelessly unacceptable to the modern scientific mind, that religious beliefs are wholly products of human activity, and that in the final analysis it is knowledge and understanding that save. The task, therefore, is to reconstruct biblical categories and translate them into acceptable scientific categories. What is envisioned is frequently described in terms of such dramatic words as a "new Reformation," a "reformulation" of religious concepts to bring them into line with contemporary scientific descriptions, or a "new paradigm."

All of these expectations call for a reinterpretation of biblical theology so as to make it consistent with contemporary science. This task may result, for example, in seeing Nature as God, the natural system as the Kingdom of God, science as truth, evil as non-viable, and salvation as the human quest for survival. The biblical concept of "sin" disappears from any discussion. Theology constructed in this way, being shaped by current scientific descriptions and not by authentic biblical interpretation, can be nothing else than pseudotheology.

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It is profoundly disturbing when Christians appear to agree with the premise that changes in our thinking due to science are really going to make significant differences in our involvement in and expression of love, joy, peace, patience, kindness, goodness, faith, gentleness, self-control, mercy, compassion, forgiveness, redemption and regeneration. What increased understanding of scientific descriptions *does* provide is a guide to enable us to identify theological caricatures based on a previous misguided identification of theology with a particular contemporary type of scientific description. For example, the insights of quantum physics suggest to us that the faulty view we had of God's action in the universe in terms of classical determinism is no longer acceptable.

In a similar way, science passes from being authentic to being pseudoscience whenever the methods of interpretation suitable for this mode of revelation are rejected, whenever scientific concepts and constructs are dictated by non-scientific concerns, and whenever science is called upon to provide information or guidelines in areas where it is unable to do so. To suppose that a "theological science" can be constructed on the basis of theological interpretations of physical mechanisms in the universe, never intended in the purpose for which the biblical revelation was given, is to become involved in pseudoscience.

Visionary views of a future convergence of science and theology frequently are based on the assumption that science is going to provide us with insights into the meaning of reality. But to insist that science lead to interpretations of meaning, morals, ethics and human values is to advance a pseudoscience. These are things that authentic science cannot do. To attempt to construct a science in the effort to support any previously accepted philosophical, metaphysical or religious view, is once again to enter into pseudoscience. Authentic science, limited by its methodology, must nevertheless be left free to explore to the best of its abilities what the nature of the physical universe is, thus providing us with the possibility of partially true insights into that part of reality accessible to authentic science. Any attempt to *use* "science" in order to give support to a particular previously conceived perspective on the nature of reality is pseudoscience.

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Certainly it is essential that the ASA stand steadfastly as part of its witness and perspective against any attempt to develop a pseudoscience or a pseudotheology. This may not be as easy as it might seem, because sometimes it seems as if such developments actually support the faith and contribute to a lessening of the apparent conflicts between science and theology. Nowhere is this more evident and more challenging than in those cases where pseudoscience and pseudotheology have been joined together in the effort to synthesize a new relationship between science and theology, a great new transformation in the not-too-distant future spoken of in glowing terms: a transformation in which science and theology will join together, their conflicts will end, and the two will become one marvelous and mystic celebration of the human spirit.

Such a movement also claims the authority of science, but actually rests upon a particular philosophical or religious interpretation of science not actually derived from authentic science itself. Seeking to meet the demands of the religious yearning of human nature without a commitment to biblical theology, this approach rejects the limitations of scientific reductionism but replaces them with what might be called "preductionism." If reductionism claims that the properties of the whole are only illusory because they are not explicitly in the parts, "preductionism" claims that the properties of the whole are authentic because they are indeed present implicitly in the parts. If reductionism claims that there is no such thing as "spirit" because that is not a category used in physical and chemical descriptions, "preductionism" claims that the reality of "spirit" is scientifically established by its presence in all of matter.



This might seem like a positive move to some Christians, seeking to defend the reality of concepts such as "soul" and "spirit," but a principal difficulty with this approach is that there is no real evidence in its favor. It claims the insights gained from the "new science," by which it means usually relativity and quantum mechanics, as its scientific basis, but in reality it is little more than an *ad hoc* semi-poetic construction. It speaks in mystic terms about the findings of modern science showing the reality of an intrinsic "spirit" in all reality. But as a matter of fact scientific descriptions have not shown any such thing; by their very nature they are intrinsically incapable of giving information about the existence or non-existence of "spirit." In fact, consideration of the effects on human society that have been brought into prominence by scientific and technological developments strongly suggests that the trend is toward depersonalization of human beings, not toward recognition of a non-material spiritual quality.

