

ABSTRACT

Reclaiming Peace: Evangelical Scientists and Evolution After World War II

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This dissertation argues that during the same period in which antievolutionism became a movement within American evangelicalism, two key groups of evangelical scientists attempted to initiate a countervailing trend. The American Scientific Affiliation was founded in 1941 at the encouragement of William Houghton, president of Moody Bible Institute. The Research Scientists' Christian Fellowship was started in London in 1944 as one of the graduate fellowship groups of Inter-Varsity Fellowship. Both organizations were established out of concern for the apparent threat stemming from contemporary science and with a desire to demonstrate the compatibility of Christian faith and science. Yet the assumptions of the respective founders and the context within which the organizations developed were notably different. At the start, the Americans assumed that reconciliation between the Bible and evolution required the latter to be proven untrue. The British never doubted the validity of evolutionary theory and were convinced from the beginning that conflict stemmed not from the teachings of science or the Bible, but from the perspectives and biases with which one approached the issues. Nevertheless, by the mid 1980s these groups became more similar than they were

different. As the ASA gradually accepted evolution and developed convictions similar to those of their British counterpart, the RSCF began to experience antievolutionary resistance with greater force. To set the stage for these developments, this study begins with a short introduction to the issues and brief examination of current historiographical trends. A background chapter follows that explores the issues that conditioned the intellectual and cultural settings of the 1940s. The work then proceeds to analyze the developments of the ASA and RSCF in four chapters. Chapters three and four explore the groups from the time of their founding in the 1940s to 1965. Chapters five and six explore events from 1965 to 1985.

Reclaiming Peace: Evangelical Scientists and Evolution After World War II

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PREFACE

The bulk of the sources for this study have come from the archives of the American Scientific Affiliation (ASA) and the Research Scientists Christian Fellowship (RSCF), from papers and private documents made available to the author by members of each organization, from interviews and correspondence, and various publications from each group. The archives for the ASA are part of the Wheaton College Archives and Special Collections (SC-26) located in the Billy Graham Center on the Wheaton College Campus, Wheaton, IL. The collection is extensive, but unfortunately incomplete due to a fire that occurred at ASA headquarters in 1979 that destroyed most of the group's records at the time. Randall D. Isaac, current Executive Director of the ASA, also provided valuable resources held at ASA headquarters in Ipswich, Massachusetts. Personal and private papers were provided by V. Elving Anderson and David O. Moberg. The most important ASA publication is the *Journal of the American Scientific Affiliation (JASA)*, which began in 1949 and continues today under the name *Perspectives in Science and Christian Faith (PSCF)*. Other key books and articles will also be referenced throughout this work.

The archives of the RSCF are kept in the home of Bennet McInnes in Blairgowrie, Scotland. The bulk of these materials consists of papers written for the annual conferences held each summer in London. Most of these were written by and attributed to the various RSCF groups throughout the UK rather than individuals. As a result, authorship was often listed according to the appropriate group (e.g., the Cambridge

RSCF Group) without designation of the contributors. As a result, references and citations often list the responsible group rather than specific authors. This may be frustrating for the reader, but it is unavoidable. Other important RSCF materials were graciously provided by Oliver R. Barclay, R. J. (Sam) Berry, and R. C. J. Carling.

There may come a day when one can write about evangelicals without defining them, but it is not likely to come soon. I have accepted the much referenced “Bebbington Quadrilateral.” Conversionism, activism, biblicism, and crucicentrism convey the essence of the historic manifestation of evangelicalism since the eighteenth century and accurately describe both the ASA and RSCF. Their apologetic efforts revealed their emphasis on conversion and the cross as well as their commitment to participating in the work of the church. Their opposition to theological liberalism and their protracted debates about biblical interpretation evinced their commitment to and reverence for Scripture. If their self-designation as evangelicals were questioned, their activities, commitments, and concerns put them squarely in the evangelical camp.

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The few words offered here cannot convey the debt I feel to the many people and institutions who enabled and encouraged this project. I must first mention those who shaped my work throughout the research and writing process. Dr. Bill Pitts has shown generosity, patience, and encouragement from the time I first arrived at Baylor until the final stages of this dissertation. His guidance throughout my academic journey has been foundational to whatever progress I have made, while the personal example he and Dr. Ruth Pitts have offered will not be forgotten. They are a model of the balance of professional and personal commitment to students and the community that I hope to emulate throughout my career. Dr. Barry Hankins has been a consistent encourager and sound advisor from the time we first met in 2007. His willingness to read incomplete drafts, discuss nascent and often incoherent ideas, and offer perceptive direction and counsel have been indispensable. Further, the friendship he and his wife, Becky, have offered have been a blessing to me and Zoé. Professor David Bebbington has been a demanding and patient critic, encouraging and challenging mentor, and inspiring and insightful guide. The friendships he cultivates with his students and his genuine concern for the development of younger researchers inspires achievement and shuns mediocrity. Both I and my work have been enriched by his involvement. I am also thankful for the friendship and research of Eileen Bebbington. Of course, all errors in detail or interpretation are mine alone.

Generous grants from the Baylor University Graduate School and the Glenn O. and Martel B. Hilburn Fund made research in the UK possible. I am further indebted to

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My research of the RSCF would not have been possible without the assistance of key leaders. Oliver Barclay and R. C. J. Carling exchanged correspondence and mailed irreplaceable documents to an unknown graduate student in Texas. R. J. (Sam) and Caroline Berry, Malcolm Jeeves, and Bennet McInnes, welcomed me into their homes, provided meals, granted interviews, exchanged emails, and shared valuable resources. I have fond memories of a weekend in St Andrews and a garden lunch in Sevenoaks. Bennet, Elizabeth, and Lorna McInnes were especially gracious, hosting me for the better part of a week and making sure that I never missed a meal as I explored the RSCF archives Bennet has carefully preserved (and Elizabeth has endured) for many years.

I am equally appreciative of the many ASA members who helped with this project, some of whom I had the opportunity to meet at the ASA Annual Meetings in 2009 (at Baylor University) and 2010 (at Catholic University of America in Washington, DC). Ted Davis, Terry Gray, Arie Leegwater, and Joseph Spradley are just a few of those who made time for impromptu interviews and questions. I am especially thankful for the time given by Elving Anderson, Jack Haas, and Randy Isaac. Additionally, Walt Hearn and David Moberg have offered invaluable information through email correspondence. I am indebted to Randy Isaac for providing unrestricted access to the ASA archives. David Malone and his staff at Wheaton College offered tremendous help sifting through these vast resources. I am especially appreciative of Keith Call, whose

help, encouragement, and friendship went above and beyond what was expected. I hope to be able to join the library lunch crew again soon.

There are numerous others who deserve mention. Baylor's inter-library loan staff exceeded expectations in helping secure documents and resources. It would be humbling to know how many projects Janet Jasek and her OsoFast team have made possible.

Nancy Grayson, Mathew Polk, and Heather Franks are a few of those at Rapoport Academy whose encouragement and flexibility made this project easier than it could have been. Danny and Gretchen Jarosek helped welcome me and my family to Waco. They opened their home to us and made us feel like part of their family. We are grateful for their steady friendship. There are many friends at Baylor whose camaraderie helped us endure this process. Most important have been Bracy and Rapture Hill. They are devoted and trusted friends who have far exceeded the duties of friendship. Lunches at Memorial or their home, laughing and laboring in the office, travel around the UK, a weekend in San Antonio, annual game nights—these are just a few of the times we have shared. Here's to many more years of friendship.

Family has provided both hope and help throughout this process. The support and encouragement offered by my parents, Linda and Larry Brook and Michael Rios, cannot be repaid. Similarly, my father-in-law, Robin Nichols, has offered hospitality, support, and gracious understanding.

And finally, my appreciation for Zoé and Isaac, who have endured more than expected since we began this journey, cannot be overstated. Zoé left friends, a supportive community, and a career to support this adventure. She shared all the highs and lows along the way. We have celebrated accomplishments and overcome challenges. The

completion of this project would not have been possible without her patience, love, and support. Thank you for remaining strong and not letting me give-up throughout these long years of uncertainty. I look forward to the journey ahead.

To and in memory of the women who made my life possible

Zoe, Linda, Sue, and Elia

CHAPTER ONE:

Introduction

In his 2009 publication *Science and the Quest for Meaning*, Alfred I. Tauber, (Professor of Philosophy, Zoltan Kohn Professor of Medicine, and Director of the Center for Philosophy and History of Science, Boston University) argues that science is more than knowledge; it is about meaning.¹ Science fundamentally affects the way we think about ourselves and the world in which we live. It informs our understanding of our history, nature, and surroundings and thereby provides the principal components of a comprehensive worldview. Christians have recognized this aspect of science's potential since at least the seventeenth century and have often resisted the desire of some to grant science unrestricted authority to define humanity and its place in the world. For a century-and-a-half the theory of evolution has stood at the center of much of this debate, ostensibly forcing Christians to choose between reinterpreting their understanding of creation or rejecting the consensus of modern science. Considerable historical attention has been given to those who chose the latter option. This dissertation focuses on the others, on those who struggled to reconcile the scientific and Christian views of creation without making science subservient to theology or recanting their faith in the full authority of the Bible. Accordingly, this study hopes to contribute to our understanding of the interaction between Christianity and science in the twentieth century and to join those who have rejected a simplistic view of conflict between creation and evolution. The overarching argument is that at the same time when antievolutionism was becoming

¹Alfred I. Tauber, *Science and the Quest for Meaning*, (Waco, TX: Baylor University Press, 2009), 21.

a movement within conservative evangelicalism, a key group of evangelical scientists was initiating a countervailing trend.

The State of the Conflict Thesis

The commonest view of the relationship between science and religion imagines a great battle. In 1610, it is said, Galileo initiated a pattern in which scientists challenged the church with observed and verifiable facts about nature and in doing so revealed an inherent ecclesiastical resistance to scientific progress and empirical knowledge of the natural world. Throughout the seventeenth and eighteenth centuries figures such as Rene Descartes, John Locke, Isaac Newton, and Francis Bacon helped advance the scientific revolution by casting aside the shackles of religion and medieval thought and by placing more trust in the naturalistic methods of modern science than in biblical and theological views. In the nineteenth century, geology, biology, and biblical criticism permanently undermined the credibility of the Bible, demolished the need for a grand designer, and set the stage for naturalistic philosophies to sweep aside all claims to religious truth. In the twentieth century Darwin was validated, psychology and neuroscience explained the illusion and phenomena of spiritual experience, and sociology discovered the cultural sources of religious belief. In response to its diminishing influence, Christianity assumed a defensive, entrenched position by setting itself against modern science and establishing its own views of nature based on archaic doctrines and primitive ideas.

Although this view of the relationship between science and religion, the so-called conflict thesis, claims a lengthy history, it was first articulated only in the last third of the nineteenth century when a small but influential group of thinkers sought to drive a wedge between Christianity and science. Among the leaders were the English biologist Thomas

Henry Huxley (1825-1895) and the Irish physicist John Tyndall (1820-1893). Huxley, known as ‘Darwin’s bulldog’ for his determined defense of the theory of evolution, was the towering figure among those who sought to emancipate science from theology. His X Club, described by historians Adrian Desmond and James Moore as a “sort of masonic [sic] Darwinian lodge” and of which Tyndall and British sociologist Herbert Spencer were members, became a prominent voice for those who sought to advance the ideas that Huxley later described as “scientific naturalism.”² Tyndall was an equally enthusiastic supporter of Darwin and adversary of traditional Christian views God and the world. At his presidential address before the British Association for the Advancement of Science (1874), Tyndall made clear his desire that science should “wrest from theology, the entire domain of cosmological theory.”³

The discipline of the history of science, which was notably conditioned by competing views about the relationship of science and religion,⁴ played a key role in the promulgation the conflict thesis. Two works were particularly influential. In 1869, Andrew Dickson White, President of Cornell University, delivered a lecture in which he claimed that “in all modern history, interference with Science in the supposed interest of

²Adrian Desmond and James Moore, *Darwin* (New York: Warner Books, 1991), 526; David L. Livingstone, “Replacing Darwinism and Christianity,” in *When Science and Christianity Meet*, eds. David C. Lindberg and Ronald L. Numbers (Chicago and London: University of Chicago Press, 2003), 194; Ronald L. Numbers, “Science without God: Natural Laws and Christian Beliefs,” in *When Science and Christianity Meet*, eds. David C. Lindberg and Ronald L. Numbers (Chicago and London: University of Chicago Press, 2003), 266; James Moore, *The Post-Darwinian Controversies: A Study of the Protestant struggle to come to terms with Darwinism in Great Britain and America, 1870-1900* (Cambridge, London, New York: Cambridge University Press, 1979), 84; Frank Miller Turner, *Between Science and Religion: The Reaction to Scientific Naturalism in Late Victorian England* (New Haven and London: Yale University Press, 1974), 8-37.

³John Tyndall, *Address Delivered Before the British Association Assembled at Belfast* (London: Longmans, Greene and Co., 1874), 61. Another version of this work published in the same year excludes the remark quoted above.

⁴Peter J. Bowler, *Reconciling Science and Religion: The Debate in Early-Twentieth-Century Britain* (Chicago and London: University of Chicago Press, 2001), 80-86.

religion . . . has resulted in the direst evils to Religion and Science, and *invariably*.”⁵ Over the next two decades White’s ideas developed into a two-volume *History of the Warfare of Science with Theology in Christendom* (1896) in which he sought to shine “the light of historical truth into that decaying mass of outworn thought which attaches the modern world to medieval conceptions of Christianity, and which still lingers among us.”⁶ As for the medieval conceptions White was clear. His argument was not against religion as a whole but against dogmatic theology. It was a conflict between “two epochs in the evolution of human thought – the theological and the scientific.”⁷ Meanwhile, John William Draper (1811-1882), an enduring figure at the University of New York, was taking up arms against the Roman Catholic Church. Inspired by his study of the American Civil War, incensed by the claims of papal infallibility, and armed with the arguments of higher criticism Draper offered his *History of the Conflict between Religion and Science* (1874) as an exposition of the authoritarian and unscientific nature of Roman Catholicism.⁸

For the better part of a century the conflict thesis remained the standard interpretation of the relationship between science and religion.⁹ Yet over the past

⁵Andrew Dickson White, “The Battle Fields of Science, *New York Daily Telegraph*, 18 December 1869, 4, quoted in David N. Livingstone, “Re-placing Darwinism and Christianity,” in *When Science and Christianity Meet*, eds. David C. Lindberg and Ronald L. Numbers, (Chicago and London: The University of Chicago Press, 2003), 192.

⁶Andrew D. White, *A History of the Warfare* volume 1, (New York and London, D. Appleton and Company, 1920), v-vi.

⁷ White, *A History of the Warfare*, ix.

⁸John William Draper, *History of the Conflict Between Religion and Science*, 8th ed. (New York: D. Appleton and Company, 1878), viii, 225; Draper served on the science faculty of New York University before becoming president of the university’s medical college in 1850.

⁹For example, Gail Kennedy, ed., *Evolution and Religion: The Conflict Between Science and Theology in Modern America* (Boston: D. C. Heath and Company, 1957).

generation scholars have significantly undermined this one-dimensional view. Historians of science and historians of religion, often working together, have shed light on the complex and diverse ways Christians attempted to reconcile their faith and modern science. By the 1960s, works such as Ian Barbour's *Issues in Science and Religion* (1966) were shedding light on the variety of approaches with which Christians interacted with science.¹⁰ James R. Moore's *Post-Darwinian Controversies* (1979), arguably the watershed work in the field, examined various theological responses to Darwinism and argued that historically orthodox theology was particularly suited to accommodate Darwinian science.¹¹ David C. Lindberg has published a considerable amount of work examining the interactions between science and religion in pre-modern eras.¹² Ronald L. Numbers and Jon H. Roberts are among the most prominent figures to address the challenges Darwinism brought to American Christianity and the various responses it elicited.¹³ Numbers has more recently shown that many prominent Protestant leaders from the seventeenth to the nineteenth centuries were ardent supporters of the naturalistic methodologies in science.¹⁴ Significant revision has also come to the most celebrated battles of the conflict thesis. Richard J. Blackwell has helped reveal the complex

¹⁰Ian G. Barbour, *Issues in Science and Religion* (New Jersey: Prentice-Hall, Inc., 1966).

¹¹ James R. Moore, *The Post-Darwinian Controversies: A Study of the Protestant struggle to come to terms with Darwinism in Great Britain and America, 1870-1900* (Cambridge, London, New York: Cambridge University Press, 1979).

¹²E.g., David D. Lindberg and Ronald L. Numbers, eds., *God and Nature: Historical Essays on the Encounter between Christianity and the Sciences* (Berkeley: University of California Press, 1986); and David C. Lindberg and Ronald L. Numbers, eds. *When Science and Christianity Meet*.

¹³Ronald L. Numbers, *Darwin Comes to America* (Harvard University Press, 1998); Jon H. Roberts, *Darwinism and the Divine in America: Protestant Intellectuals and Organic Evolution, 1859-1900* (Notre Dame: University of Notre Dame Press, 1988).

¹⁴Numbers, "Science without God: Natural Laws and Christian Beliefs," in *When Science and Christianity Meet*, eds. David C. Lindberg and Ronald L. Numbers (Chicago and London: University of Chicago Press, 2003), 265-85.

cultural, religious, and scientific issues that were involved in the infamous trial of Galileo.¹⁵ Edward J. Larson's Pulitzer Prize winning *Summer for the Gods* (1997) has corrected the Hollywood version of the Scopes Trial (1925).¹⁶ Even the supposed thrashing of Bishop Samuel Wilberforce by T. H. Huxley in Oxford in 1860 has been exposed as more legend than fact.¹⁷

Further, Numbers and Aileen Fyfe have examined how knowledge of science was disseminated among and received by the broader Christian culture.¹⁸ David N. Livingstone, Mark A. Noll, D. W. Bebbington, and others have shed light on the diverse evangelical relationship with science.¹⁹ Perhaps no single work has been as helpful or as influential as John Hedley Brooke's *Science and Religion: Some Historical Perspectives*. Brooke has argued that the relationship between science and religion is better understood as one of complexity rather than conflict, if for no other reason than because of the various ways religious people have interacted with even the most advanced science. As he aptly states, "There is no such thing as *the* relationship between science and religion."²⁰

¹⁵ Richard J. Blackwell, *Galileo, Bellarmine, and the Bible* (Notre Dame: University of Notre Dame Press, 1991).