Contrary to frequently heard claims, physicists are not telling us that there is an innate "intelligence" present in each atom of matter. There may well be people saying such things, but they are philosophers who are mistakenly seeking some kind of apparent foundation in science for their own preconceived faith commitments. They are attempting a grand synthesis of pseudoscience and pseudotheology. It requires only the subtlest of shifts to become identified with animism, pantheism or the monism of Eastern religion. Indeed, its strongest advocates have adopted these viewpoints and then sought to find support in modern science.

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Much of the enthusiasm for new world views relevant to theology as well as to science, arising from modern quantum mechanics, cites the major change in scientific thinking from determinism in classical physics to indeterminism (chance) in quantum mechanics. But we tend to forget some fairly basic distinctions: (a) scientific descriptions by their very nature must be either deterministic or chance in form, (b) to deduce philosophical or theological meaning from such descriptions, thus arriving at philosophical Determinism or Chance as world views, is not a scientific activity, (c) scientific determinism interpreted as Determinism may pose a problem for maintaining human freedom, but scientific chance interpreted

as Chance also poses a problem for maintaining human responsibility, (d) the indeterminism of quantum mechanics showed the fault with the simplistic view of determinism in classical physics, but does not provide any basis of its own for the speculations described above.

The ASA will be walking a philosophical tightrope between these various pitfalls of pseudoscience, pseudotheology, and their mystic synthesis in the years ahead. At the same time the ASA is committed to maintaining the fundamental truths of the biblical revelation. It will be easy to be misled, to be drawn into visionary expectations without realizing that one is cutting out the ground from under one's feet. We must exercise great love, patience, care and discernment if we are to be true to our fundamental charter of upholding authentic science and authentic biblical theology.

### Scholar or Practical Evangelist?

After 50 years of existence, we need once more to consider what kind of a group we are supposed to be and whom we are supposed to be serving. We face a tension here that draws us, on the one hand toward becoming an increasingly elite society of scholars, men and women highly trained in the formal disciplines of science and theology and the interactions between them, dealing with difficult philosophical and theological conundrums at an advanced level of logical consistency and humorlessly debating theoretical solutions to highly abstract problems.

With an appeal for understanding from Jack Haas, our excellent Editor, permit me to be explicit by using our *Journal* as a specific illustration of the meaning of these choices. In this extreme our *Journal* would become a thoroughly scholarly publication, dedicated only to the difficult issues that challenge the intellects of the elite, where each published paper corresponds to the style and approach typical of a paper published in a professional journal of a specific, specialized discipline, replete with a sufficient number of references and citations to give it professional validation. Our goal, totally commendable in itself, would be to establish such a standard of scholarly and professional excellence that we would contribute directly to the frontier issues in modern theology and philosophy for the benefit of other Christian scholars, and that we could stand tall as far as the quality of the publication was concerned, when compared to any equivalent secular, scholarly publication.

On the other hand, we could just as easily be drawn to another extreme in which specific service to our Christian community and outreach beyond that community for evangelism of potential non-Christian readers would be the dominant purpose of the ASA. Again using the *Journal* as an illustration, this would mean that the *Journal* would focus primarily on articles that were apologetic or inspiring in nature, treatments of issues that are stumbling blocks to the average Christian, written in a language and a style that makes them immediately accessible and useful to laypeople, students and pastors.

It is evident that major concentration on either of these extremes would virtually exclude the other. Our dilemma is that we do not wish to exclude either extreme, while at the same time we desire to be involved in some kind of middle-level activity. We want to be neither this only nor that only, but to offer an appropriate selection along the continuum between the two extremes.

We would like to make some contributions in the areas of scholarly issues, practical interaction between science and theology, reflection on God's power revealed in nature, apologetics to remove the stumbling blocks of caricatures about science and theology that blind so many to the truths of Christ, evangelism to reach out with the assurance that committed scientists can also be committed Christians, and service to provide our own contributions to the ongoing efforts to help others in the world both intellectually and in more practical ways.

Ideally, our *Journal* would have a range of types of papers matching all of these categories, in a format designed to attract and appeal to a wide range of readers. We would seek to involve authors from a variety of different backgrounds and scholarly qualifications, stimulate interactions in print between different types of authors and issues, and develop a somewhat less formal format that might include photographs, cartoons and humor. We would strive to achieve these variations from a purely scholarly publication without really diminishing the overall quality of the publication. This pattern of activity, illustrated here in terms of the *Journal*, would also characterize other types of ASA activity.

## A Living Bridge

The September 1973 issue of the *Journal of the ASA* featured a cover showing an island with active scientists separated from an island with active Christians, the two islands being joined by a bridge from which hung a poster saying, "ASA." After another 18 years, it is still relevant.

To be a "bridge over troubled water" has been claimed for many different types of ventures and activities since the phrase was immortalized in song by Simon and Garfunkel. And yet it seems that we in the ASA must recognize the special and unique way in which the ASA is called by God to be such a bridge between the scientific community and the Christian community: two all-too-often isolated islands in the midst of a troubled sea of controversy. The 1961 book by Anglican priest/physicist William Pollard, *Physicist and Christian*, expresses clearly in several ways the formal similarities between the scientific community and the Christian community: how one must be a member of the community to truly understand the community, and how major positions are arrived at in practice by community consensus.

The ASA is an organization of Christian men and women of science. It is not an organization of Christians who are interested in science. Nor is it an organization of scientists who happen to be Christians. Its existence assumes the significance of a whole world perspective to

which men and women, who are Christians and scientists, can make a meaningful contribution. If the ASA were to function only as a particular arm of the church, it would fail its opportunities in the scientific community. If the ASA were to function only as a sounding board for scientific theories and ideas it would fail its opportunities in the Christian community. To fulfill the unique potentialities possible in its existence, therefore, the ASA must be intimately related to both the Christian and scientific communities.

The possibilities of this relationship exist in its members. Here are men and women who have made a personal commitment of themselves and their lives to Jesus Christ as Lord and Savior. We know the Christian community from within the family warmth and fellowship. We know the grace of God's forgiving love in Jesus Christ. We understand the call to be salt and light for Him in the world. Here also are men and women who have made a personal commitment of themselves and their lives to a scientific understanding of the world. We know by experience not only what science is, but what it means to *do* science. We are accepted by our scientific colleagues, respected for our teaching and research, and worship the God of creation through our obedience to Him who calls us to be responsible for this created world in which He has placed us.

If such a bridge is not to be peopled by Christian men and women of science, by whom is it to be peopled? Scientists who have no real understanding of the nature of the Christian community can get no further across the bridge from their side than Christian theologians with no real understanding of the nature of the scientific community can get from their side.

By its very nature the ASA has provided some kind of bridge for 50 years. Sometimes it was perhaps more like a swinging bamboo bridge, fragile and mobile. And sometimes perhaps it was more like the bridge over the River Kwai, the purpose and circumstances of the construction of which were almost forgotten. But a bridge it has been and a bridge it remains, today with new foundations and a vision of a new stability. As we look to the future, we see men and women forming a bridge with their own lives and bodies, a bridge named "ASA" that links the disciplines of authentic science and authentic theology. Those of us in physics may be excused if we see these ASA members as the "particles" being shared in the process of bonding between the two communities. It is not that we desire to end the existence of the community of authentic science and the community of authentic Christian theology by pressing them into an artificial synthesis, but that we pledge ourselves to be the shuttling messengers from one community to the other so that each may know and understand the other better.

## The International Scientific Affiliation

In the third issue of the *Journal* published in June 1949, then called the *ASA Bulletin*, there is a letter to the editor that discusses the name of the Affiliation. The author of that letter wrote,

"The American" is not necessary. We could well receive as members of our organization qualified persons from Canada or Cuba or Mexico or South America or even Europe.

Twenty years later another letter to the editor appeared that also discusses the name of the Affiliation. This author wrote,

I believe that the ideas, discussions and philosophy of the ASA could more readily be promulgated in other parts of this world if our organization and its publication were not "burdened" with the word "American" in the name.... Why not broaden our horizons and set out to establish a world-wide "ASA"?

Those words may be considered prophetic of what has happened to the ASA, and as guidelines for future concern and activity. Starting with a handful of American members in 1941, the ASA now has a membership of about 2800 in the United States, 178 in the Canadian Scientific Affiliation, and 117 in 44 different countries around the world from Argentina to Zimbabwe. We should continue to consider different ways in which we can increase our ties to other people around the world with common concerns in relating science and theology.