¹⁶ Edward J. Larson, *Summer for the Gods: The Scopes Trial and America's Continuing Debate over Science and Religion* (Cambridge and London: Harvard University Press, 1997); Jerome Lawrence and Robert E. Lee, *Inherit the Wind* (New York: Bantam, 1960).

¹⁷ Cf., Peter J. Bowler *Monkey Trials and Gorilla Sermons: Evolution and Christianity from Darwin to Intelligent Design* (Cambridge and London: Harvard University Press, 2007), 107.

¹⁸ Ronald L. Numbers, *Science and Christianity in Pulpit and Pew* (Oxford and New York: Oxford University Press, 2007); Aileen Fyfe, *Science and Salvation: Evangelical Popular Publishing in Victorian Britain* (Chicago and London: University of Chicago Press, 2004).

¹⁹ David N. Livingstone, D. G. Hart, Mark A. Noll, eds., *Evangelicals and Science in Historical Perspective* (New York and Oxford: Oxford University Press, 1999).

²⁰ James Hedley Brooke, *Science and Religion: Some Historical Perspectives* (Cambridge University Press, 1991), 321. Brooke's extensive annotated bibliography remains exceptionally valuable.

In spite of scholarly consensus, however, the conflict thesis persists, at least at a popular level. A minority of scientists have gone so far as to argue that science has resoundingly disproven all theistic claims. Such claims have been put forth by authors such as Victor J. Stenger, Emeritus Professor of Physics and Astronomy, University of Hawaii, and his *God the Failed Hypothesis: How Science Shows that God Does Not Exist*.²¹ Meanwhile, recent debates between figures such as the renowned atheist Richard Dawkins on the one hand and geneticist Francis Collins and biophysicist-turned-theologian Alister McGrath on the other have played out in popular bookstores and prominent news magazines. The result is at least one clear message: despite objections, there are at least a few militant atheists who believe science has struck a mortal blow to the foundations of religious faith.

One must also recognize that scientific atheists are not alone in perpetuating the appearance of warfare. As historian of science Peter J. Bowler has noted, contemporary religious opponents of Darwinism often resist efforts to convey a more balanced view of the Darwinian revolution because of vested interests in maintaining the view that evolution necessitates atheistic materialism.²² Fundamentalist atheists and fundamentalist Christians both profit from the continuation of conflict. Still, the key issue for most Christians is the preservation of the essence of biblical faith. Many antievolutionists would agree with David A. Noebel, founder and president of Summit Ministries, a fundamentalist evangelical organization that strives to protect adolescents from the intellectual dangers of the modern world. Noble argues that the reconciliation

²¹ Victor J. Stenger, *God the Failed Hypothesis: How Science Shows that God Does Not Exist* (Amherst, New York: Prometheus Books, 2007).

²² Peter J. Bowler, *Monkey Trials and Gorilla Sermons: Evolution and Christianity from Darwin to Intelligent Design* (Cambridge and London: Harvard University Press, 2007), 8.

of Biblical Christianity and evolution in any form is “impossible from a rational perspective.”²³ He states:

If evolution is true, then the story of the Garden of Eden and original sin must be viewed as nothing more than allegory, a view that undermines the significance of Christ’s sinless life and sacrificial death on the cross. Why? Because the Bible presents Jesus as analogous to Adam If Adam was not a historical individual, and if his fall into sin was not historical, then the Biblical doctrines of sin and of Christ’s atonement for it collapse.²⁴

This line of reasoning is not uncommon. Many twentieth-century anti-evolutionists argued that the only Christian view of creation was young-earth creationism, the idea that the world was created in six twenty-four hour periods in the recent past. This notion became so common that by the mid twentieth-century many assumed that creationism presupposed young-earth views. Numbers has shown that this was an invention of the twentieth century. Formerly, the term “creationist” carried a variety of meanings ranging from those who believed that each human soul was specially created to those who opposed evolution or accepted the special creation of species. Only after the self-taught geologist George McCready Price (1870-1963) began promoting his “flood geology,” the idea that the flood recorded in the book of Genesis could account for all the geological evidence that was adduced for evolution, did the term come to be reserved for those who insisted on young-earth creationism.²⁵ As will be seen in this work, Christians who accepted evolution often attempted to reclaim the creationist label.

²³David A. Noebel, *Understanding the Times: The Religious Worldviews of Our Day and the Search for Truth* (Eugene, Oregon: Harvest House Publishers, 1991), 314.

²⁴Noebel, *Understanding the Times*, 316.

²⁵Ronald L. Numbers, “Creating Creationism: Meanings and Uses since the Age of Agassiz,” in *Evangelicals and Science in Historical Perspective*, eds., David L. Livingstone, D.G. Hart, Mark A. Noll, (Oxford and New York: Oxford University Press, 1999), 234-243.

Accordingly, one must recognize some truth in the conflict thesis. Although numerous scholars have demonstrated the overly simplistic nature of the conflict thesis, conflict can hardly be denied. For example, not long before his theological successors attempted to reconcile Christianity and evolution, the eminent Princeton theologian Charles Hodge accused Darwinism of being atheism.²⁶ Edward Larson's examination of court trials related to evolution in the American legal system analyzes a half century of legislative conflict between members of the church and members of the scientific and educational communities.²⁷ Historians and sociologists have repeatedly recognized science as a secularizing force in modern societies. And as will be seen throughout this study, Christians who accept evolution have often felt compelled to justify their convictions to their more conservative coreligionists. These are but a few examples of the episodes of conflict that have marked the historic interaction between science and religion.

This brief survey of the current – and ever growing – body of literature reveals two broad trends that relate directly to this project. First, even in contemporary scholarship remnants of the conflict thesis remain; the generalizations of conflict have not so much disappeared as shifted. While historians no longer argue the older version of the conflict thesis, it is not uncommon to find those who argue that the conflict is between conservative Christians and modern science, particularly when regarding the theory of evolution. In his examination of the nineteenth-century Protestant responses to transmutation, Fredrick Gregory argued that while liberals were able to accommodate

²⁶Charles Hodge, *What is Darwinism?* (New York: Scribner, Armstrong, and Company, 1874).

²⁷Edward J. Larson, *Trial and Error: The American Controversy over Creation and Evolution*, Third Edition (Oxford, 2003, 1985).

Darwinian evolution, traditional Christianity rejected such accommodation: “In the face of the transition from an older, theologically grounded science to a new, positivistically grounded one, the warfare between science and Christianity in the nineteenth century was undeniably real, so long as religion tried to remain traditional.”²⁸ More recently, Peter J. Bowler has argued that the proposed synthesis between science and religion in early twentieth-century Britain “required the modification, if not the suppression, of many aspects of traditional Christian beliefs, reducing religion to a more generalized theism. The synthesis thus depended on a degree of theological liberalism that many orthodox Christians regarded as a complete betrayal.”²⁹ Even in the recently published *Encyclopedia of Christian Civilization* the eminent American historian Marty E. Marty writes without qualification that in twenty-first century America “the old opposition to Darwinism remains strong among conservatives.”³⁰ This view of conflict is aggravated by the fact that the preponderance of historical attention given to theological conservatives has frequently highlighted those with antievolutionary views.³¹ The common perception is that theological conservatism implies antievolution.

This idea, however, has failed to withstand historical scrutiny. Since at least the 1970s, scholars have rejected the tendency to draw strong lines between liberal and

²⁸Fredrick Gregory, “The Impact of Darwinian Evolution on Protestant Theology in the Nineteenth Century,” in *God and Nature: Historical Essays on the Encounter between Christianity and the Sciences* (Berkeley: University of California Press, 1986), 384.

²⁹ Peter J. Bowler, *Reconciling Science and Religion: The Debate in Early-Twentieth-Century Britain* (Chicago and London: University of Chicago Press, 2001), 4.

³⁰ Martin E. Marty, “Liberal/Conservative Dichotomy in American Christianity,” in *Encyclopedia of Christian Civilization* volume 2, ed. George Thomas Kurian (Chichester, UK: Wiley-Blackwell, 2009), 1352-1358.

³¹Such as Ronald L. Numbers, *The Creationists: From Scientific Creationism to Intelligent Design*, expanded edition (Cambridge, MA and London: Harvard University Press, 2006).

conservative thinkers. Moore's *Post-Darwinian Controversies* (1979) demonstrates that numerous prominent conservative theologians were able to accept Darwinism. Keith E. Yandell has argued that compared with Neo-Orthodoxy, orthodox theologians, i.e. evangelicals, focused on bridges rather than walls between science and theology: Conservative theologians "[sought] a view of the world that integrate[d] the theological and the scientific."³² David Livingstone and Mark Noll have examined the peculiar ability of Benjamin B. Warfield, the great champion of biblical inerrancy, to affirm Darwinian science.³³ Various authors have pointed to figures such as Asa Gray, James McCosh, James Orr, and Augustus Strong as examples of those whose acceptance of evolution did not cast them into the liberal camp. As Livingstone has argued, the search for patterns of acceptance or rejection of Darwinism based on theological or denominational lines is futile: "Calvinists and Arminians, liberals and conservative, and nearly all major denominations can find those for and against natural selection."³⁴

The second broad trend within recent scholarship deals with chronology. Historians have yet to explore significantly the evangelical response to evolution and modern science after 1930. Those who do so at all have given the greatest amount of attention to the resurgence of scientific creationism in the 1960s and the development of the intelligent design movement in the 1990s. An important exception to this pattern is Bowler's *Reconciling Religion and Science* (2004). Bowler argues that while the

³² Keith E. Yandell, "Protestant Theology and Natural Science in the Twentieth Century," in *God and Nature: Historical Essays on the Encounter between Christianity and the Sciences* (Berkeley: University of California Press, 1986), 466.

³³ David N. Livingstone and Mark A. Noll, "B. B. Warfield (1851-1921): A Biblical Inerrantist as Evolutionist," *Isis* 91, No. 2 (Jun., 2000): 283-304.

³⁴ David N. Livingstone, "Replacing Darwinism and Christianity" in *Where Christianity and Science Meet*, 197.

opening decades of the twentieth century were marked by concerted efforts of intellectually conservative scientists, liberal religious thinkers, and popular writers to reconcile science and religion, during the 1930s a resurgence in conservative Christian ideologies and cultural dissatisfaction with the ideology of progress thwarted their efforts.³⁵ As noted earlier, Bowler wrongly contends that reconciliation between evolution and Christianity required theological liberalism. Nevertheless, his argument regarding the conservative resistance to reconciliation during the 1930s stands. In the 1930s, critiques of theological liberalism, concern over the growing threat of war, and insecurity stemming from an international economic depression combined to undermine the popular faith in progressivism and efforts to integrate science and theology. Other historians have noted similar trends in the USA in the previous decade.³⁶ The beginning of William Jennings Bryan's antievolutionary crusades in 1921 is often treated as marking the start of creationist currents that swept through American evangelicalism in the middle part of the twentieth century. In light of these events, this study will show that in the 1940s key evangelical scientists resumed efforts to reconcile science and religion and that in the end they proved more enduring than the attempts in the early part of the century. Events were set in motion by which conservative evangelicals reinvigorated efforts of reconciliation without forsaking theological orthodoxy or faith in the Bible.

³⁵Bowler, *Reconciling Science and Religion*, 3-4, 417.

³⁶George M. Marsden, *Fundamentalism and American Culture*, 2nd edition (Oxford and New York: Oxford University Press, 2006); Ferenc M. Szasz, *The Divided Mind of Protestant America, 1880-1930* (University of Alabama Press, 1982).

Overview

This dissertation examines the origins and early developments of the two most prominent twentieth-century evangelical scientific organizations that sought to reconcile conservative Christian faith with modern science. The American Scientific Affiliation (ASA) began in September 1941 when five conservative evangelical scientists joined forces to establish a “Society for the Correlation of Science and the Bible.” Although the founders of the ASA were antievolutionists, by the early 1960s the leadership’s opposition to evolution had waned and the group became staunch defenders of an evangelical understanding of evolution. Meanwhile, British evangelicals were becoming equally concerned with the challenges modern science posed to orthodox Christian faith. In response, Inter-Varsity Fellowship, a conservative evangelical student ministry that grew out of the Student Christian Movement in the 1920s, encouraged the founding of the Research Scientists’ Christian Fellowship (RSCF, later Christians in Science). From its beginning the RSCF was scientifically more broadminded than the ASA and more concerned with the apologetic needs of research scientists. It saw naturalism rather than evolution as the main threat facing the church and it lacked the anti-evolutionary assumptions popular in America. Despite their British context, however, members of the RSCF soon experienced resistance from other evangelicals who rejected the organization’s efforts. By the 1980s, the RSCF was compelled to engage a growing creationist trend within the United Kingdom.

Three central questions guide this study. First and most broadly it asks what the American Scientific Affiliation and the Research Scientists’ Christian Fellowship reveal about the evangelical engagement with science in the middle decades of the twentieth

century. This question has several constituent parts: What motivated those who struggled to reconcile Darwinism and evangelical faith? To whom were they speaking? What issues did they address? Where did they stand on the most controversial questions? How were they challenged? Two points must be noted from the outset: neither group desired to be defined by its view of evolution; and neither considers evolution the most important scientific issue facing the church today. Nonetheless, evolution was a preoccupying subject for both groups throughout the twentieth century. The second question asks how these groups accepted modern scientific views, especially evolution, without abandoning historically orthodox Christianity. That is, how were they able to maintain conservative evangelical theology while rejecting a conservative view of the relationship between science and the Bible? Finally, in light of their many similarities and the vast differences between American and British evangelicalism at the time, this project asks how the groups were different. What were these differences? How did they affect the organizations? And what might this reveal about the differences between American and British evangelicalism more broadly? By dealing with these issues this study will help shed light on how conservative evangelicals during the middle years of the twentieth century accepted modern scientific understandings without abandoning historically orthodox Christian views and will further our understanding of some of the differences between American and British evangelicalism. As we turn our attention to the mid twentieth-century engagement between science and religion, several items must be taken into account.

First, the development of the theory of evolution was one part of a series of sweeping changes during the nineteenth and early twentieth centuries that effected a

dramatic transformation of the disciplines of science. Geology challenged traditional views of the age of the earth. The development of the laboratory and new experimental methods helped to bring about the “new biology.” Genetics became a distinct field of study and helped distinguish between competing theories of evolution. John B. Watson and Sigmund Freud helped psychology emerge from philosophy and biology into a science of its own. Classical physics gave way to theories of relativity and quantum mechanics. Cosmology began to explain our expanding universe. Collectively these changes amounted to sweeping revisions in our understanding of the physical world. Meanwhile, leading German, American, and British universities created departments that facilitated the development of particular research techniques, distinguished individual disciplines from other areas of knowledge, and helped to bring about the professionalization of science as a whole. These years also saw a dramatic surge in science’s social and political prestige. Scientific discoveries were increasingly recognized as the source of true knowledge of the world and humanity. By the end of World War II scientific advancement was considered necessary for the survival and betterment of the modern world; science had won the war, would help establish the peace, and would be essential in rebuilding societies that had been destroyed. Second, one must remember the importance of geographical location and its effects on the issues at hand.³⁷ By the time the ASA was founded, antievolutionism had become a cultural movement in the USA. Here opposition to Darwinism was widely seen as a key component of conservative evangelicalism. While there were antievolution groups in the UK, the intensity never equaled the movement that consumed American evangelicalism

³⁷Livingstone, “Replacing Darwinism and Christianity” in *When Science and Christianity Meet* eds. David C. Lindberg and Ronald L. Numbers (Chicago and London: University of Chicago Press, 2003).

beginning in the 1920s. Hence, understanding the work of the ASA and RSCF requires mindfulness of the rise of science in the preceding century and familiarity with the various responses to Darwinism in the USA and UK in the decades between the publication of Darwin's *Origin* and the close of WWII. These issues will be the subject of chapter two.

Chapters three through six comprise the main part of this work and are organized around three key events: the independent founding of each organization in the 1940s, an international meeting of evangelical scientists at Oxford in 1965 where key ASA and RSCF leaders first met each other, and the first joint meeting of the ASA and RSCF, also at Oxford in 1985. Chapters three and four examine the history of the ASA and RSCF from their beginnings until 1965. Attention will be given to their respective founding and purposes, convictions and challenges, and the directions they set during their first two decades. For the ASA this period was characterized by the leadership's gradual acceptance of evolutionary science, by their cautious handling of creationist challenges, and by their desire to be recognized as a professional scientific organization. For the RSCF this period was marked by the development of key ideas that guided much of the organization's history, by the rise of unexpected challenge from other evangelical leaders, and by the need to defend science's role in Christian faith. Chapters five and six treat the developments of both groups between 1965 and 1985. Familiar challenges resurfaced and new ones arose during this period. For both organizations the question of how to deal with antagonistic creationist groups was a primary concern.

Historiography

The early history of the ASA has been the attention of several important works. D. G. Hart and Ronald L. Numbers have offered important analyses of the early ASA. The former provides an important study of the group's transition from fundamentalist origins into the major American scientific body supporting the evangelical acceptance of evolution.³⁸ The latter analyzes the ASA within the broader context of American creationism.³⁹ In 1985, F. Alton Everest, one of the luminaries of the early ASA, produced a useful and important institutional history that offers a commendable account of the first four decades of the ASA from one of the group's most important leaders. Far from being simply a nostalgic memoir, Everest's work displays a scientist's desire for detail and accuracy. Everest's history, *The American Scientific Affiliation: Its Growth and Early Development*, remained in manuscript form from 1985 to 2010.⁴⁰ The *Journal of the American Scientific Affiliation (JASA)* has carried regular accounts of the organization's history written by past or present leaders. Articles by H. Harold Hartzler and J. W. Haas are particularly noteworthy. Other authors have recognized the ASA's role in helping define the creationist controversies of the 1960s.⁴¹ The most critical appraisal of the ASA comes from James Gilbert. Though aspects of Gilbert's analysis are commendable, particularly his attention to the ASA's desire for professionalism, his

³⁸D. G. Hart, "The Fundamentalist Origins of the American Scientific Affiliation," *Perspectives on Science and Christian Faith* 43, no. 4 (December 1991): 238-248.

³⁹Ronald L. Numbers, *The Creationists: From Scientific Creationism to Intelligent Design*, expanded edition (Cambridge, MA and London: Harvard University Press, 2006).

⁴⁰Everest, *The American Scientific Affiliation: Its Growth and Early Development* (Ipswich, MA: The American Scientific Affiliation, 2010).

⁴¹E.g., George E. Webb, *The Evolution Controversy in America* (Lexington, Kentucky: the University of Kentucky Press, 1994).

work suffers from positing the assumptions of the founders as the criteria for measuring the group's success.⁴² The most thorough work on the early ASA has been conducted by historian of science Mark Kalthoff (professor of history and chair of history and political science department, Hillsdale College). His 1995 anthology *Creation and Evolution in the Early American Scientific Affiliation* includes an excellent summary of the group's early history and contains many of the most important early writings. His 1998 PhD dissertation, "The New Evangelical Engagement with Science," thoroughly documents the group's gradual acceptance of evolutionary science up to the year 1963.⁴³ A decade in the making and more than 700 pages long, Kalthoff's work is essential for those interested in the organization's early history. None have focused on the ASA's history after the early 1960s or examined the group's relationship with the RSCF.

The RSCF has received considerably less attention than that given to the ASA. While there are passing references in select publications and a few commemorative accounts in RSCF literature, none has attempted a thorough analysis of the group's work or thought. The dearth of attention might stem in part from the lack of concern among the group's members to preserve the organization's history. The earliest members seem to have made it a matter of principle to have discussions without recording them.⁴⁴ The RSCF was nearly a decade old before minutes of committee meetings were kept. That any RSCF material has survived is due largely to the diligence of Bennet McInnes, a

⁴²James Gilbert, *Redeeming Science: American Religion in an Age of Science* (Chicago and London: University of Chicago Press, 1997), Chapter 7: "Rendezvous at Rancho La Brea."

⁴³ Mark A. Kalthoff, "New Evangelical Engagement with Science: The American Scientific Affiliation, Origin to 1963," PhD diss. (Indiana University, 1998); The least helpful work on the ASA is William C. Duke, Jr., "The American Scientific Affiliation and the Creation Research Society: The Creation-Evolution Issue," PhD diss., (Southwestern Baptist Theological Seminary: Fort Worth, TX, 1982).

⁴⁴ Bennet McInnes to author, March 4, 2008.

longtime RSCF member who served as the group's secretary in the 1990s, a former research scientist at the Royal Observatory, Edinburgh, for nearly three decades, and the RSCF's default archivist who has dutifully cared for the most important documents. McInnes has also produced a brief but useful account of the group's founding, a condensed version of which has been published on the Christians in Science website.

Finally, the conclusions made here are not meant to suggest that the rank-and-file members of the RSCF or ASA were unanimous in their views. Both groups boasted their acceptance of all thoughtful perspectives as long as those who held them maintained evangelical faith. Kalthoff has described the often vigorous exchanges of ideas within the ASA as harmonious dissonance, a clear and sometimes cacophonous clash of convictions that in the end produces a remarkably pleasing setting for exploring questions of science and faith.⁴⁵ Although RSCF members often appeared to be more aligned in their views, Kalthoff's metaphor applies to them as well. Attention here has been given to the leadership and most prominent members of each group, but both included individuals who held the full range of convictions for and against evolution. Though some of the dissenting views will be overlooked, they were nevertheless important contributors to the conversations. My focus, however, is upon those who accepted evolution without abandoning conservative evangelical faith.

⁴⁵Mark A. Kalthoff "Harmonious Dissonance of Evangelical Scientists: Rhetoric and Reality in the Early Decades of the American Scientific Affiliation," *PSCF* 60, no. 4 (December 1991).

CHAPTER TWO

Evangelicals and Science: 1860s to 1940s

Considering how fiercely I have been attacked by the orthodox it seems ludicrous that I once intended to be a clergyman.

- Charles Darwin, 1876

It almost seems . . . as if our earth had during the last fifty years passed through a zone of cosmic disturbance. A somewhat similar disturbance took place four centuries ago, of which the convulsions we have ourselves experienced may be regarded as a continuation, a second shock of the same earthquake.

- W. MacNeile Dixon, 1937

In 1860, virtually all evangelicals affirmed the Genesis account of creation. Late eighteenth- and early nineteenth-century advances in geology had lengthened the period of time in which God had created the earth, but these ideas were easily reconciled with conservative readings of the Bible through the day-age or gap theories. These views posited an indefinite amount of time within the creation narrative by either lengthening the days of creation or by finding a chronological gap between the opening verses of the book of Genesis. Most understood creation as a series of supernatural events, culminating in the special creation of humans in the somewhat recent past. Significantly, on the eve of the American Civil War many scientists affirmed these views. Fifteen years later, the situation had changed dramatically. By 1875 most scientists accepted some version of evolution and recognized humanity as part of the evolutionary process. While a few evangelicals had already attempted a reconciliation of creation and evolution, most had not. Liberals had long since demonstrated tolerance for evolution, but most conservatives still believed that transmutation contradicted clear biblical teachings. By 1900, evolution had become a principal theory of modern science.

Naturalists still debated competing views, but virtually none denied the overall concept. Evolution also found increasing cultural appreciation for its affirmation of the progressive spirit that dominated attitudes in the English-speaking world. By the turn of the century, many conservative theologians had also accepted evolution. In both America and Britain the most influential religious thinkers affirmed evolution as part of God's creative process. Many still rejected Darwinism, but most were able to find or amend one of the scientific theories being debated in order to reconcile ideas of creation and evolution.

By 1925, the situation was again changing and indeed it may have seemed as if the earth had passed through a great cosmic disturbance, as W. MacNeile Dixon said. Scientific advances, particularly in physics, imagined the universe as a strange new world. Darwinism was validated by the field of genetics. Meanwhile, growing discontent with evolution became apparent, in the USA more than the UK, as conservatives increasingly saw modern science as undermining the credibility of the Bible and the essentials of orthodox theology. Widespread American antievolutionism led to the Scopes Trial and fostered the development of a fundamentalist counter culture. By the 1930s, the evangelical desire to synthesize evolution and creation had all but disappeared. War and economic depression dampened the progressive mood of most and caused the majority of theologians who had not already rejected evolution to turn their attention elsewhere. This chapter will highlight some of the key events that occurred during this formative period and shaped the context of the founding of the American Scientific Affiliation and the Research Scientists' Christian Fellowship.

The Evolution of a Theory

The first theory of evolution was not Darwin's. In the eighteenth century, scientific advances and elevated views of reason combined to question Christian understandings of nature and natural theology. Novel ideas challenged the biblical views of the origin of life, the age of the earth, and the fixity of species. Perhaps the most famous view of this period came from Charles' paternal grandfather, Erasmus Darwin (1731-1802), a well known English physician who described a process of gradual transmutation in *Zoonomia*. Although some historians have attempted to demonstrate that such ideas were forerunners of modern views, others stress caution in connecting them with the younger Darwin.¹

The first viable theory of evolution came from Jean-Baptiste Lamarck (1744-1829), a French naturalist who began publishing his ideas of evolution early in the nineteenth century. The centerpiece of Lamarck's thought was 'the inheritance of acquired characteristics,' the belief that the traits acquired in one's lifetime are inherited by the next generation. Accordingly, the child of a bodybuilder inherits more highly developed muscles. The giraffe that stretches to reach the top branches produces a calf with a longer neck. Although Lamarck's views failed to attract significant supporters during his lifetime, they were advanced during the middle and late nineteenth century among figures such as the French naturalist Etienne Geoffroy Saint-Hilaire (1772-1844), the British paleontologist Richard Owen (1804-1892), and the English sociologist Herbert Spencer (1820-1903). Lamarckism fit well with the nineteenth century's

¹Peter J. Bowler, *Evolution: The History of an Idea*, 3rd Edition (Berkeley and London: University of California Press, 2003), 48-95.

emphasis on progress.² By placing the impetus for development within, it also became important for later Christians who argued that this concept made room for divine guidance of the evolutionary process.

Evolution gained popular attention in Britain in 1844 following the anonymous publication of Robert Chambers's *Vestiges of the Natural History of Creation*. Although *Vestiges* contained questionable science and was criticized by the scientific elite, its description of transmutation as the progressive unfolding of a divine plan did much to condition the popular reception of evolution after 1859.³ Still, evolution earned widespread approval only after the appearance of Darwin's *Origin of Species* (1859).

Darwin took a circuitous route to becoming one of the world's foremost naturalists.⁴ The son of a prosperous middle-class family, he studied medicine at Edinburgh and pursued a BA at Cambridge before discovering his love for science. At Cambridge he became a favored student of geology professor Adam Sedgwick and botany professor John Stevens Henslow. The two fueled Darwin's scientific passions and helped hone his analytic skills. The rich friendship he developed with Henslow proved formative, as it was he who helped Darwin gain his place as the gentleman-naturalist aboard the HMS *Beagle*. During the five-year voyage to South America (1831-1836) Darwin made the discoveries that led him to develop his theory of evolution.⁵ Two

²Bowler, *Evolution*, 315.

³See James Secord, *Victorian Sensation: The Extraordinary Publication, Reception, and Secret Authorship of Vestiges of the Natural History of Creation* (Chicago: University of Chicago Press, 2000); Bowler, *Evolution*, 134-140.

⁴For a useful chronology of Darwin's life see Keith Francis, *Charles Darwin and the Origin of Species*, (Westport, CT: Greenwood Press, 2007), xv-xxi.

⁵Charles Darwin, *The Autobiography of Charles Darwin*, ed. Nora Barlow (New York and London: W. W. Norton and Company, 1958), 60-69.

observations were critical. On the continent, Darwin discovered that earthquakes continued to form the Andes Mountains. According to Sedgwick, an advocate for catastrophism (which will be discussed further below), the mountains should have been formed by a single catastrophic event. Having recently read Charles Lyell's *Principles of Geology*, Darwin was compelled to abandon catastrophism and accept Lyell's uniformitarianism, the idea that geological change occurred incrementally over vast periods of time. Darwin soon began to see evidence of similar change in the biological world. His second discovery came on the Galapagos Islands, where he found immense variation between members of the same species from one island to another. When the *Beagle* returned to England in 1836, Darwin set off immediately in search of the explanation for his observations. By the end of the decade he had formulated his theory of natural selection.

Quickly dissatisfied with Lamarckian ideas, Darwin struggled to find a better explanation for evolution. He sought insights from artificial selection, the practice of creating new varieties of animals by breeding only those with desirable characteristics. He also read the clergyman Thomas Malthus's work in political theory, which argued that a "struggle for existence" operated within all societies because the food supply never met the needs of the population. Darwin soon realized that a struggle for existence also operated in nature, thus providing a form of natural selection that gave some animals advantages depending on their physical composition. Individuals within a species, he

concluded, were naturally in competition for resources and breeding, and over time only those with beneficial characteristics survived.⁶

Twenty years passed between the time Darwin developed his theory of natural selection and the publication of *Origin*. Described as the “preservation of favourable variations and the rejection of injurious variations,” Darwin saw natural selection as the process by which all species had come into existence.⁷ Using the example of dogs and their prey, Darwin illustrated his theory thus:

Let the organization of a canine animal become slightly plastic, which animal preyed chiefly on rabbits, but sometimes on hares; let these same changes cause the number of rabbits very slowly to decrease and the number of hares to increase; the effect of this would be that the fox or dog would be craven to try to catch more hares, and his numbers would tend to decrease; his organization, however, being slightly plastic, those individuals with the lightest forms, longest limbs and best eyesight (though perhaps with less cunning or scent) would be slightly favored, let the difference be ever so small, and would tend to live longer and to survive that time of the year when food was shortest; they would also rear more young, which young would tend to inherit these slight peculiarities. The less fleet ones would be rigidly destroyed. I can see no more reason to doubt but that these causes in a thousand generations would produce a marked effect, and adapt the form of the fox to catching hares instead of rabbits, than that of greyhounds can be improved by selection and careful breeding.⁸

Although the majority of researchers accepted transmutation by the end of the 1870s, the scientific community debated the validity of Darwinism for half a century. Lamarckian thought remained popular for several decades, with notable scientific

⁶Peter J. Bowler and Iwan Rhys Morus, *Making Modern Science: A Historical Survey* (Chicago and London: University of Chicago Press, 2005), 143-149; Edward J. Larson, *Evolution: The Remarkable History of a Scientific Theory* (New York: The Modern Library, 2006), 53-77.

⁷Charles Darwin, *Origin of Species by Means of Natural Selection: or the Preservation of Favoured Races in the Struggle for Life* in *From So Simple a Beginning: The Four Great Books of Charles Darwin*, ed. with introduction by Edward O. Wilson (New York and London: W. W. Norton and Co., 2006), 501.

⁸Charles Darwin and Alfred Russel Wallace, *Evolution by Natural Selection*, quoted in Bowler and Morus, *Making Modern Science*, 147.

objections to natural selection coming from figures such as the Scottish engineer H. C. Fleeming Jenkin, the English zoologist St George Mivart, and William Thomson (later Lord Kelvin). Darwin's theory became orthodox science only after advances in the field of genetics in the early twentieth century undermined Lamarck's understanding of inherited characteristics.

Evangelical Responses

Nineteenth-century evangelicals responded to evolution with remarkable diversity. At first, most evangelicals expressed justifiable skepticism or ignored the topic. As long as the scientific community remained undecided about evolution, many within the churches believed that the idea would soon be refuted. Christians who rejected Darwinism often regarded it as 'science, falsely so called'⁹ and saw it as contradicting the ideas of design in nature and divine activity. Evolution in general seemed to challenge the opening chapters of Genesis and the nature of biblical authority. Human evolution seemed incompatible with concepts of the image of God and appeared to contradict the doctrines of the fall and the need for salvation. Nevertheless, as scientists came to accept evolution, even if they debated how it occurred, a considerable number of evangelicals attempted to accommodate evolutionary theory. By the turn of the century, leading evangelical scientists and theologians argued that evolution was God's means for creation. The situation changed dramatically during the 1920s and 1930s, as cultural and

⁹E.g., "Proposed Victoria Institute, or Philosophical Society of Great Britain," Appendix A of [James Reddie], *Scientia Scientiarum: The Origins and Objects of The Victoria Institute or Philosophical Society of Great Britain* (London: Robert Harkwicke, 1865), 26. Although the author is noted a "A member" and the name McArthur appears on the title page, it was reprinted under James Reddie's name in the first volume of the *JTVI*. All relevant secondary literature credits Reddie with its contents (cf., E. J. G. Titterton, "The Early History of the Victoria Institute," *JTVI*, vol. 82 (1950), 57; see also, Jon H. Roberts, *Darwinism and the Divine in America: Protestant Intellectuals and Organic Evolution, 1859-1900* (Notre Dame: University of Notre Dame Press, 1988), chap. 2.

religious tensions prompted a conservative reaction against evolution in both the USA and UK that shaped the skeptical if not antagonistic context of the 1940s.

For a while, accusations that Darwinism was specious science could claim considerable scientific support. By 1859, many prominent naturalists had already declared their opposition to the transmutation theories of Lamarck and Chambers. Accordingly, when scientists such as the Harvard paleontologist Louis Agassiz came out against Darwin's theory, it could have seemed to many as if evolution would soon be relegated to the list of failed scientific ideas.¹⁰ Many casual observers saw Darwinism as little more than fanciful speculation. Science, it was widely assumed, meant careful induction based on clear observations and verifiable facts. Natural selection, Darwin himself admitted, struggled to meet these standards. Although his work was in step with many of the changing attitudes about scientific method, in which theories and hypotheses were taking a more central role and the ability for new ideas to link diverse areas of knowledge was increasingly appreciated, Darwin recognized his own lack of empirical evidence.¹¹ These deficiencies contradicted the 'Baconian ideal' popular among evangelicals, the insistence that true science relied upon facts and observation rather than hypotheses and theories. As a result, many felt justified in accusing Darwin's theory of moving too far beyond true science. Many of the earliest members of the Victoria Institute, the first Christian organization (founded in 1865) established specifically to confront evolution, adopted this line of attack. "Nothing can be more vague," one

¹⁰Jon H. Roberts, *Darwinism and the Divine in America: Protestant Intellectuals and Organic Evolution, 1859-1900* (Notre Dame: University of Notre Dame Press, 1988), 33-38, 40.