The two conferences held at Oxford in 1965 and 1985 in conjunction with the Research Scientists Christian Fel-

lowship of Great Britain (now Christians in Science) were two landmark occasions for outreach of the ASA beyond the borders of North America. The preparation and dissemination of *Teaching Science in a Climate of Controversy* has been an excellent outreach step, bringing insight and encouragement to many beyond the traditional confines of the ASA membership. Certainly also the anticipated presentation of the TV series describing a scientific view of the creation consistent with authentic science and authentic theology will also be another effective outreach step. Plans for cooperation in an African research institute are exciting.

Perhaps it is not necessary to remove the "American" in the title of the ASA to bring about such outreach and increased relationship between different peoples from different cultures in the world, provided that we remember that we are also part of the international communities of science and theology. But we should constantly be on the lookout for opportunities for genuine sharing between our American members and people in other countries with similar concerns and interests. We should be particularly aware of and open to establishing communication links with others of similar concerns in developing countries.

God has blessed the American Scientific Affiliation in many ways during its first 50 years. We pray that that blessing will continue. And we pray that we may be found worthy of that blessing. ✱

### ***An Ethos of Compassion and the Integrity of Creation***

Announcing an international conference on the strengths and weaknesses of the western notion of order, particularly as solidified in the Reformed notion of an abiding "creation order." The postmodern critique of order will be one of the foci for reflection. The conference will be held **June 3 - 6, 1992** at the Institute for Christian Studies, Toronto. Featured speakers include Dr. Langdon B. Gilkey, Professor Emeritus, University of Chicago, dealing with "Pluralism, Creation and an Ethos of Compassion" and Dr. Stanley Hauerwas, professor of Theological Ethics, Duke University, dealing with "Order, Compassion and the Stories We Live."

Other speakers will deal with such topics as the philosophical and historical tradition of "Creation Order"; Biblical Hermeneutics and the Ethos of Compassion; Creation Order and cultural crises; gender; the "New World Order"; medicine; aesthetics; education; same sex relations; evolution; and environmental disorder. **For more information, please contact Cynthia Frazee, Institute for Christian Studies, 229 College Street, Toronto, ON M5T 1R4, or telephone (416) 979-2331.**

# Book Reviews

**CONCEPTS OF NATURE AND GOD: Resources for College and University Teaching** by Frederick Ferre, ed. Athens, GA: Department of Philosophy, University of Georgia, 1989. 258 pages. Paperback.

This is a book dedicated to the history and bases for natural theology, i.e., what can be known about God from an investigation of the natural universe. It is the result of The Summer Institute on Concepts of Nature and God, lasting for six weeks in the summer of 1987 at the University of Georgia, directed by Frederick Ferre, Research Professor of Philosophy at the University of Georgia, and supported by the National Endowment for the Humanities. "The hypothesis of the institute was that there is an important two-way influence between general theories of nature and an epoch's conception of the deity" (p. vii).

The book is written by the twenty-six participants in this Institute, most of whom came from departments of philosophy of religion, one exception being a professor of chemistry at the University of Wisconsin. "Most came from four-year, liberal arts colleges; some came from universities with graduate programs." A short biography of each of the authors is given at the end of the book.

All of the authors are men, even of the section on "Feminist Perspectives on Science and Religion." A striking example of the insularity of such ventures is attested to by the fact that not a single one of the 26 participants is a member of the American Scientific Affiliation.

The book is presented in three main sections: (1) "Workshop on Ancient & Medieval Thought," with five contributions; (2) "Workshop on Modern Thought," with twelve contributions; and (3) "Workshop on Contemporary Thought," with seven contributions.

The major part of the book is presented in the form of annotated bibliographies, rather than in general discussions. An occasional author does give such a discussion covering a few pages, e.g., the section on "Concepts of Nature and God in the Middle Ages" by Karl Schmitz-Moormann; addenda on "Superstring Theory" by David E. Schrader, and "The Anthropic Principle," by Stanley T. Sutphin; or a somewhat extended overview of "Futurism" by Allen R. Utke.

The bibliography developed by this institute and published here could be a useful resource for those involved in the teaching of interactions between science and theology. The authors are professional philosophers and religious studies specialists, and the authors they cite tend to fall into the same kinds of categories once they pass beyond historical references to more modern ones. This orientation, as well as the avowed purpose of the book, essentially exclude any discussions of interactions between

such natural theology views and others that might be derived from biblical exegesis.