¹¹Bowler, *Evolution*, 158, 197-199; Roberts, *Darwinism and the Divine*, 41; For a fuller discussion of Darwin's departure from Baconian science see, James R. Moore, *The Post-Darwinian Controversies: A Study of the Protestant struggle to come to terms with Darwinism in Great Britain and America, 1870-1900* (Cambridge, London, New York: Cambridge University Press, 1979), 194-196.

member claimed, “than the application of the word scientific. We shall have to determine what is and what is not scientific. By real science I mean that which is established by perfect demonstration, not that based merely on hypothesis.”¹² Others went further assuming license to discount emerging views if there was even a modicum of dissent within the scientific community. Chastising those who asserted the certainty of modern science, the group’s founder declared “What is called ‘science, and boasted of as so ‘certain’ by some, is far from certain,—is continually changing and altering,—is disputed and denied and controverted [*sic*], on scientific grounds, by very competent persons.”¹³ This attitude of distrust of the emerging science was prevalent among early British and American antievolutionists.

The Darwinian challenge to the argument from design, the cornerstone of seventeenth and eighteenth-century natural theology, also played a prominent role in turning some evangelicals away from evolution or towards non-Darwinian views. According to the design argument, nature revealed more than the grandeur and wisdom of God. By focusing attention on the adaptation of structure to function, it also revealed his benevolence. Although design was challenged by the social and revolutionary crises of the eighteenth century, many were reassured of its validity by William Paley’s *Natural Theology* (1802) and Thomas Chalmers’s work on natural theology and apologetics the *Bridgewater Treatises* (1833-1836).¹⁴ Darwin’s ideas, however, turned the central themes

¹²Chairman’s response in Warrington, “Sketch of the Existing Relations between Scripture and Science,” *JTVI* 1 (1867): 110.

¹³Reddie, *Scientia Scientiarum*, 6, 23; see also, John Kirk, “On the Past and Present Relations of Geological Science to the Sacred Scriptures,” *JTVI*, Vol. 1 (1867): 331-381; “On Spontaneous Generation or The Problem of Life,” *JTVI*, vol 5 (1871): 146-158.

¹⁴Mark A. Noll, “Thomas Chalmers (1780-1847) in North America (ca. 1830-1917),” *Church History* 66:4 (December 1997): 764-765, 777, n. 54.

of the design argument on its head. Creatures were not designed for their surroundings but had adapted to them through a struggle for existence. Thus, those that did not adapt did not survive. Darwin, an early admirer of Paley's thought, summarized the critique well in his autobiography:

The old argument of design in nature, as given by Paley which formerly seemed to me so conclusive, fails, now that the law of natural selection has been discovered. . . . There seems to be no more design in the variability of organic beings and in the action of natural selection, than in the course which the wind blows.¹⁵

Natural selection, in other words, erased all evidence of divine forethought. The clearest response to this aspect of Darwinism came from Princeton theologian Charles Hodge, whose 1874 publication *What is Darwinism?* answered unequivocally, "It is atheism."¹⁶ Hodge conceded that one could be an evolutionist and a Christian, but he believed that Darwin's emphasis on random development was incongruent with the teachings of the Bible: "The conclusion of the whole matter is, that the denial of design in nature is virtually the denial of God. Mr. Darwin's theory does deny all design in nature, therefore, his theory is virtually atheistical."¹⁷ Historians debate whether Hodge accepted a more benign theory of evolution, but it seems clear that he remained firmly unconvinced of its scientific merit. Hodge spent more than twenty-five pages highlighting contemporary scientific views that went against evolution.¹⁸

¹⁵Darwin, *Autobiography*, 73.

¹⁶Charles Hodge, *What is Darwinism?* (New York: Scribner, Armstrong, and Company, 1874), 177.

¹⁷Hodge, *What is Darwinism*, 173.

¹⁸Hodge, *What is Darwinism*, 142-168.

The assumption of a direct link between evolution and atheism became a prominent theme in some evangelical rhetoric. A speaker at the Clerical and Lay Association meeting at Derby in 1880 asserted that the materialistic implications of evolution led “to practical atheism.”¹⁹ Seven years earlier, Enoch Fitch Burr, pastor of the Congregational Church in Hamburg, Connecticut, expressed this sentiment more forcefully as he condemned the theory for its apparent contradiction of divine action in nature: “Founded by atheism, claimed by atheism, supported by atheism, used exclusively in the interest of atheism, suppressing without mercy every jot of evidence for the Divine existence, . . . the Doctrine of Evolution may well be set down as not only a foe of Theism, but a foe of the most thorough-going sort.”²⁰ Thus, the link between evolution and atheism stemmed as much from its negated view of divine action as it did from its denial of design. Yet, for many the more important issue was evolution’s challenge to the Bible.

Many evangelicals on both sides of the Atlantic were inherently skeptical of any claim that seemed to contradict the testimony of Scripture.²¹ As the British evangelical E. A. Tindall stated in 1901: “it is difficult to perceive how the Bible can speak with its wonderful force of spiritual utterance if it contains any inaccuracy of scientific or historical statement.”²² Similarly, his fellow countryman A. H. Carter asserted thirteen years later, “when we come across statements in the Book that seem to be a variance with

¹⁹Revd Gerard Smith, quoted in Martin Wellings, *Evangelicals Embattled: Responses of Evangelicals in the Church of England to Ritualism, Darwinism and Theological Liberalism 1890-1930* (Paternoster Press, 2003), 203.

²⁰In Roberts, *Darwinism and the Divine*, 76

²¹Roberts, *Darwinism and the Divine*, 209-231; Wellings, *Evangelicals Embattled*, 189-221

²²Quoted in Wellings, *Evangelicals Embattled*, 205

Modern Science, it is our duty to accept the statements of the Inspired Word of God.”²³
Accuracy and authority seemed linked when dealing with biblical revelation.

For most evangelicals in the nineteenth and early twentieth centuries, the key issues in the creation narratives dealt not with the ‘days of creation.’ Geology had already established the antiquity of the earth, and most evangelical thinkers found little trouble reconciling these views with the Bible (a pattern that will be discussed further below). Few Christians attempted to defend the view that God created the world in six twenty-four-hour periods. Even prominent antievolutionists, such as geologists Arnold Guyot (1807-1884) and John William Dawson (1820-1899), were able to employ the day age theory (the idea that the days of Genesis correspond to great periods in earth’s history) or gap theory (the idea that the situation described in the first verse of Genesis was chronologically separated from events of the verses that followed) to interpret the opening verses of Genesis.

For most, the key issues in the biblical view of creation dealt with the nature of humanity, the fall, and the need for salvation. Due to its denial of the special creation of humanity, in 1872 J. H. Pratt, Anglican Archdeacon of Calcutta, described Darwin’s theory as “contrary to reason, . . . degrading to man, and . . . offensive as regards Divine revelation.”²⁴ Others argued that “any theory which assumes that man was not created by a special act of God, having no Cause, in the scientific sense of the term, . . . cannot be reconciled with the Bible”²⁵ In 1878, John T. Duffield, Presbyterian clergyman and

²³Quoted in Wellings, *Evangelicals Embattled*, 200

²⁴Pratt, *Scripture and Science*, quoted in Wellings, *Evangelicals Embattled*, 200.

²⁵J.M. Buckley “Symposium on Evolution,” 645-646 in Roberts, *Darwinism and the Divine*, 104.

professor of mechanics and mathematics at the College of New Jersey, described evolutionism and the scriptural account of the origin of man as “irreconcilable.”²⁶

Contrary to the claims of Darwin and Huxley, then, evangelicals refused to see humans as mere refined brutes. They are special creations made in the image of God, not the latest development in the evolutionary chain. Further, humans were fallen as a result of sin. The historical accuracy of the fall and the origin of sin were essential elements of the creation narratives that evangelicals were unwilling to give up. Duffield thus described transmutation theories as “irreconcilable with what the Scriptures teach as to man’s original and present spiritual condition.”²⁷ The Scottish theologian James Orr argued the point more fully. “Sin, as Scripture and experience represent it,” he declared,

is irreconcilable . . . with an evolutionary theory which . . . pictures man as having arisen, bodily and mentally, by slow gradations from the animal, as subsisting through uncounted millenniums in a state of semi-brutishness and savagery. Sin implies relation to God, but here there is no knowledge of God, or possibility of right relation to Him. Sin implies the possibility of sinless development; here such possibility is precluded. Sin implies voluntary departure from rectitude; here it is made a necessity. Sin implies possession of enough knowledge of moral law to enable the moral being to act rightly. Here the glimmer of light in reason and conscience, if present at all, is of the faintest. Sin postulates freedom; here man is a slave to animal impulse and passion from the first.²⁸

Thus, many evangelicals recognized obstacles to accepting Darwinism and synthesizing evolution and creation. Some rejected it as false science based upon hypothesis and speculation or condemned the ateleological implications of natural selection. Others recognized the challenges evolution and Darwinism posed to their views of the reliability of Scripture, their view of humanity, and the doctrine of the fall. Most who accepted

²⁶Numbers, *Creationists*, 353, n. 18; Roberts, *Darwinism and the Divine*, 104.

²⁷Quoted in Roberts, *Darwinism and the Divine*, 108-109.

²⁸James Orr, *Sin as a Problem of Today*, quoted in Wellings, *Evangelicals Embattled*, 201.

evolution assumed a modified view that resembled Lamarckism more than Darwinism. Yet during this same period, a significant number of evangelicals displayed an eager desire to reconcile evolution, and even Darwinism, with Christianity.

Reconciling Evangelicalism and Evolution

Evangelicals did not unanimously oppose the new directions in scientific methodology or relegate evolution to the category of pseudo science. This became apparent even in the earliest years of the Victoria Institute. Though the Institute was founded with the purpose of defending “revealed truth from ‘the oppositions of science, falsely so called,’”²⁹ not all members were as presumptuous in their critiques. One of the first to challenge the group’s views was John Hall Gladstone (1827-1902), a respected figure in the field of physical chemistry and Fellow of the Royal Society. In a paper published in the first volume of the *Journal*, Gladstone encouraged the Institute to be more cautious in criticizing scientific claims. Science was like theology, he argued; only those inside the tradition fully understood its language:

Unhappily, there are theologians who think they can overthrow the careful deductions of scientific men by a few dashing remarks; while there are philosophers who anxiously enquire into the mysteries and apparent contradictions of nature, yet fling aside the Bible at the first seeming discrepancy.³⁰

Both sides, in other words, must avoid needlessly discarding the other’s views. Although Gladstone never challenged the Institute’s view of evolution, he became a strong advocate for a greater appreciation of modern scientific methods.

²⁹From “Proposed Victoria Institute, or Philosophical Society of Great Britain,” Appendix A of *Scientia Scientiarum*, 26.

³⁰John Hall Gladstone, “On the Mutual helpfulness of Theology and Natural Science,” *Journal of the Victoria Institute* 1 (1867): 394.

Similar critiques came from a young scientist named George Warington. Born to a prominent family and gifted with a bright mind, he earned a first-class degree in natural science from Cambridge and became an active author, critic, teacher, and speaker.³¹ In 1865, he won the Actonian Prize, an award given for the best work in natural theology, for his *Phenomena of Radiation as Exemplifying the Wisdom and Beneficence of God*.³² Warington became a Fellow of the Chemical Society and a founding member of the Victoria Institute before his premature death at age thirty-three. At the age of twenty-six he delivered the Victoria Institute's inaugural paper.

Like Gladstone, Warington rejected the haste with which Victoria Institute members rejected scientific theories, and he went further in criticizing their hypocritical attitude. "We hear much now-a-days," he wrote,

of the contradictory hypotheses of Science, of the constant flux of opinions in the scientific world, of the evil of hasty assumptions and biased interpretations of phenomena, and the consequent futility of objections founded upon such a basis . . . [But] Are there no contradictory hypotheses among the defenders of Scripture? Is there no flux of opinion in orthodox views? Are there no hasty assumptions, no biased interpretations . . .? Ay, truly, and that to a far greater degree, and of a kind far more inexcusable.³³

³¹Warington's maternal grandfather, George Jackson, was a medical practitioner and inventor who made significant improvements to the microscope, some of which were used well into the twentieth century. His father and brother, both named Robert, were prominent scientists in their respective fields of chemistry and agricultural science. (Francis Galton and Edgar Schuster, *Noteworthy Families (Modern Science: An Index to Kinships in Near Degrees between Persons Whose Achievements Are Honourable, and Have Been Publicly Recorded*, Vol. I Of the Publications of the Eugenics Record Office of the University of London. London: John Murray, Albemarle Street, 1906. <http://infomotions.com/etexts/gutenberg/dirs/1/7/1/2/17128/17128.htm> (accessed November 18, 2007).

³²Warington, *The Phenomena of Radiation as Exemplifying the Wisdom and Beneficence of God* (London: William Skeffington, 1865); see the preface for a description of the Actonian Prize, which bears no relation to Lord Acton.

³³Warington, "Sketch of the Existing Relations between Scripture and Science," *JTVI* 1 (1867): 100.

By thus emphasizing the need for Christians to scrutinize the claims and conclusions of theology and exegesis as much as they did science, Warington challenged the fundamental purpose of the Institute.³⁴ By opposing those who rejected the new methods of science and the priority given to hypotheses, he also put himself at the center of the organization's debates over evolution. In testing the validity of a hypothesis, he argued, it was unnecessary to prove it true, only that it was possible, adequate, consistent, and in harmony with "the ordinary and known workings of God."³⁵ Warington went on to demonstrate that Darwin met each of these requirements.³⁶ Natural selection was possible because it fit with known life cycles and observed patterns of inheritance. It was adequate in that the hypothesis was capable of accounting for every difference in species known to exist. It was consistent in that it accorded with geological and contemporary biological observations. And most importantly it was harmonious, Warington claimed, in that it conformed to biblical understandings of God and his world. Warington wrote, "I confess myself utterly at a loss to understand how any objection can possibly be taken against Darwinism theologically."³⁷ Since God is continually involved in nature, he asked, and since natural selection is seen at work in the present age, why should one doubt that natural selection was employed in the process of creation? He concluded, "It is that Darwinism, though very far from being established as a true hypothesis . . . is yet

³⁴Warington, "Sketch of the Existing Relations between Scripture and Science," 101.

³⁵Warington, "On the Credibility of Darwinism," *JTVI* 2 (1868): 40, quote from p. 60.

³⁶Warington, "On the Credibility of Darwinism," 44-60.

³⁷Warington, "On the Credibility of Darwinism," 61.

supported by so strong an array of testimony of all kinds as to be certainly *credible*, and so a good working hypothesis for investigators to keep in mind.”³⁸

Warington’s defense of natural selection attracted considerable attention. Darwin sent a letter of appreciation, writing that he had “no where seen so good an abstract.”³⁹ Princeton theologian Charles Hodge was less impressed, citing Warington’s paper as evidence of the “very considerable latitude of opinion” that existed within the Institute.⁴⁰ The majority of the members of the Institute appear to have agreed with Hodge. Responding to Warington’s ideas, Walter Mitchell, vice-president of the Victoria Institute at the time and chair of the meeting, stated that although the paper had done “more justice to Darwinism than the book of Darwin himself,” as an anti-evolutionist he was even more convinced that “Darwinism is not a bit more credible than I thought it was before.”⁴¹ Mitchell’s opinion was echoed by James Reddie, the founder and guiding figure of the early Institute, who responded that despite Warington’s claims, Darwinism remained “*inharmonious, inadequate, inconsistent, and utterly incredible.*”⁴²

While some evangelicals were making peace with the new directions in science, others were redefining design in order to accommodate an evolutionary view of creation.

³⁸Warington, “On the Credibility of Darwinism,” 61.

³⁹Charles Darwin to George Warington, Oct. 7, 1867, *The Correspondence of Charles Darwin, Volume 15, 1867* (Cambridge University Press, 2006), 388. Unfortunately, the Victoria Institute failed to retain Darwin’s admiration. In a letter the following week Darwin described the Institute as “very rich from the nonsense talked” (Ibid., Letter to A. R. Wallace, 12/13 Oct. 1867).

⁴⁰Charles Hodge, *What is Darwinism* (New York: Scribner, Armstrong, and Company, 1874), 112.

⁴¹Chairman’s response in Warington, “On the Credibility of Darwinism,” 62.

⁴²Reddie’s response in Warington, “On the Credibility of Darwinism,” 62; See also, James Reddie, “On the Credibility of Darwinism. (In reply to Mr. Warington’s Paper, read March 4th, 1867), *JTVI* vol. 2 (1868), 63-96. The brevity of responses to Warington’s paper is conspicuous. Whereas most papers in the Institute were followed by many pages worth of discussion, the responses to Warington’s paper took up less than a page.

Among scientists, few were more energetic than Harvard University botanist Asa Gray, one of the foremost naturalists of the day and a close friend of Darwin. Gray was instrumental in helping secure the scientific acceptance of evolution in America by the mid-1870s, and was a prominent advocate for the reconciliation of Christianity and evolution.⁴³ Although he considered himself scientifically a full-fledged Darwinist, he rejected his friend's insistence that natural selection negated the evidence of design, a point he made evident in many of his reviews of *Origin* in the early 1860s.⁴⁴ Gray's example helped a generation of Christian scientists reconcile their work and their faith. A later survey (conducted in 1919) by Charles A Blanchard, President of Wheaton College, demonstrates how common it had become for science departments at Midwestern colleges to teach evolution. Even at southern evangelical colleges such as Wake Forest College (North Carolina) and Baylor University (Texas) evolution was included as part of the biology curriculum.⁴⁵

Another advocate for a teleological interpretation of Darwinism was the American geologist James Dwight Dana. Between 1860 and 1874, Dana gradually accepted evolution, and by 1883 he had granted natural selection a key role in the evolutionary process, though he was also willing to acknowledge truth in Lamarck's thought. In a lecture course on the topic of evolution and theism, he assured his students that since evolution worked according to an orderly process, natural laws, it implied the existence of a divine lawgiver. His first lecture concluded with the following remarks:

⁴³Cf. Asa Gray, *Natural Science and Religion*, (New York: Charles Scribner's Sons, 1891).

⁴⁴David N. Livingstone, *Darwin's Forgotten Defenders: The Encounter Between Evangelical Theology and Evolutionary Thought* (Grand Rapids, Michigan: William B. Eerdmans Publishing Company, 1987), 63-64.

⁴⁵Ronald L. Numbers, *The Creationists: From Scientific Creationism to Intelligent Design*, expanded edition (Cambridge, MA and London: Harvard University Press, 2006), 54-55, 61-62.

- (1) That it is not atheism to believe in a development theory, if it be admitted at the same time that Nature exists by the will and continued act of God.
- (2) That we cannot tell when we have ascertained the last limit of discovery with regard to secondary causes.
- (3) That God is ever near us, ever working in and through Nature, carrying forward his spiritual purpose, and is ever in communion with the Godly man. . . .

Let Science dig, and dredge, and work her laboratories. She is searching for God's truth. If her teachers are atheistic, accept still the truth that is well established; but to the atheism give no quarter, for it is to Man the annihilation of hope and of all the higher joys of his being.⁴⁶

Theologians did their part to show how design could be maintained within an evolutionary view of creation. Princeton stalwart B. B Warfield, Baptist theologian A. H. Strong, Scottish Free Church theologian James Iverach, and his renowned countryman James Orr, were among the most influential.⁴⁷ Instead of focusing on instances of adaptation, they pointed to evidence of an overarching plan in the unfolding of creation. Warfield, Hodge, and Iverach preferred Darwinism, arguing that natural selection and divine interaction were not mutually exclusive. "Teleology," Warfield argued, "is in no way inconsistent with . . . a complete system of natural causation."⁴⁸ Orr, who as noted earlier rejected Darwinism and believed that the scientific community was on his side, preferred a Lamarckian view of evolution. His confidence was such that he declared evolution to be little more than "a new name for 'creation.'"⁴⁹

⁴⁶Dana, "Relation of Evolution to Theism," Lectures on Evolution, no. 1 (Dana Family Papers, Yale University Library), quoted in Livingstone, *Darwin's Forgotten Defenders*, 76.

⁴⁷Mark A. Noll, ed., *The Princeton Theology, 1812 – 1921: Scripture, Science, and Theological Method From Archibald Alexander to Benjamin Warfield* (Grand Rapids, MI: Baker Academic, 1983, 2001), 233, 294; D. W. Bebbington, "Science and Evangelical Theology in Britain from Wesley to Orr," in *Evangelicals and Science in Historical Perspective*, eds., David L. Livingstone, D.G. Hart, Mark A. Noll, (Oxford and New York: Oxford University Press, 1999), 132-135.

⁴⁸Warfield, review of *Darwinism Today*, Vernon L. Kellogg, *Princeton Theological Review* 6 (1908): 640-650, quoted in Livingstone, *Darwin's Forgotten Defenders*, 117.

⁴⁹Orr, "Science and Christian Faith," in *The Fundamentals* (Chicago: Testimony Publishing Co., 1910-1915), Vol. 4, 103.

Orr was among the many who saw Lamarckian thought as key to the modified design argument.⁵⁰ Lamarckism allowed Christians to see God's guiding hand within the evolutionary process without the cruel implications of natural selection. Historian of science Peter Bowler has further shown how this kinder form of evolution contributed to the emergence of the new natural theology that was a key part of strong anti-materialistic trends in science that surfaced in the closing decades of the nineteenth century.⁵¹ Neo-Lamarckism fostered a liberal teleological evolutionism that easily accommodated the desire to see natural history as the unfolding of a divine plan, preserved the long-standing commitment to natural theology, and accepted the rapidly growing appreciation for the explanatory power of natural laws. Historians debate the extent to which natural theology formed a 'common context' through which naturalists and the broader public interpreted contemporary science in the first half of the nineteenth century.⁵² Nevertheless, if Darwin may serve as an example, one can find considerable evidence that the design argument remained formative among university-trained naturalists until the middle of the century. Neo-Lamarckism helped to satisfy the need for both natural theology and natural law by preserving the best of evolutionary thought without the thorns of natural selection or denying the claims of Design.⁵³

⁵⁰Wellings, *Evangelicals Embattled*, 195, 199.

⁵¹Peter J. Bowler, *Reconciling Science and Religion: The Debate in Early-Twentieth-Century Britain* (Chicago and London: University of Chicago Press, 2001), 122-159.

⁵²See for examples, Jonathan R. Topham, "Beyond the 'Common Context': the Production and Reading of the Bridgewater Treatises," *Isis* 89:2 (June 1998): 233-262; David N. Livingstone, "Natural Theology and Neo-Lamarckism: the Changing Context of Nineteenth-century Geography in the United States and Great Britain," *Annals of the Association of American Geographers* 74, no. 1 (1984): 9-28.

⁵³David N. Livingstone, "Natural Theology and Neo-Lamarckism," 9-28.

Of course, accepting evolution required reconciliation of the apparent biblical contradictions. Some attempted to do so without denying a literal view of Genesis. For example, B. B. Warfield, the champion of biblical inerrancy, argued that Genesis offered an abbreviated description of the creative process that was necessary in order to accommodate the beliefs and intellect of the original audience.⁵⁴ Others were less concerned with preserving a literal account. James Orr wrote that the general flow of the creation narrative made room for the claims of science, as long as design was preserved and human evolution left out.⁵⁵ Yet when it came to synthesizing Genesis and evolution, perhaps none displayed more creativity than the young George Warington.

In a paper read to the Victoria Institute on 1 June 1868, he re-examined the principles of natural theology contained in the biblical cosmogony. He found six: the dependence of all things on God; God's independence from his creatures; God's government by fixed laws; God's method of gradual development; God's principle of subordination; and God's rest.⁵⁶ The first three principles were consistent with traditional natural theology. The following three were not. Arguing for the principle of gradual development in Genesis, Warington argued that God "does not create a perfect universe at once, but slowly builds it up step by step."⁵⁷ First the earth was empty and void, then it gradually became fully ordered and inhabited by people. From here, Warington turned

⁵⁴B. B. Warfield, "Calvin's Doctrine of the Creation," *Princeton Theological Review* 13 (1915); cf. Livingstone, *Darwin's Forgotten Defenders*, 120.

⁵⁵James Orr, *The Christian View of God and the World as Centering in the Incarnation, being the Kerr Lectures for 1890-91*, 3rd ed. (New York: C. Scribner's, 1897), 420-421, 181-186.

⁵⁶George Warington, "The Biblical Cosmogony Scientifically Considered," *JTVI*, vol. 3 (1869): 343.

⁵⁷Warington, "The Biblical Cosmogony Scientifically Considered," 346.

the traditional argument on its head – science was just beginning to catch up with Genesis. To claim evolution “as established Science would certainly be premature,” he wrote. “It is only mentioned here to show how fully the *principle* [of gradual development] set forth in Genesis is recognized by the most advanced leaders of Science as a true one in regard to the order and manner of creation.”⁵⁸ Warington continued by arguing that God’s principle of subordination showed that there were successive stages of creation, and that each stage was necessary for that which followed.⁵⁹ Thus, Warington argued that the opening chapters of Genesis not only allowed for evolution, but also, if understood correctly, would lead one to expect it.

For Warington, the principle of God’s rest meant that God’s act of creation was neither continuous nor eternal. God’s direct guidance in creation has ended. He wrote:

The fact of God being at the present time resting from creation, is one to which Science abundantly testifies. Minutely as she may examine Nature . . . no trace of creation as a process now going on can she anywhere detect. Changes, transformations, developments, reproductions, there may be in abundance, but no creation. Creative force is not now in action. It can only be inferred from its results . . . The Creator is resting . . . There is no need for creative power, for all things in the universe are so constituted, so governed by law, so fitted into one another, that by mutual action and reaction the whole machinery of the world is kept in unceasing motion, self-guiding, self-adjusting, self-energised.⁶⁰

By thus reinterpreting the biblical cosmogony, Warington found not only evidence for evolution in the biblical cosmogony, but evidence for the theory of natural selection.

Warington clearly took considerable liberty in interpreting Genesis as well as Darwin’s

⁵⁸Warington, “The Biblical Cosmogony Scientifically Considered,” 346.

⁵⁹Warington, “The Biblical Cosmogony Scientifically Considered,” 346.

⁶⁰Warington, “The Biblical Cosmogony Scientifically Considered,” 349.

theory of natural selection. Still, his efforts to reconcile the two convey a broader goal among key Christian thinkers.

Thus the situation between 1870 and 1920 was considerably more complex than commonly assumed. While nearly all respected scientists accepted some version of evolutionary theory by 1875, Darwinism was not confirmed by science until the twentieth century. While antievolutionary sentiments remained strong among many Christians,⁶¹ increasing numbers of conservatives led the way towards reconciliation with evolution. Conservative theologians did their part in accommodating evolution, with key British and American thinkers demonstrating remarkable acceptance of transmutation.⁶² Many evangelicals continued to reject evolution, but those who did so remained relatively restrained in their dissent. Not until the interwar period did antievolutionism become a prominent part of public discourse.

Resurgent Resistance

The causes of the antievolutionary spirit that became manifest in the interwar period have occupied historians for a generation. Cultural fears of the apparent repercussions of atheistic naturalism, liberal-progressivism, and declining religious commitment as well as theological reactions to the degrading effects of liberalism and biblical criticism and a desire to return to the fundamentals of biblical faith all contributed to a growing resistance to evolution experienced on both sides of the Atlantic, though considerably more so in the US. The results were a latent distrust of evolution among evangelicals in Britain and strident creationism in America.

⁶¹Wellings, *Evangelicals Embattled*, 195.

⁶²Bebbington "Science and Evangelical Theology in Britain from Wesley to Orr," 131-133.

The differences between American and British reactions to evolution were in no small way connected to larger dissimilarities emerging between the two countries by the early twentieth century. Important distinctions in religious education contributed to the growing disparity. British evangelicals pursued theological and ministerial training within the diverse setting of the established universities. Fearful of the growing influence of theological liberalism, most American evangelicals separated themselves from the universities by establishing independent seminaries to prepare clergy and Bible colleges to train lay-workers. Distrust of the established seminaries intensified after the 1920s. As a result, many future pastors turned to Bible colleges for their professional training, further separating themselves from America's academic centers.⁶³ As a result, large numbers of evangelical pastors were educated in isolated institutions where academic rigor was rarely emphasized. This pattern did much to shape American evangelical culture. It is little surprise, therefore, that British evangelicals, who trained in the same places where the most advanced scientific work was occurring and critical theories were developed, were more comfortable than their American counterparts with evolution, modern biblical criticism, and the academic standard for biblical interpretation.⁶⁴

Some have found the differing approaches to Scripture at the heart of the differences between US and UK Evangelicalism. Stephen R. Holmes's recent study of

⁶³Joel A. Carpenter, "Fundamentalist Institutions and the Rise of Evangelical Protestantism" *Church History* 49:1 (March 1980): 66.

⁶⁴D. W. Bebbington, "Evangelicalism in Modern Britain and America," in Mark A. Noll, D. W. Bebbington, George A. Rawlyk, John Walsh, Susan O'Brien, Harry S. Stout, David A. Currie, et al, *Evangelicalism : Comparative Studies of Popular Protestantism in North America, the British Isles, and Beyond 1700-1900* (New York: Oxford University Press, 1994), 204.

doctrines of Scripture is particularly illuminating.⁶⁵ Holmes argues that in the nineteenth century, important distinctions developed between American and British evangelical understandings of Scripture. In America, theologians at Princeton Seminary, most importantly A. A. Hodge and B. B. Warfield, helped elevate the latent belief in the accuracy of the Bible to a full-blown articulation of plenary verbal inspiration. As a result, inerrancy became the primary lens through which to understand Scripture. These views were promoted by Warfield's successor J. Gresham Machen and others and remained popular among American evangelicals throughout the twentieth century. By 1900, British evangelical scholars, who were significantly more influenced by the romantic movement than were their American counterparts, rejected the need to defend the Bible as completely free of error.⁶⁶ They focused more on the inspiration and authority of the Bible in matters related to 'faith and conduct' than on its inerrancy. The result, Holmes argues, is that while American evangelicals tended to see the Bible as a collection of facts to be believed, British evangelicals saw the Bible as rules to be obeyed. Thus, both the relative ease with which British evangelicals accepted evolution and the anti-evolutionary impulse in American fundamentalism may be seen as logical outcomes of distinct understandings of the nature of the Bible. Despite these generalizations, however, twentieth-century Britain was not without its share of antievolutionists.

⁶⁵Stephen R. Holmes, "Evangelical Doctrines of Scripture in Transatlantic Perspective," *Evangelical Quarterly* 81.1 (2009): 38-63; see also Holmes, "British (and European) evangelical theologies," in *Cambridge Companion to Evangelical Theology*, eds. Timothy Larsen and Daniel J. Treier (Cambridge and New York: Cambridge University Press, 2007), 254-256.

⁶⁶Bebbington, "Evangelicalism in Modern Britain and America," 197.

In both countries, reactions to evolution were part of growing tensions between conservative and liberal theology in the early twentieth century. Although one cannot draw clear lines between liberals and conservatives regarding their acceptance or rejection of evolution, an important distinction quickly emerged over their willingness to allow science to determine theological views. Conservatives remained committed to the Bible as the ultimate authority of Christian faith and to historically orthodox Christian doctrines. The Nicene Creed was affirmed as the most basic expression of faith, containing fundamental expressions regarding Christ's divinity, his physical resurrection, and his future judgment of the world. Convictions regarding the reality of sin, the need for salvation, and the power of the atonement were universally held. Most important, the Bible was considered the Word of God, without equal in defining ultimate truth. Liberals saw traditional theology as an obstacle to the survival of the church, were less committed to past doctrines, and were more willing to allow experience to modify religious dogma. Liberal theologians' emphasis on divine immanence and progressivism and their willingness to gloss difficult biblical passages made accommodation with science relatively easy. By the beginning of the twentieth century, many liberals had become theological modernists and were eager to demonstrate Christianity's compatibility with modern thought and knowledge.⁶⁷ British Congregationalist R. J. Campbell's *The New Theology* (1907) made this point clear. Combining idealist philosophy, biblical criticism,

⁶⁷Cf. William R. Hutchison, *The Modernist Impulse in American Protestantism* (Durham and London: Duke University Press, 1992); D. W. Bebbington, *Evangelicalism in Modern Britain: A History from the 1730s to the 1980s* (London and New York: Routledge, 1989), 181-82; Bowler, *Reconciling Science*, 244ff.

and modern science, Campbell developed a theology that denied God's holiness, human sinfulness, and the need for the Atonement.⁶⁸ "The New theology," he proclaimed,

is the religion of science. It is the denial that there is, or ever has been, or ever can be, any dissonance between science and religion; it is the recognition that upon the foundation laid by modern science a vaster and nobler fabric of faith is rising than the world has before known. Science is supplying the fact which the New Theology is weaving into the texture of religious experience.⁶⁹

Thus, in the relationship between science and religion, science was to be the dominant partner.

Campbell's theology elicited considerable responses from evangelical thinkers.⁷⁰ Charles H. Vine's *Old Faith and the New Theology*⁷¹ (1907, a collection of sermons and essays by evangelical pastors and professors) offered a series of response to the New Theology aimed at a popular audience. The contributors unanimously confirmed the value of science, but they rejected Campbell's disregard for the contemporary value of the Bible and his quasi-pantheistic view of divine immanence.⁷² The Reverend R. F. Horton, former Chairman of the Congregational Union of England and Wales, for example, insisted that the Christian view of creation was key to the modern view of science, and that science, echoing Kepler, was "thinking God's thoughts after Him."⁷³ The theory of evolution was no exception to Horton's view: "The discovery of the

⁶⁸Bowler, *Reconciling Science*, 224-232.

⁶⁹Campbell, *New Theology*, 15, Quoted in Bowler, *Reconciling Science*, 226-227.

⁷⁰See Bebbington, *Evangelicalism in Modern Britain*, 198-199.

⁷¹ Charles H. Vine, *Old Faith and the New Theology* (London: Sampson Low, Marston & Company, 1907).

⁷²E.g., P. T. Forsyth, "Immanence and Incarnation," and Charles H. Vine, "The Value and Authority of the Bible," in Charles H. Vine's *Old Faith and the New Theology* (London: Sampson Low, Marston & Company, 1907).

⁷³R. F. Horton, "The Holy Spirit in Scripture and Experience," in Vine, *Old Faith and the New Theology*, 197.

unifying principle of organic evolution has been a new insight into the ways of the Spirit that moved upon chaos and produced a cosmos. That discovery . . . , after a century of inquiry into the physical world and its processes, is a revelation of the Spirit.”⁷⁴

Yet despite conservative protests and the fleeting popularity of the New Theology, modernist attitudes in both countries became increasingly apparent as liberal church leaders more openly denied traditional doctrine in favor of inferences from recent science. In 1935, Edwin Ewart Aubrey, Professor of Christian Theology and Ethics at the University of Chicago, called for “a restatement of Christian historic experience in terms that catch the attention of thoughtful moderns. To lay hold on the vital spiritual insights of our Christian tradition and to make them intelligible to the modern mind: this is the task the modernists set themselves.”⁷⁵ A decade earlier Shailer Mathews (1863-1941), dean of the University of Chicago Divinity School for a quarter century, had expressed the essence of theological modernism as “the use of the methods of modern science to find, state and use the permanent and central values of inherited orthodoxy in meeting the needs of the modern world.”⁷⁶ Mathews further argued that modernists held the scriptures in high regard, but they had equal respect for the intellectual integrity of students of the Bible and full appreciation for the value of its scientific study.⁷⁷ He thus freely claimed the right to use science to determine biblical and theological convictions.

⁷⁴ R. F. Horton, “The Holy Spirit in Scripture and Experience,” in Vine, *Old Faith and the New Theology*, 197.

⁷⁵ Edwin Ewart Aubrey, “What is Modernism?,” *The Journal of Religion*, 14, no. 4 (Oct. 1935): 426-447, 426-27.