*Reviewed by Richard H. Bube, Professor of Materials Science and Electrical Engineering, Stanford University, Stanford, CA 94305.*

**EVOLUTION: The Great Debate** by Vernon Blackmore and Andrew Page. Batavia, IL: Lion Publishing Corporation, 1989. 192 pages. Paperback; \$19.98.

This looks like a coffee-table book: thick, glossy paper; many brilliant color photographs, some chosen more for their appearance than for their relevance to the text; numerous supplemental essays boxed apart from the main text in a second color. To my surprise, the book turned out to be the fairest treatment of the evolution question that I have found.

The book deals with evolution historically, inserting scientific discussion where required to understand the historical debate. We meet all the major contributors to the debate, from Linnaeus to Richard Dawkins, and the authors are careful to present the cultural and philosophical climate within which each scientist worked. Fairness and understanding sympathy characterize the entire discussion.

The authors shun the "warfare" metaphor in discussing the dialog between religion and science on the evolution question. They emphasize that many scientists involved in the debate were deeply religious, and that many churchmen were early champions of evolution as God's means for creating the diversity of life. And when they come to scientists who speak out of a non-Christian or even anti-Christian framework, the authors make this clear as well.

Blackmore and Page maintained a balanced, neutral stance so well that I kept wondering throughout where they stood. Only in the last few pages do they reveal their personal statement of faith. They affirm that Christian faith is grounded primarily on God's addressing us historically and personally, and not on questions of scientific truth. Most Christians believe that God is Creator, whatever the means or time scale, because they know God through Jesus Christ, whom God raised from the dead. Thus, the evolution controversy can never be central to the truth of Christianity.

I am occasionally asked to recommend a book for the scientific layman that introduces the evolution question. Blackmore and Page will be my recommendation in the future.

*Reviewed by J.R. Cogdell, Department of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX 78712.*

# Letters

## On Dembski's Views of Cognitive Science

William A. Dembski's article, "Converting Matter to Mind," which appeared in the December 1990 issue, was stimulating and thoughtful. The major thrust of the article is that cognitive science with its materialist assumption that humanity can be entirely understood in computational terms, is at odds with historic Judeo-Christian theology. I affirm this thesis, but I have a few problems with the detailed elaboration of it in the paper.

At a macroscopic level, I want to take issue with two aspects of Dembski's characterization of the research activities of cognitive science. The first aspect is his argument against "deciding the issue [the relation between computation and intelligence] in advance," which is fine if his intent is to force us to continue to think that there are other options. Surely, though, it is a valid scientific stance to presume that intelligence is simply computation, and to proceed to demonstrate that. I take it that this is the program of cognitive science, and cannot object to it as a scientific program, even though I would not want to adopt it. Dembski accuses cognitive scientists of grandiose ambitions when they take this predetermined stance, but he, too, has his own predetermined position, of course, which he states in his summary:

I am, however, committed to viewing computers and the programs they run as tools for my intellect, much as hammers are tools for my hands, and not as my peers.

The question at issue, surely, is which of these positions is "better."

The second aspect of his characterization of the entire field that troubles me is the suggestion in the abstract and again in the concluding remarks that the program of cognitive science is described as it is "to justify sizable research grants." If this is true (and significant enough in the author's mind to be included in his abstract), it would have been better to present some convincing evidence. I do not see any documentation presented that justifies this imputation of motive, I do not believe that cognitive science is more open to this criticism than is any other field, and I do not believe that it is necessary to hold this to see why cognitive science is attractive to researchers. To me it is an unfortunate *inclusio* that detracts from the paper.

One major thrust of the paper is an attempt to make us comfortable with the belief that humanity is different from machines. The Law of Priority in Creation is said to be found in the text

Jesus has been found worth of greater honor than Moses, just as the builder of a house has greater honor than the house itself. [Hebrews 3:3]

This is said to teach us that "The Creator is always *strictly greater* than the creature." I find this problematic. It seems to me to be an abuse (at least a mild one) of Scripture to call this a *law*. Neither the comparison of Jesus with Moses nor the comparison of a builder with a house seems necessarily to support the generalization Dembski draws from it. Further, since I can certainly make tools that do what I cannot do, why not an intelligence tool? Dembski sees this as virtually impossible, but is it necessarily impossible? If there is to be "encouragement" for those wanting to hold to "the historic position" I think it should not be sought in a broad and loose reading of this text.