⁷⁶ Shailer Mathews, *The Faith of Modernism* (AMS Press: New York, 1969, originally published 1924), 23.

⁷⁷ Mathews, *The Faith of Modernism*, 37-53.

Such attitudes were unacceptable to conservatives, even to those working to reconcile science and faith. The issue that incited the most passionate reactions on both sides of the Atlantic dealt with the fall and the need for salvation.

Among the more polarizing British figures in this regard was E. W. Barnes, a fellow of the Royal Society and Bishop of Birmingham (1924-1953) who believed that human evolution implied steady progressive development.⁷⁸ When he declared in his notorious “Gorilla Sermons” (1920) that it was “necessary to abandon the doctrine of the Fall and arguments deduced from it by theologians from St. Paul onward,” many British conservatives’ tolerance for evolution was exceeded.⁷⁹ If people were not fallen, they were without need of salvation. The foundation of Christian theology seemed at risk. Afterwards, British reactions against evolution became more prominent.⁸⁰ Although the American fundamentalist George McCready Price (who will be discussed further below) unsuccessfully attempted to arouse antievolutionary sentiments within the Victoria Institute between 1924 and 1928, antievolutionism was soon nurtured by native figures such as physicist Ambrose Fleming, the Reverend Harold C. Morton, the well-known submariner Bernard Acworth, and R.E.D Clark.⁸¹ Clark (who will be discussed further in chapter four) became Britain’s leading creationist after World War II.⁸² In the 1930s, Acworth and ornithologist Douglas Dewar (1875-1957) rallied British antievolutionists

⁷⁸Bebbington, *Evangelicalism in Modern Britain*, 207.

⁷⁹Quoted in Wellings, *Evangelicals Embattled*, 202; see also Bebbington, *Evangelicalism in Modern Britain*, 207-208.

⁸⁰Bebbington, *Evangelicalism in Modern Britain*, 208.

⁸¹See Bowler *Reconciling Science*, 125; Numbers, *Creationists*, 142-143.

⁸²See, Numbers, *Creationists*, 153-157.

and formed the Evolution Protest Movement (1935).⁸³ Despite Dewar's energetic efforts, the EPM failed to attract significant attention from most British evangelicals. Nonetheless, its creation revealed increased, though relatively reserved, resistance to modern science.

The American fundamentalist movement, which rose to cultural prominence during the interwar period, is in part defined by its refusal to coexist peacefully with evolution.⁸⁴ Having already battled modernist views of Scripture, religion, and Christianity, fundamentalists of the 1920s set their sights on Darwinism. Reactions were prompted in part by expanding public secondary education in the early part of the century that exposed increasing numbers of American adolescents to evolution. Beginning in 1921, William Jennings Bryan (1860-1925) symbolically led the charge to prohibit the teaching of evolution in America's public schools. Bryan had become convinced that Darwinism brought a religious and cultural threat that if unchecked would lead America down the depraved path taken by Germany and other European nations.⁸⁵ Events came to a head during the summer of 1925 in Dayton, Tennessee, at the infamous Scopes Trial, where Bryan faced Clarence Darrow, the most famous trial attorney of his day, over the state's antievolution law. The state won and popular opposition to evolution deepened, but the rural setting and dramatic exchanges between Bryan and Darrow engrained in some a caricature-image of fundamentalists as anti-intellectual hillbillies. Afterwards the controversy remained out of the cultural spotlight for almost four decades. Scientists

⁸³See Bowler *Reconciling Science*, 127-128, 149-153.

⁸⁴Marsden, *Fundamentalism and American Culture* 2nd ed. (Oxford and New York: Oxford University Press, 2006), 141.

⁸⁵Edward J. Larson, *Summer for the Gods: The Scopes Trial and America's Continuing Debate over Science and Religion* (Cambridge and London: Harvard University Press, 1997), 40-41.

continued developing and improving their theories, schools and textbook companies downplayed evolution, and conservative religious leaders maintained their objections. Public outbreaks were minimal until the 1960s, when United States Supreme Court decisions advancing the separation of church and state and the federally funded Biological Sciences Curriculum Study textbooks helped bring evolution to a place of prominence in the public schools. These events forced antievolutionists to change their tactics. Instead of demanding the removal of evolution from the classroom, they insisted that creation science be taught alongside evolution.

Among the more formative developments of the 1920s was the creation of ‘flood geology.’ While Bryan was traversing America with his campaign against Darwinism, a Seventh-Day Adventist and self-educated geologist named George McCready Price (1870-1963) was peddling his own convictions of the geological data. Price’s arguments, expounded in *The New Geology* (1923), contradicted the views of the antiquity of the earth accepted by most scientists and church leaders alike. Following the lead of the best evangelical theologians, most conservative clergy accepted the scientific consensus of the earth’s age. The inclusion of the Gap Theory in the notes of the immensely popular Scofield Reference Bible (1909), which sold more than 10 million copies, helped secure the idea as a mainstay of fundamentalist theology.⁸⁶ Price, however, insisted that the formations scientists regarded as evidence of geological age were actually the effects caused by the worldwide flood described in the book of Genesis. The earth was no more than several thousand years old.⁸⁷

⁸⁶Joseph M. Canfield, *The Incredible Scofield and his Book* (Vallecito, California: Ross House Books, 1988).

⁸⁷Numbers, *Creationists*, 88-119.

Price's views were repudiated by the scientific establishment and at first found only lukewarm reception among evangelicals. Many of his earliest followers seemed to miss the point that flood geology contradicted the popular gap theory and day-age views. Yet by 1930 Price had become one of the most popular scientists in fundamentalist circles. Soon thereafter, he along with Dudley Joseph Whitney (who will be discussed more in chapter 3) formed the Religion and Science Association (1935), a short-lived organization that Price hoped would spread his science throughout fundamentalism. Differences of theological and scientific opinion, however, caused the RSA to collapse in 1937, but it was soon followed by the Deluge Geology Society, a group more explicitly limited to those who shared Price's views. Although never successful in its own right, the DGS, founded in 1938, became a hotbed for young-earth creationism and flood geology, uniting some of the movement's most important mid-century leaders.⁸⁸ In 1963, John C. Whitcomb, Jr. and Henry Morris (of whom more will be discussed in chapter three) incorporated Price's work in their *Genesis Flood*. The subsequent popularity of flood geology marked a strong departure from the traditional evangelical relationship with science.

The use of the Bible to create scientific views, so-called "Bible-only" or "Bible-dependent" science, was a practice that until the 1960s lacked acceptance among large numbers of evangelicals.⁸⁹ Formerly, evangelicals were more likely to attempt accommodating biblical teachings and generally accepted science than to insist the Bible should dictate scientific views. The success flood geology has enjoyed is novel within

⁸⁸Numbers, *Creationists*, 116-160.

⁸⁹ Mark A Noll, "Evangelicalism and Fundamentalism," *Science and Religion: A Historical Introduction*, ed. Gary B. Ferngren (Johns Hopkins University Press, 2002), 272-73.

evangelical history.⁹⁰ This view, particularly since the 1960s, has been able to take advantage of its alienation from established educational institutions to foster a democratic, populist form of science that accentuates major evangelical themes and attracts a significant number of unscientifically minded people. Thanks to George McCready Price, a small but active number of fundamentalists began to see disproving standard geological conclusions as the key to defeating evolutionism. As a result, a disproportionately vocal group began to challenge established geological conclusions as well as evolution, causing many to confuse the methods of geology and biology. By mid-century, many creationists seemed incapable of distinguishing between the two sciences.

Thus, the situation at the beginning of the 1940s seemed bleak for science and religion dialogue within conservative evangelicalism. In the UK theological and scientific attention had turned elsewhere. In America, a few continued to call for reconciliation, but their voices were drowned out by a much larger group that had uncharacteristically severed ties with the best contemporary science out of fear of Darwinian science and its potential social and theological implications. This unprecedented move away from accepted science seemed necessary if Christians were to maintain fundamental convictions about humanity and the world.

⁹⁰Ibid. Elsewhere Noll shows how a similar Bible-only science was developed by John Hutchinson in the early eighteenth century. Hutchinson's ideas did not win the support of the evangelical community. Thus, while Bible-based science is not novel to evangelicalism, its popular acceptance was ("Science, Theology, and Society," 105-108).

The Scientific Attitude

The Darwinian revolution was part of a larger transformation in science in the nineteenth and early twentieth centuries. The discovery of the conservation of energy in the second quarter of the nineteenth century is often marked as the beginning of a process of professionalization that eventually worked its way through every scientific discipline.⁹¹ Seen within the context of a broad battle over the meaning of science, professionalization was a result of territorial disputes among scientists competing for their own visions of science and society.⁹² Natural philosophy was eclipsed by empirical research and advanced methodologies. Scientific inquiry moved from the museum and libraries to university laboratories. Science departments were established at major universities throughout Europe, Britain, and America. Each of the major disciplines experienced changes that, if not revolutionary, ushered in novel ideas that transformed the way most saw the world. Germany and France were at the forefront of many developments, with British universities close behind. The famed Cavendish Laboratories at Cambridge were dedicated in 1874. American developments trailed behind those in Britain. Although there were a few major milestones in the first half of the century, including the founding of the Smithsonian Institution in 1846, only after the American Civil War did the US economy or political structure allow for sustained, large-scale support for scientific research.⁹³ By the early twentieth century America became a

⁹¹Bowler, *Making Modern Science*, 101.

⁹²Iwan Rhys Morus, "(Stop) Talking About Victorian Science," *Annals of Science* 64:1 (January 2007): 94-95.

⁹³David D. Van Tassel and Michael G. Hall, *Science and Society in the United States* (Homewood, IL: The Dorsey Press, 1966), 23-24.

formidable presence in the scientific world and nearly every discipline had undergone profound changes.

One of the more significant conceptual revolutions produced by science stemmed from the nineteenth-century advances in geology.⁹⁴ By the early part of the century, the observations of the French paleontologist Georges Cuvier (1769-1832) led most naturalists to accept not only the extinction of ancient species but also the idea that the sequence of geological formations corresponded to vast periods in the earth's history.⁹⁵ The question soon became not if the earth had experienced great changes in its history, but how the changes had occurred. Debates between catastrophism and uniformitarianism dominated much of the century. Catastrophists, such as Cuvier, saw the transitions between the successive ages of the earth as abrupt and caused by catastrophic events. Uniformitarians, such as James Hutton and Charles Lyell, argued that past transitions took place at the same rate as current transitions, gradually over long periods of time. Uniformitarians ultimately proved victorious, but catastrophism remained a viable view until the discovery of radioactivity in 1896.

Meanwhile, the second half of the nineteenth century witnessed the development of the 'new biology,' the result of a concerted effort to transform biology into a science with the prestige of physics by making the study of function the central concern.⁹⁶ During this period, life sciences emerged from the study of anatomy and physiology, moved from the museum to the university laboratory, and rejected the limits of

⁹⁴Bowler, *Making Modern Science*, 103.

⁹⁵Bowler, *Making Modern Science*, 114.

⁹⁶Bowler, *Making Modern Science*, 165.

morphology (the study of form). Major contributions first came in Germany and France. In the 1870s, T. H. Huxley became the leading British figure as he sought to understand the function of living organisms. Developments in chemistry during the previous century and improvements to the microscope resulted in new understandings of the cell and revolutionized views of the nature of life. The idea that the cells formed the fundamental unit of life and that they were created only by the division of existing cells helped undermine ideas of spontaneous generation. New experimental methods allowed for advances in the study of function. Most important was the controversial use of vivisection, controlled experiments on living bodies, which allowed for fuller understandings of biological operations. The discovery of the electrical nature of nervous activity and the germ theory of disease were equally significant. The last of these transformed medicine and helped save countless lives.⁹⁷ One of the most celebrated results of these developments was the rejection of vitalism, the view that life is the product of something other than purely physical forces.

Other important developments at the end of the nineteenth century and shortly thereafter took place in the fields of genetics, ecology, and astronomy. In genetics the rediscovery in 1900 of Mendel's experiments not only helped vindicate Darwin but also led to the emergence of molecular biology by the middle of the century. Watson and Crick's explanation of DNA in 1953 was the most famous part of the story. A new focus on the relationship between organisms and their environment at the end of the nineteenth century helped create the discipline of ecology. Although the discipline was rooted in the early part of the century (the German Darwinist Ernst Haeckel had coined the term

⁹⁷Brian L. Silver, *The Ascent of Science* (New York and Oxford: Oxford University Press, 1998), 126.

“oecology” in 1866), the difficulty of applying the experimental method to the study of how species interacted with their environment slowed its professional and academic recognition.⁹⁸ Only as pressing environmental challenges became more apparent in the middle of the twentieth century did ecology gain widespread attention. In astronomy, key developments in photography and spectroscopy gave astronomers important tools for interpreting the night’s sky. With the opening of facilities such as the esteemed Mount Wilson Observatory in 1904, the discipline was poised for dramatic discoveries. By the 1930s cosmologists agreed on the basic size and shape of the universe and, thanks to renowned researchers such as Edwin Hubble (1889-1953), had begun to understand it as a dynamic and ever expanding system.⁹⁹

Of all the disciplines, perhaps none experienced changes as significant as physics. Unexpected discoveries at the end of the nineteenth century brought new questions that challenged basic understandings of the universe and reached beyond science into philosophy and religion. Many of the changes stemmed from attempts to understand the structure of the atom. In 1895, German physicist Wilhelm Röntgen (1845-1923) discovered X-rays and was subsequently awarded the first Nobel Prize in physics. At the Cavendish Laboratories two years later, J. J. Thomson (1856-1940) announced the discovery of the electron and proved that particles existed that were a thousand times smaller than the smallest atom. The discovery of radioactivity in 1898 ultimately led to the radical understanding that some elements produced their own energy and allowed physicists to begin unlocking the secrets of the atom’s interior and to rethink the source

⁹⁸Bowler, *Making Modern Science*, 220-226.

⁹⁹Bowler, *Making Modern Science*, 279-286.

of the sun's energy. These discoveries helped validate the view that atoms were like miniature solar systems, with particles orbiting a nucleus, and posed a series of problems that questioned classical (Newtonian) physics. In 1905 and 1906 Einstein's theories of special and general relativity and his explanation that the velocity of light was constant in all frames of reference established new views of space, time, and mass and helped disprove theories of the ether. In 1905, Einstein also explained how light, then understood as a wave, occasionally behaved like a particle. Science had not experienced as rapid a succession of major ideas since Newton's seminal period of work in 1666 and 1667.¹⁰⁰ When newspapers reported that British astronomer Arthur Eddington had confirmed the general theory of relativity in 1919, Einstein became a household name. After his theories of light were validated in 1921, science could no longer maintain intuitive distinctions between particulate matter and wave-like light or defend traditional deterministic theories. In the meantime, another group of scientists were delving into the smallest entities. Bohr, Schrödinger, and Heisenberg struggled to understand the mechanics of quantum theories and in 1927 established the uncertainty principles, the idea that at the quantum level it was impossible to predict the outcome of any given state of affairs because a particular state of affairs cannot fully be known. Not all accepted such theories. Einstein was among the most famous dissidents. Discoveries continued during the 1930s and the desire to develop nuclear weapons during WWII accelerated research. The success achieved demanded a new level of awe at science's potential. After the war, physics became increasingly esoteric as the desire to fully understand the atom involved theorizing elementary particles even smaller than protons, neutrons, and electrons.

¹⁰⁰Silver, *The Ascent of Science*, 361.

The dramatic advances that had occurred since the close of the nineteenth century thus helped propel science as a major force in popular thought. England and America were becoming increasingly dependent upon scientific developments, while researchers were allowed greater liberty in establishing and defining truth, a development not missed by the scientists themselves.

Sir William Dampier, a Fellow of the Royal Society (FRS), expressed the views of many when he declared that “the vast and imposing structure of modern science is perhaps the greatest triumph of the human mind.”¹⁰¹ Even the reality of war and the realization that science helped inflict previously unthinkable harm did little to curb enthusiasm regarding its importance and potential. Figures such as the Marxist physicist J. D. Bernal (1901-1971) and the embryologist-turned-philosopher C. H. Waddington (1905-1975) recognized that although scientific advance did not necessarily entail social progress, it could still be trusted to play a key role in curing society’s ills.¹⁰² In his *Social Function of Science* (1939) Bernal attempted to investigate the extent to which scientists were responsible for the state of the world and to suggest possible steps that might lead to a “fruitful and not to a destructive utilization of science.”¹⁰³ Perhaps the most dramatic example of scientific faith and commitment was the British Association for the Advancement of Science conference on science and world order held at the Royal Institution in London in 1941. Confronted by the immediate realities of World War II, scientists from twenty-two nations met to ask what science should do to begin healing the

¹⁰¹William Cecil Dampier, *A History of Science and its Relations with Philosophy & Religion*. (Cambridge Eng. University Press; New York: Macmillan Co.,1931), vii.

¹⁰²J. D. Bernal, *The Social Function of Science*, Cambridge: M.I.T. Press, 1967 (1939); C. H. Waddington, *The Scientific Attitude* (Harmondsworth, Middlesex: Penguin Books, 1941).