In fact, I think the right kind of encouragement for those of us wanting to affirm that humanity is more than computation (intelligence = computation) is to be found in the scriptural emphasis, evident from the creation narratives onward, that the importance of humanity for God is his *relationship* to it, not its physical manifestation (although this is not insignificant). Cognitive science seems to attack the last bastion of human uniqueness — intelligence. We are not worried when machines move us faster than our legs can, or lift more than our arms can, because we do not see our uniqueness as humans in our physical capacities. It may be frightening to see machines that can think as we do for materialists who see humanity defined by its capacity to reason. This may also be frightening for Christians. However, we should perhaps learn something from the unfortunate history of the church's definition of a God-of-the-gaps, and the entailed series of retreats as the gaps were filled. Let us not have a man-of-the-gaps and another series of retreats. If it were possible to build a model in silicon or gallium arsenide or whatever, of the information processing in our brains, would that necessarily attack our definition of humanity before God? Would it not be possible that a sovereign God might reach out to such a "carrier" of intelligence as he now does — in ways that we do not understand — as the human embryo develops into a human being? Is there anything in the Scriptures that would force us to say now 1) that this artificial intelligence will not be achieved, and 2) that the God of the Bible would not be free to reach out, to endow it with soulhood, perhaps even to redeem it from the penalties of the sin it would doubtless indulge in because of its fallen "parentage"?

Perhaps another way to find the encouragement Dembski wants to give us is to affirm what the Bible affirms and be agnostic with respect to issues and questions the Bible does not attempt to address.

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## Crass Stereotyping

As the author of the book review to which Daniel Diaz has responded (September 1991 *Perspectives*, pp. 211-212), I feel compelled to respond. His crass stereotyping of pro-life people is greatly oversimplified and unfair.

His citation of C. Everett Koop's inability to produce a report on medical evidence against abortion has troubled many pro-life people to be sure. More specifically, Koop's difficulty was not documenting that medical damage was related to abortion — it clearly is, as Reardon's book clearly documents — rather, the problem was that the increased problems could not be directly attributed to abortion. A clear cause-and-effect relationship could not be established because most of the research is correlational. As researchers realize, experimental evidence would be needed to determine strict cause and effect, in which a random sample of women would be selected to abort, another group selected to keep their babies, perhaps a third group to adopt out their babies, and finally a control group to not have babies. While such a study would give definitive evidence, the obvious ethical and practical problems involved in doing such a study make it unlikely that it could ever be conducted.

Are we left with *no* evidence of psychological problems? Hardly — the correlational studies certainly point in the direction of psychological and physical side-effects. Indeed Koop, along with many others, has observed psychological and medical problems as a result of abortion. In a March 1987 review of the literature in *Perspectives*, the studies favoring abortion were found to be seriously flawed, and the only one not flawed indicated higher hospitalizations for aborted mothers. There is little or no evidence that abortion does not produce problems, thus the correlational research is all we have — research, when done properly, that indicates problems are likely. I would like to briefly address some of the other comments by Diaz, which also reflect oversimplification in this area. I doubt if he read Reardon's book, as most of his reactions were addressed there. He states that "banning abortions will lead to greater suffering and death." In fact more women die today from back-alley abortions than before Roe v. Wade because most illegal abortions were performed by medical people prior to that decision. I am amazed at Diaz's lack of concern about the potential emotional and physical pain he admits can accompany abortion.

He states that the "the law will never stop women from getting abortions." This is a variation of the old cliché, "You can't legislate morality." Usually prohibition is cited as an example. Actually alcoholism rates dropped dramatically during prohibition, suggesting that perhaps some of the ill effects of immorality *can* be curbed by law. Abortion dramatically increased within the next year after the Roe vs. Wade decision. Apparently you can leg-

islate immorality. Could the social consensus be changed through law? Perhaps so. The laws against abortion seemed to work prior to Roe vs. Wade.

Diaz suggests that pro-life groups should persuade individual women to stop having abortions. He seems to think this is a new idea. For a long time pro-life Christians have been doing this, including Jerry Falwell (his homes for unwed mothers), Francis Schaeffer, and a host of others. In fact, most pro-life groups have such services available. The problem is that the pro-abortion groups, such as Planned Parenthood, regularly advocate abortion. The lack of a law against abortion tends to lend credence to their arguments, especially to people who are uncertain of what to do. Many women are "on the fence" prior to abortion; the Supreme Court decision may seem to imply society's approval.