¹⁰³Bernal, *The Social Function of Science*, xiii.

world once the fighting had ended. In his report on the events of the meeting, J. G. Crowther boldly stated, “If democracy does not learn to seek guidance from, and utilize, science, then it will not survive.”¹⁰⁴ Science, which had only recently emerged from the shadows of other disciplines, was increasingly recognized as essential for prosperity in the future.¹⁰⁵

Notions of scientific prestige were affirmed by many of the leading philosophers of the day and by none more so than those associated with analytic philosophy. The success science demonstrated in discovering truths about the natural world led some of the leading English-speaking philosophers, many of whom were at Cambridge, to define the philosophical quest for truth as a quest for clarity. Figures such as Bertrand Russell (1872-1970) and Ludwig Wittgenstein (1889-1951) influenced a generation who came to see their task as verbal precision rather than discovery.¹⁰⁶ The goal was to deconstruct language and problems into their most basic parts in order to analyze them and understand the complex entities they formed. These ideas were radically advanced by the logical positivists who claimed that anything that could not be verified empirically was metaphysics and by definition, in the words of A. J. Ayer (1910-1989), the leading figure of logical positivism in the English language, “neither true nor false but literally senseless.”¹⁰⁷ “The philosopher,” he wrote, “is not in a position to furnish speculative truths, which would . . . compete with the hypotheses of science,” but “is to clarify the

¹⁰⁴J. G. Crowther, *Science and World Order* (Harmondsworth, England: Penguin Books, 1942), 18.

¹⁰⁵ Crowther, *Science and World Order*, 18-25.

¹⁰⁶I.e., John Wisdom, *Problems of Mind and Matter* (Cambridge: Cambridge University Press, 1934), 1-2.

¹⁰⁷A. J. Ayer, *Language, Truth and Logic*, (New York: Dover, 1936), 31.

propositions of science by exhibiting their logical relationships” and to “define the symbols which occur in them.”¹⁰⁸ Such was the level of deference offered to science.

Still, the scientific establishment was not uniformly materialistic in its view of the world. Some, such as Arthur Eddington, (1882-1944), Plumian Professor of Astronomy, Cambridge University, maintained a robust Christian faith and inspired a generation of younger evangelical scientists to do the same.¹⁰⁹ Others, such as William Dampier and J. C. Smuts (1870-1950), South African statesman who was elected president of the BA in 1931, offered at least non-reductionist views of the material world. Nevertheless, there was a prevailing naturalistic mood among many. When C. A. Coulson went up to Cambridge in 1928, he later recalled, “the divorce between science and religion was almost absolute.”¹¹⁰ A growing number of prominent figures even claimed that religion itself was product of the natural world. Julian Huxley, one of the most popular humanist thinkers of the day, could hardly have been clearer when he declared: “God is an inevitable product of biological evolution, arising when the human type of mind first came into being, and taking shape and form as a definite God or Gods.”¹¹¹ Sigmund Freud’s (1856-1939) then recently published *Future of an Illusion* (1927), which described faith as a coping mechanism that should be discarded by mature individuals and societies, brought what some saw as a devastating critique of Christianity. British embryologist C. H. Waddington (1905-1975), drawing heavily on a Freudian view of

¹⁰⁸ Ayer, *Language, Truth and Logic*, 31-32.

¹⁰⁹ C. A. Coulson, *Science and the Idea of God: The Eleventh Arthur Stanley Eddington Memorial Lecture 21 April 1958* (London and New York: Cambridge University Press, 1958), 1-2.

¹¹⁰ Coulson, *Science and the Idea of God*, 2.

¹¹¹ Julian Huxley, “Rationalism and Idea of God,” *Essays of a Biologist* (London: Chatto & Windus, 1923), 208.

religion, even claimed that science had reached the point at which it could function as a religion, and do a better job. “Science is not ethically neutral,” he argued, “It has, in fact, something to say about the most important questions of the world, and it could therefore be a candidate for the position of super-ego.”¹¹² He continued:

One might have a scientific society, officially based on the practice of empirical reason; but . . . the other side of man’s nature would have to be satisfied by a belief in some authority, a thrill for some romance. We have now reached the conclusion that science can also provide their thrill and this authority. Science by itself is able to provide mankind with a way of life which is, firstly self-consistent and harmonious, and, secondly, free for the exercise of that objective reason on which our material progress depends. So far as I can see, the scientific attitude of mind is the only one which is, at the present day, adequate in both these respects.¹¹³

Science, in other words, could make traditional religion irrelevant by dispelling its false views while still providing its psychological benefits.

Conclusion

Such was the context in which the American Scientific Affiliation and Research Scientists’ Christian Fellowship were founded. Science had achieved considerable cultural prestige and was regarded more than ever as the key to social and material advancement. Weighty scientific authorities seemed to undermine the Christian worldview. Darwinism, which many saw as representing the materialistic science of the Victorian period, was reemerging, while alternative theories, especially Lamarckism, were disproven. Liberal theology seemed to concede to modern attitudes on fundamental points of doctrine. Increasing numbers of conservatives abandoned the attempt to reconcile science and religion or were busy establishing their own scientific views in

¹¹²Waddington, *The Scientific Attitude*, 169.

¹¹³ Waddington, *The Scientific Attitude*, 169-70.

order to preserve the biblical narrative and their convictions about the Image of God and the fall. Conservative reactions against evolution were encouraged by cultural rejection of progressivism. Thus by 1940, the atmosphere seemed dramatically less conducive to science and religion dialogue.

CHAPTER THREE

The American Scientific Affiliation: 1940s to 1965

It is not our job to start a new reformation and move fundamentalism out of its inclination to think with its emotions. In our approach to the common people we can never take an attitude that science-says-this-is-so; you-can-take-it-or-leave-it. . . . 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 Scofield's notes and Ussher's chronology.

- William A. Houghton, 1945¹

Not everything labeled "commitment to Christ" is truly such. Pseudo-Christian commitment to an earthly organizational structure (however "heavenly" the name), a theological system, a legalistic moral code, or a narrow and specific interpretation of "science and the Scriptures" takes away the glorious liberty of the children of God, replacing the bondage of "non-religious" commitments with a new slavery.

- David O. Moberg, 1964²

The 1940s was a transformational period for American evangelicalism. While many fundamentalists maintained the counter-cultural habits acquired over the previous decades, others had become disenchanted with the group's direction and began charting a new course. A rebirth of evangelical biblical scholarship and the emergence of a new generation of leaders and institutions paved the way for many of these developments.³ In 1942, the National Association of Evangelicals was founded by a group of thinkers who

¹William A. Houghton to Irwin A. Moon and F. Alton Everest, March 8, 1945, ASA Papers, quoted in Mark A. Kalthoff, "New Evangelical Engagement with Science: The American Scientific Affiliation, Origin to 1963," PhD diss. (Indiana University, 1998), 300-301.

²David O. Moberg, "Expanding Horizons In A Shrinking World" *JASA* 16, no. 1 (March 1964): 2-3.

³Mark A. Noll, *Between Faith and Criticism: Evangelicals, Scholarship, and the Bible in America* (San Francisco: Harper and Row Publishers, 1986); A Donald MacLeod, *C. Stacey Woods and the Evangelical Rediscovery of the University* (Downers Grove, IL: InterVarsity Press, 2007).

hoped to unite and inspire evangelicals to engage the secular world.⁴ Three years later Youth for Christ was organized. The group soon recruited Billy Graham, the national spokesman for moderate evangelicalism, as its first fulltime evangelist. In 1947 came Fuller Theological Seminary, an institution shaped by progressive evangelical luminaries including Harold J. Ockenga, Wilbur Smith, Carl F. H. Henry, George Eldon Ladd, and Paul K. Jewett.⁵ Events and organizations such as these united those who refused to remain on fundamentalism's cultural and intellectual island and transformed American evangelicalism from an isolated, introspective subculture to a group increasingly willing to engage the broader culture.

In the midst of this seminal period there arose the American Scientific Affiliation, a group of professional scientists determined to reconcile science and conservative Christianity who eventually helped chart a new direction for the evangelical engagement with science. At the beginning, the group assumed familiar evangelical views of modern geology and the theory of evolution. Within two decades, their views underwent a remarkable transformation. During the 1940s the primary issue was geology. In the 1950s it was evolution. By the early 1960s the group had all but redefined itself, becoming one of the most appreciated and most abhorred groups within American evangelicalism.

⁴Joel Carpenter, *Revive Us Again: The Reawakening of American Fundamentalism* (New York and Oxford: Oxford University Press, 1997), 147-152; "The Renewal of American Fundamentalism, 1930-1945" PhD Diss. (John Hopkins University, 1984), 185.

⁵George Marsden, *Reforming Fundamentalism* (Grand Rapids, Michigan: William B. Eerdmans Publishing Company, 1987).

Founding the American Scientific Affiliation

The American Scientific Affiliation (ASA) began in early September 1941, when five conservative evangelical scientists accepted the invitation of William Haughton, President of Moody Bible Institute, to discuss the formation of a “Society for the Correlation of Science and the Bible.”⁶ Irwin A. Moon (1907-1986), a scientifically minded pastor and preacher who had gained attention for his memorable “Sermons from Science,” originally proposed the group in response to his growing concern for the faith of Christian young people pursuing scientific careers.⁷ By 1940, Moon convinced Haughton and F. Alton Everest, a conservative Baptist electrical engineer at Oregon State College who became the “the star” of the ASA for more than two decades,⁸ that a group of Christian scientists (not Christian Scientists) could do much to buttress the faith of Christian students of science. Houghton added further that such a group would also help scientifically ignorant pastors, Sunday-school teachers, and theology faculty forced to deal with the growing scientific challenges they faced. In June 1941, with nearly a year of planning and the financial backing of Henry Parson Crowell, patron of Moody Bible Institute, Haughton invited a select group of scientists to help organize an annual conference intended to address the most pressing scientific issues facing the church.⁹

⁶F. Alton Everest to Irwin Moon, March 29, 1941 in introduction to *Creation and Evolution in the Early American Scientific Affiliation*, ed. Mark A. Kalthoff (New York and London: Garland Publishing, Inc., 1995), xi.

⁷J. W. Hass, Jr., “Irwin A. Moon, F. Alton Everest and Will H. Houghton: Early Links Between the Moody Bible Institute and the American Scientific Affiliation” *PSCF* 43, no. 4 (December 1991): 249-258.

⁸V. Elving Anderson, interview by author, August 1, 2009.

⁹Minutes of the American Scientific Affiliation organizational meeting (Moody Bible Institute, September 2-5, 1941), ASA Papers, Box 1; cf., Kalthoff, “New Evangelical Engagement,” 160-191.

Five men accepted Houghton's invitation. Four were current professors – Everest (electrical engineering degrees from Oregon State and Stanford) at Oregon State College, John P. Van Haitzma (Ph.D., University of Michigan, natural sciences) at the Christian Reformed Calvin College, Peter W. Stoner (University of California, Berkeley, mathematics)¹⁰ at Pasadena City College, and Russell D. Sturgis (Ph.D. University of Pennsylvania, physical chemistry) at Ursinus College. The fifth, Irving A. Cowperthwaite (Ph.D., University of Columbia, physical chemistry) had been on the faculty of Columbia University until 1937, when he entered the private sector. These five men made up what became the Executive Council of the ASA, elected Everest their chairman and Cowperthwaite secretary, and proved eager for the work ahead.¹¹

The ASA was not the first American organization founded to defend the church from the perceived threat of modern science. The Religion and Science Association and the Deluge Geology society, both inspired by flood geologist George McCready Price, had been founded in the 1930s. In some ways the ASA followed in the footsteps of those that had gone before. The organization's original creed both affirmed the inspiration and inerrancy of the Bible and rejected the possibility of contradictions between the testimony of Scripture and the "real facts of science."¹² Its concern for the spiritual health of the

¹⁰Stoner completed doctoral coursework and a dissertation at UC Berkeley, but due to an administrative error was not granted a Ph.D. because his dissertation (which had been approved) was written in his minor field of astronomy rather than in mathematics (Kalthoff, "New Evangelical Engagement," 197).

¹¹Minutes of the American Scientific Affiliation organizational meeting (Moody Bible Institute, September 2-5, 1941), ASA Papers, Box 1.

¹²American Scientific Affiliation, *The Story of the American Scientific Affiliation* (1942), in *Creation and Evolution*, 9.

growing number of evangelical college and university students was largely an extension of the anxiety for high school students that had dominated the previous generation.¹³

Yet the ASA also distinguished itself from its predecessors. First, from the beginning the leaders showed concern with the level of scientific knowledge found in the churches and the potential damage that resulted from an “unscientific defense of the Bible.”¹⁴ Although some ministers accurately used scientific illustrations in their preaching, Everest acknowledged, others “do violence to the thinking of any informed persons” by employing ignorant scientific reasoning: “To any college freshman a barrier [to faith] is raised, which grows higher and higher with each succeeding similar incident.”¹⁵ Stoner often complained of the “pitiable state” of the church’s literature on the scientific accuracy of the Bible.¹⁶ These concerns set the tone for the organization’s establishment. The ASA Constitution required potential members not only to affirm the creed, but also demonstrate “noteworthy achievement” in original scientific research. Even Moon and Houghton, whose vision inspired the organization, never became official members. (Room was made for those whose theological accomplishments could help further the group’s aims.) The original committee also outlined goals for promoting a more reputable view of relationship between Christianity and science: They planned to produce a text that would offer an academically sound Christian response to the scientific challenges students encountered during their university education.¹⁷ They proposed a

¹³ American Scientific Affiliation, *The Story of the American Scientific Affiliation*, 3.

¹⁴ *The Story of the American Scientific Affiliation*, 4.

¹⁵ *The Story of the American Scientific Affiliation*, 4.

¹⁶ Peter W. Stoner, “Faith Lost at College,” *Moody Monthly* (August 1944): 660-661.

¹⁷ *The Story of the American Scientific Affiliation*, 5.

procedure for reviewing science related works by Christian publishers in order to help protect the intellectual image of the church and “eliminate much of the loose parading of science for imagined gospel gains,” and to offer summer courses for Christian workers and educators to strengthen their scientific knowledge.¹⁸

Second, as the quotation by Houghton at the beginning of this chapter suggests, the ASA founders were not compelled by young earth creationism. Evolution may have been suspect, but flood geology was bad science based upon unnecessary interpretations of Genesis. Thus the ASA sided with the large number of evangelical thinkers who had little problem affirming an ancient earth.

Third, the ASA was not founded as an antievolutionary organization. Although “all five founders were thoroughgoing anti-evolutionists,” as Cowperthwaite later recalled, the group refused to define itself as anti anything.¹⁹ As historians Mark Kalthoff and D. G. Hart have noted, this is one of the fascinating and remarkable parts of the story. This peculiar group of fundamentalists created an organization that refused to demand an antievolutionary view of creation and a paradox that resulted in considerable confusion among those who attempted to identify the group as friend or foe.²⁰

The ASA began making considerable progress after World War II. Annual meetings began in 1946. By 1950, two monographs were published, *Christian Theism and the Empirical Sciences* (1947) and *Creation and Evolution* (1950). In 1949 appeared the first volume of the *Journal of the American Scientific Affiliation (JASA)*, a forum for

¹⁸ *The Story of the American Scientific Affiliation*, 5

¹⁹ Cowperthwaite, interview by Kalthoff in *Creation and Evolution*, xvii.

²⁰ Kalthoff, *Evolution and Creation*, xviii; D.G. Hart, “The Fundamentalist Origins of the American Scientific Affiliation,” *Perspectives on Science and Christian Faith*, 43, no. 4 (December 1991): 238.

papers and news coming out of the annual conventions that attempted to reflect the diversity of disciplines and views of ASA members. Beginning in June 1953, the journal began regular sections on topics such as biology, sociology, philosophy, geology, archaeology, and astronomy so that members would be aware of developments beyond those covered in articles. This list suggests the variety of research areas the ASA accepted into their scientific organizations and the influence of German higher education in America more broadly. Membership grew slowly in the earliest years, with numbers increasing from fifty in 1944 to seventy-three in 1947 and reaching one-hundred-thirty-four by 1950. Aggressive recruitment brought the total to more than five-hundred by 1953, and more than 1,100 by 1963.²¹ The ASA drew from all sections of the country. By 1965, twenty-eight percent of members were from the Northeast, another twenty-eight percent from the Midwest. Twenty-four percent hailed from the West. Fourteen percent were from the South, with international members (all from Canada) forming six percent of the organization. Reflecting a more general pattern within the sciences, ninety-seven percent of the members were men.²²

Thus, from the outset the ASA consisted of evangelical scientists who desired to demonstrate the harmony between science and Christian faith. Two criteria were seen as equally necessary for the group's success. The ASA had to remain faithful to the Bible, on the one hand, and achieve a level of professionalism lacking in similar organizations, on the other. Commitment to the former was demonstrated in the ASA's creed.

²¹F. Alton Everest, *The American Scientific Affiliation: Its Growth and Early Development* (Ipswich, MA: The American Scientific Affiliation, 2010), 32-33, 150.

²²Geographic and gender analysis is based on a database provided to me by Randall Isaac, current ASA executive director.

Commitment to the latter was shown by the founders' response to the inadequate scientific reasoning they found in the churches, the goals put forth to remedy the situation, and the professional credentials required for membership.

Staking Their Ground

The ASA's commitment to scientific integrity was challenged almost immediately by the flood geologists. The disregard for young-earth creationism held by the founders of the ASA was evident as early as 1942, when Everest and Moon resisted invitations to join forces with the Price's Deluge Geological Society. Wary of the group's Seventh Day Adventist affiliations and its attraction of unscientific audiences, Everest and Moon saw the DGS as detrimental to the ASA's goals and reputation.²³ Not long afterwards, however, flood geologists became impossible to ignore.

Dudley Joseph Whitney (1883-1964) was a California rancher and farm-journal editor with a B.S. from the University of California's school of agriculture, a former member of the ephemeral Religion and Science Association, and one of Price's most committed followers.²⁴ In the early forties, he used the *Bulletin of Deluge Geology and Related Sciences* to expound his denunciation of modern geology. Sometime during this period, Whitney became determined to unite conservative evangelicals around a single interpretation of Genesis. In January 1944, he penned "A Tentative Creed of Creation" that read:

I believe that the act of creation was essentially different from the operations of matter after creation. . . .