Diaz states, "The church had to be dragged kicking and screaming into repudiating slavery, into civil rights for women, minorities and the handicapped, and into caring for the environment." This is a slap in the face that seriously distorts the historical record. The leaders in the antislavery movement were not secularists but people like John Newton, William Wilberforce, and John Wesley — all devout Christians who stood against the majority who favored slavery. Civil rights for women were pioneered by the Salvation Army (which ordained women over 100 years ago) and a host of other Christians such as Lord Shaftesbury. The women's movement was originally a Christian movement; only in this century did it (and the civil rights movement) become secularized. Christians such as Francis Schaeffer (another pro-life person) have labored long and hard for environmental responsibility. I personally have written several articles on the rights of the mentally handicapped.

Diaz's final paragraphs favoring pacifism focus on a review done by another reviewer, not me, so it is quite unfair to call this "schizophrenic" — it wasn't the same writer! He seems unaware that there are many Christians who are consistently pro-life in this area as well as abortion (e.g. Ron Sider.) Is not nuclear militarism a red herring to detract from the very real life and death aspects involved in killing the unborn?

I was saddened to see Diaz's complete rejection of Reardon's book. I am still left wondering if he ever read it. If he did, I wonder why he didn't more directly react to the book, rather than to my review of it.

Donald Ratcliff  
Tocca Falls, GA 30598



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## WHAT EXACTLY IS THE AMERICAN SCIENTIFIC AFFILIATION?

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The American Scientific Affiliation (ASA) is a fellowship of men and women of science who share a common fidelity to the Word of God and to the Christian Faith. It has grown from a handful in 1941 to a membership of over 2,500 in 1990. The stated purposes of the ASA are "to investigate any area relating Christian faith and science" and "to make known the results of such investigations for comment and criticism by the Christian community and by the scientific community."

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## HOW DO I JOIN THE ASA?

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Anyone interested in the objectives of the Affiliation may have a part in the ASA. Full, voting membership is open to all persons with at least a bachelor's degree in science who can give assent to our statement of faith. Science is interpreted broadly to include mathematics, engineering, medicine, psychology, sociology, economics, history, etc., as well as physics, astronomy, geology, etc. Full member dues are \$45/year.

Associate membership is available to anyone who can give assent to our statement of faith. Associates receive all member benefits and publications and take part in all the affairs of the ASA except voting and holding office. Associate member dues are \$40/year.

Full-time students may join as Student Members (science majors) or Student Associates (non-science majors) for discounted dues of \$20/year. Retired individuals, parachurch staff, and spouses may also qualify for a reduced rate. Full-time missionaries are entitled to a complimentary Associate membership.

An individual wishing to participate in the ASA without joining as a member or giving assent to our statement of faith, may become a Friend of the ASA. Payment of a yearly fee of \$45 entitles "Friends" to receive all ASA publications and to be informed about ASA activities.

Subscriptions to *Perspectives on Science & Christian Faith* only are available at \$25/year (individuals), \$35/year (institutions) and \$20/year (students).

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## WHAT DOES THE ASA BELIEVE?

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As an organization, the ASA does not take a position when there is honest disagreement between Christians on an issue. We are committed to providing an open forum where controversies can be discussed without fear of unjust condemnation. Legitimate differences of opinion among Christians who have studied both the Bible and science are freely expressed within the Affiliation in a context of Christian love and concern for truth.

Our platform of faith has four important planks, listed on the back of this membership application.

These four statements of faith spell out the distinctive character of the ASA, and we uphold them in every activity and publication of the Affiliation.

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## WHY MUST THERE BE AN ASA?

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Science has brought about enormous changes in our world. Christians have often reacted as though science threatened the very foundations of Christian faith. ASA's unique membership is committed to a proper integration of scientific and Christian views of the world.

ASA members have confidence that such integration is not only possible but necessary to an adequate understanding of God and His creation. Our total allegiance is to our Creator. We acknowledge our debt to Him for the whole natural order and for the development of science as a way of knowing that order in detail. We also acknowledge our debt to Him for the Scriptures, which give us "the wisdom that leads to salvation through faith in Jesus Christ."

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I hereby subscribe to the Doctrinal Statement as required by the Constitution:

1. We accept the divine inspiration, trustworthiness and authority of the Bible in matters of faith and conduct.
2. We confess the Triune God affirmed in the Nicene and Apostle's creeds which we accept as brief, faithful statements of Christian doctrine based upon Scripture.
3. We believe that in creating and preserving the universe God has endowed it with contingent order and intelligibility, the basis of scientific investigation.
4. We recognize our responsibility, as stewards of God's creation, to use science and technology for the good of humanity and the whole world.

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**Please mail to: American Scientific Affiliation, P.O. Box 668, Ipswich, MA 01938**

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"Teaching Science in a Climate of Controversy" is a 48-page booklet that guides science teachers in presenting origins with accuracy and openness. It is available from the Ipswich office for: \$6.00/single copy; \$5.00/2-9 copies (sent to same address); \$4.00/10 or more copies (sent to same address).

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We believe that honest and open study of God's dual revelation, in nature and in the Bible, must eventually lead to understanding of its inherent harmony.

The ASA is also committed to the equally important task of providing advice and direction to the Church and society in how best to use the results of science and technology while preserving the integrity of God's creation.

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- ASA's bimonthly Newsletter.
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- ASA's Membership Directory.
- Opportunities for personal growth and fellowship, through meetings, conferences, field trips, and commissions.
- *Search: Scientists Who Serve God*, an occasional publication relating current trends in science and the people involved in them.

\* \* \* \* \*

THE CANADIAN SCIENTIFIC & CHRISTIAN AFFILIATION was incorporated in 1973 as a direct affiliate of the ASA, with a distinctly Canadian orientation. For more information contact:

Canadian Scientific Affiliation  
P.O. Box 386  
Fergus, Ontario N1M 3E2 CANADA



### The American Scientific Affiliation

Founded in 1941 out of a concern for the relationship between science and Christian faith, the American Scientific Affiliation is an association of men and women who have made a personal commitment of themselves and their lives to Jesus Christ as Lord and Savior, and who have made a personal commitment of themselves and their lives to a scientific description of the world. The purpose of the Affiliation is to explore any and every area relating Christian faith and science. *Perspectives* is one of the means by which the results of such exploration are made known for the benefit and criticism of the Christian community and of the scientific community.

#### EXECUTIVE DIRECTOR, ASA:

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#### EDITOR, ASA/CSCA NEWSLETTER:

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### Canadian Scientific & Christian Affiliation

A closely affiliated organization, the Canadian Scientific and Christian Affiliation, was formed in 1973 with a distinctively Canadian orientation. The CSCA and the ASA share publications (*Perspectives on Science & Christian Faith* and the *ASA/CSCA Newsletter*). The CSCA subscribes to the same statement of faith as the ASA, and has the same general structure; however, it has its own governing body with a separate annual meeting in Canada.

#### EXECUTIVE DIRECTOR, CSCA:

W. Douglas Morrison, P.O. Box 386, Fergus, Ontario N1M 3E2

#### EXECUTIVE SECRETARY, CSCA:

Norman MacLeod, 41 Gwendolyn Ave., Willowdale, Ontario M2N 1A1

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of the ASA and the CSCA have been organized to hold meetings and provide an interchange of ideas at the regional level. Membership application forms, publications, and other information may be obtained by writing to: American Scientific Affiliation, P.O. Box 668, Ipswich, MA 01938, USA or Canadian Scientific & Christian Affiliation, P.O. Box 386, Fergus, ONT N1M 3E2, CANADA.

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Vol. 20-22	(1968-1970),	Journal ASA	22,	157-160	(1970);
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Vol. 26-28	(1974-1976),	Journal ASA	28,	189-192	(1976);
Vol. 29-32	(1977-1980),	Journal ASA	32,	250-255	(1980);
Vol. 33-35	(1981-1983),	Journal ASA	35,	252-255	(1983);
Vol. 36-38	(1984-1986),	Journal ASA	38,	284-288	(1986);
Vol. 39-41	(1987-1989),	Perspectives	42,	65-72	(1990).

A keyword-based on-line **subject index** is available on 5 1/4" computer disks for most IBM compatible computers with a hard disk or two floppy disk drives. It includes all software and instructions, and can be ordered from the ASA Ipswich office for \$20.

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