²³Kalthoff, *New Evangelical Engagement*, 241-246; See also Numbers, *The Creationists: From Scientific Creationism to Intelligent Design*, expanded edition (Cambridge, MA and London: Harvard University Press, 2006), 182-183.

²⁴See Kalthoff, "New Evangelical Engagement," 398-409; Numbers, *Creationists*, 120-136.

I believe in the Genesis account of creation . . . , and I believe that this account should be taken in a direct and natural way. Without making any decision as to the time of origin of the sun and of the solar system as a whole, I believe that this was far more recent than astronomers and geologists assert, and I believe that the earth was ordered as the home for plants, animals and man by divine act in, evidently, six literal days and that such time of creation was not much earlier than 4,004 B.C.²⁵

Whitney's creed summarized well the central tenets of the flood geologists, denying both the conclusions of modern science and the views of those who accepted the gap or day-age interpretations of Genesis, and conveyed what a growing number of fundamentalists saw as essential doctrines for Bible-believing Christians.²⁶

Whitney soon sent a copy of his creed to Everest and asked for help in arranging a debate with a secular geologist in order to reveal the fallacies of mainstream science. Skeptical of both Whitney's ideas and tactics, Everest denied the request and hoped a gentle dismissal would end the conversation. Whitney was not easily dissuaded, however. After further and more forceful propositions, Everest decided to use the challenges to energize the ASA's own thinking on the subject by arranging a meeting of ASA members to discuss the issues.

The resulting Symposium on the Age of the Earth by Radioactive Methods, held in Stoner's Pasadena, California, home in 1947, became an important statement of the group's unwillingness to act as a bastion of fundamentalist science and evinced its demand for professionalism. Of the six ASA members who attended—including Everest, Stoner, and Bernard Ramm (a theologian whose influence in the ASA will be discussed

²⁵Dudley Joseph Whitney, "A Tentative Creed of Creation," January 1944, in ASA Papers, Box 5.

²⁶Ron L. Numbers, "Creating Creationism: Meanings and Uses since the Age of Agassiz," in *Evangelicals and Science in Historical Perspective*, eds., David Livingstone, D.G. Hart, Mark Noll (Oxford and New York: Oxford University Press, 1999) 234-243. Ron Numbers traces the use of the term creationism and shows that following the popularity of George McCready Price's flood geology, figures such as Dudley Joseph Whitney worked rather successfully to equate the idea of creationism with antievolution. Numbers notes that the ASA was one of the key groups to fight this trend.

further below)—only Walter Lammerts, an avowed proponent of Price’s scriptural geology, argued that the flood was responsible for geological manifestations.²⁷ The symposium successfully demonstrated the ASA’s strong aversion towards flood geology. Yet it also revealed a weakness in the group’s ability to legitimately accomplish Everest’s goal of casting aside Price’s views once and for all; none of the participants held a degree in geology. This problem was alleviated, however, by the involvement of two rising young geologists, Edwin Gedney and J. Lawrence Kulp.

Edwin Gedney received an undergraduate degree in philosophy (1926) and a master’s in science from Brown University (1928) before earning an MA from Harvard (1930). He served as a professor of natural sciences at Gordon College of Theology and Missions (Massachusetts) from 1934 to 1962 and earned a reputation as a vocal critic of fundamentalist science. He became involved with the ASA through Everest, who asked him to provide a chapter on geology for *Modern Science and Christian Faith* (1948), the handbook on science and faith the ASA had been anticipating since the group’s founding.

Gedney’s chapter in *Modern Science* was a clear statement against Price’s views. It examined the strengths and weaknesses of the most popular interpretations of Genesis and attempted to make sense of biblical testimony in light of modern geology. He challenged his readers to be discerning of the issues, avoiding the temptation to believe every new pronouncement from science as well as assuming the “ostrich-like attitude of some who deliberately close their eyes to new truth.”²⁸ Although the Bible offered

²⁷American Scientific Affiliation, “A Symposium on the Age of the Earth” (1948), in *Creation and Evolution*, 162-183; cf., Kalthoff “New Evangelical Engagement,” 402-404.

²⁸Gedney, “Geology and the Bible,” *Modern Science and Christian Faith: A Symposium on the Relationship of the Bible to Modern Science*, ed. F. Alton Everest (Wheaton, IL: Van Kampen Press, 1948) 71-72.

insight into the natural world, he insisted, efforts to place it ahead of science in every area of knowledge was futile. Over and against theistic evolution and the gap theory (he barely referenced flood geology) Gedney argued for the day-age theory, what he called Progressive Creation. Through this view, he concluded: “The Bible may be regarded as a complement to geology by supplying the comprehensive plan and causation. Geology serves as a complement to the Bible by providing a wealth of detail to amplify the outline of Genesis.”²⁹ This, he insisted, made the most sense of both “geological facts and . . . recent geological speculation where facts are yet to be found.”³⁰ Gedney’s willingness to recognize the validity of “speculation” marked a clear departure from the rhetoric of most conservative evangelicals at the time. Contrary to those who demanded science be limited to ‘real and verifiable facts’ Gedney acknowledged the validity of modern scientific methodology. He thus supported the ASA’s attempt to distance itself from flood geology and its desire for scientific integrity and the espousal of modern science.

Influential as Gedney was, however, J. Lawrence Kulp was even more so. Remembered as “a man for the times” and one able to lead willing evangelicals out of fundamentalism, Larry Kulp joined the ASA in 1945, but remained quiet during his first years in the organization.³¹ He completed an undergraduate degree at Wheaton before earning a PhD in physical chemistry from Princeton in 1944 and pursuing a post-doctorate in geology from Columbia. He became a pioneer in the field of radiometric dating and was one of the first nationally recognized scientists in the ASA.³²

²⁹Gedney, “Geology and the Bible,” 70.

³⁰Gedney, “Geology and the Bible,” 67.

³¹J. W. Haas and Joseph Spradley interviews by author August 1, 2009.

³²For a biographical sketch see Kalthoff, “New Evangelical Engagement,” 428-445.

Kulp developed critical views of fundamentalist hermeneutics during his undergraduate days at Wheaton and gained a profound appreciation for scientific method during his graduate work. As a result, he consistently affirmed the need for the ASA to disavow fundamentalist anti-intellectualism. For one of his first tasks, he served as editor for “A Symposium on the ‘Age of the Earth,’” a compilation of the papers from the 1947 conference. Kulp provided an introduction, seventh paper, and bibliography, all of which adduced the validity of modern geological conclusions about the earth’s age. His liberal and conspicuous edits did little to hide his disregard for flood geology. As he noted in his introduction, the papers were “freely altered . . . in the interest of integration and accuracy.”³³ Predictably, Lammerts’s contribution required considerable attention.³⁴ The booklet never received wide circulation and was largely ignored, even within the ASA, but its message helped define the group’s unofficial position and it established Kulp as the model of professionalism Everest desired.

Kulp’s next task for the ASA was to serve as a scientific critic for a revised edition of *Modern Science and Christian Faith*.³⁵ The original 1948 edition included a number of strong antievolutionary views. Notable was the chapter on anthropology, which ominously began by describing the discipline as “mothered by materialism and sired by evolution” in order to “[liberate] the minds of men from ignorance,

³³J. Lawrence Kulp, introduction to “A Symposium on the ‘Age of the Earth,’” ed. Kulp, in *Creation and Evolution*, 164; cf. Kalthoff, “New Evangelical Engagement,” 449-450.

³⁴See W. E. Lammerts, “Critique of Radioactivity Estimates of Age of the Earth” in “A Symposium on the ‘Age of the Earth,’” in *Creation and Evolution*, 172-175.

³⁵F. Alton Everest, ed., *Modern Science and Christian Faith* (Wheaton, IL: Van Kampen Press, 1950), v-vi; *Modern Science and Christian Faith* received a second printing before the revision.

[superstition], and religious bigotry.”³⁶ It went on to declare that Christians must be “non-evolutionist” and able to offer a “positive . . . non-evolutionary” cosmogony.³⁷ The revised *Modern Science* (1950) reflected a more critical engagement with scientific issues. Gedney added a section to his chapter on geology that addressed the geological dating of the earth and reliability of radiometric dating. He also included much of Kulp’s bibliography from the 1947 booklet. The chapter on biology, which was written by creationists William Tinkle and Walter Lammerts in both editions and continued to reject evolution, was expanded to offer more technical material on genetics. Perhaps most important Kulp arranged for two students from Columbia’s graduate program to provide a new chapter on anthropology. The ninety-seven-page essay that William A. Smalley and Marie Fetzer contributed, nearly a third of the book, became required reading for anthropology students at Wheaton for most of the next three decades.³⁸

Kulp became a valued spokesman in the ASA’s efforts against fundamentalist science. While the revision of *Modern Science* was underway, Everest sought his help again in permanently dismantling Price’s views. “It would be most helpful,” Everest wrote to Kulp while planning the 1948 convention, “if you would present a comprehensive destruction of Flood Geology.”³⁹ Kulp was eager to oblige, but this issue would have to wait for he had discovered a topic that he was sure was more important to the ASA – the scientific evidence of the antiquity of the human race.

³⁶George R. Horner, “A Christian Evaluation of Physical Anthropology,” *Modern Science and Christian Faith* (1948), ed. F. Alton Everest, 197.

³⁷George R. Horner, “A Christian Evaluation of Physical Anthropology,” 204.

³⁸Kalthoff, “New Evangelical Engagement,” 388.

³⁹Everest to Kulp, November 27, 1947 in Kalthoff, “New Evangelical Engagement,” 459.

The program for the 1948 conference was arranged so that Kulp's "Antiquity of Hominoid Fossils" received prominent attention. In it he argued that contrary to fundamentalist detractors, human-like creatures had inhabited the earth for at least several tens of thousands of years.⁴⁰ Although this information was not "disastrous to a strong conservative apologetic," he insisted, it did require a new understanding of Genesis.⁴¹ The resistance came quickly and was led by the Calvin College botanist Edwin Y. Monsma (1894-1972), the conference's host and a member of the ASA executive council. Echoing longstanding fundamentalist accusations, Monsma objected to Kulp's paper, contending that theories based upon claims of uniformity were immediately suspect since they were predicated on assumptions rather than fact.⁴² His own paper, "Some Presuppositions in Evolutionary Thinking," attempted a systematic refutation of modern geology, proclaiming that only Price and his followers were willing to take both the words of Scripture and the facts of nature into account.⁴³

Kulp did not pass up the opportunity to best Monsma's claims, but he first wanted to assure those gathered of his Christian faith by offering a personal testimony:

Over the last fifty years there have been practically no Christians in the field of geology. I was trained as a chemist before I felt that the Lord wanted me to go into geology. I went into it very critically, and I am still overly critical of all information that I receive. However, most of us do not understand enough

⁴⁰Numbers, *Creationists*, 187; Kalthoff, "New Evangelical Engagement," 462.

⁴¹Abstract for Kulp's paper, in Mark A. Kalthoff "Harmonious Dissonance of Evangelical Scientists: Rhetoric and Reality in the Early Decades of the American Scientific Affiliation," *PSCF* 60, no. 4 (December 1991): n.41; the paper was not included in the conference proceedings.

⁴²"Discussion on Paper by Dr. Kulp." In Proceedings of the Third Annual Convention of the American Scientific Affiliation, in "New Evangelical Engagement," 462

⁴³E. Y. Monsma, "Some Presuppositions in Evolutionary Thinking," *JASA* 1, no. 3 (June 1949): 15-19.

geology to appreciate the geologist's method of securing geological data. He is not one millionth the philosopher that he is usually given credit for being.⁴⁴

He then, after requesting the board and some chalk, as though preparing a lecture of his own, continued with a critique of Monsma's argument that consumed six single spaced pages in the *JASA*. The young geologist, of course, failed to impress all those gathered. One respondent affirmed Dr. Monsma's presentation as "the most sound and fundamental one that I have ever seen presented in this organization, because it is based upon the word of God."⁴⁵ Still, it soon became clear that most within the ASA sided with Kulp and his appreciation for science. Later that year, when Monsma's tenure on the executive council expired, Kulp was elected to replace him.⁴⁶

The apogee of the geology controversy, at least symbolically, came the following year when Kulp's long awaited critique of Price's flood geology was offered, in absentia, at the 1949 annual convention. With the seventy-nine-year-old Price seated in the front row of the audience, the stage was set for a dramatic confrontation.⁴⁷ The paper began by assailing the proponents of flood geology as much as the theory itself. Taking aim at the group's most prominent figures, it described them as little more than ideologues whose insufficient training and dearth of experience made them ill-suited experts on the issues: "The authors of the articles in the flood geology bulletins include two M.D.'s, one Ph.D. chemist . . . , and the others who list no degrees. The other prominent writer . . . has a

⁴⁴Kulp's response to Monsma in "Discussion of Monsma's Paper," *JASA* 1:3 (June 1949): 19-30, 20-21.

⁴⁵Dr. Gathercoal's response in "Discussion of Monsma's Paper," 26.

⁴⁶Numbers, *Creationists*, 188.

⁴⁷Kalthoff, "New Evangelical Engagement," 469-475.

master's degree in biology. None of these men have done any geological field work."⁴⁸ Kulp went on to list four basic errors in Price's views: confusion from equating geology and evolution, an inability to offer a mechanism other than the flood for the evidence of evolution, bad science among flood geologists in general, and the use of outdated research and theories.⁴⁹ He then outlined the basic concepts of modern geology and concluded his fifteen-single-spaced-page refutation with three points: flood geology was "entirely inadequate to explain the observed data in geology," the conclusions of geology did not prohibit acceptance of the "plenary inspiration of the scriptures," and flood geology brought "considerable harm to the strong propagation of the gospel among educated people."⁵⁰

Those hoping for a passionate rebuttal from Price were surely disappointed. The patriarch of flood geology simply admitted later that the paper included arguments in need of further study.⁵¹ Kulp, for now, could claim victory. In the months that followed, however, it became clear that the issue would not be so quickly settled. Soon thereafter the ASA learned that despite Everest's hopes the subject could not be easily, if ever, closed. By 1950, Whitney began to produce a short series of open letters written under the auspices of the Christian Evidence League in order "to indict the members of the American Scientific Affiliation for setting forth an origin and history of the earth which is in conflict with the Genesis record . . . [and ignores] an abundance of evidence which

⁴⁸J. Lawrence Kulp, "Deluge Geology," *JASA* 2:1 ([March] 1950): 1-2.

⁴⁹Kulp, "Deluge Geology," 2-3.

⁵⁰ Kulp, "Deluge Geology," 15.

⁵¹F. Alton Everest to J. Lawrence Kulp, September 13, 1949, quoted in Kalthoff, "New Evangelical Engagement," 475.

shows that true science is in excellent accord with Genesis.” Kulp was named as a prime suspect because his work “obviously does away with the heart of the Gospel.”⁵²

Thus, events in the ASA’s first decade did much to further the founders’ goals of professionalization. The initial resistance of the DGS and repeated attempts to undermine flood geology confirmed their aversion to amateur science. Everest’s insistence on finding a geologist to help in these efforts demonstrated his appreciation for the specialization of disciplines that had emerged in science more broadly and his desire for scientific integrity within the ASA’s work. The group’s admiration of Gedney and Kulp affirmed these goals and helped cultivate its appreciation for contemporary science and research. One of the more important events in this regard occurred in 1950, when the ASA permanently put the reins of the organization in the hands of professional scientists. Perhaps in response to the growing number of members with non-science careers, the ASA amended its constitution in 1950 and created four classes of membership. Members would refer to those with a degree in the natural or social sciences from an accredited institution regardless of their career. The classification of associate could be given to those pursuing an undergraduate degree in science. The designation of honorary fellow could be conferred upon anyone whose contribution to general knowledge was recognized as furthering the group’s aims. At the top were the fellows, those recognized as working scientists by outside professional organizations. Only the fellows, who never made up more than about ten percent of the affiliation, could vote or hold office in the

⁵²D J Whitney, “The Creationists” No. 2 (December 1950) in ASA papers, Box 1.

ASA.⁵³ Thus as the membership of the organization grew and became increasingly diverse, control remained in the hands of professional scientists.

Coming to Terms with Evolution

The ASA's quick affirmation of modern geology was in some sense unsurprising. Large segments of evangelicalism had reconciled the antiquity of the earth with a conservative reading of Genesis by way of the gap and day-age theories. The situation changed, however, as the group's appreciation for modern science brought the question of evolution front and center. Telling in this regard was the second edition of *Modern Science and Christian Faith* (1950). Although it did not endorse the theory of evolution, neither did it avoid the evidence that supported it. Smalley and Fetzer's chapter on anthropology, for example, stopped just short of approving evolutionary science when they noted that by examining the similarities and differences between humanity and "other members of the primate order" one found "the basis for morphological constructs of human evolution."⁵⁴ Such views were countered elsewhere in the text, most strongly in Tinkle and Lammerts's chapter on "Biology and Creation," but the willingness to recognize the evidence for evolution marked a new theme in the ASA. By 1951, when Everest delivered an address commemorating the organization's first decade, he had come to believe that evolution was no longer off limits to Christians: "The Bible does not

⁵³"Constitution of the American Scientific Affiliation" [1950], ASA Papers, Box 1; cf. Everest, *The American Scientific Affiliation*, 31-33, 108-110.

⁵⁴William A. Smalley and Marie Fetzer, "A Christian View of Anthropology," *Modern Science and Christian Faith* (1950), ed. F. Alton Everest, 175.

give unequivocal grounds for being anti-evolutionary.”⁵⁵ Over the following decade, this view became widely accepted within the ASA.

Evidence of transitioning attitudes can be seen most clearly in the work of Wheaton biologist Russell Mixer. In the 1940s, Mixer exemplified the American evangelical resistance to evolution. At the 1948 annual meeting he confessed that transmutation had occurred to some extent, but rejected this as validating ‘macro evolution,’ though he recognized the difficulty in distinguishing between macro and micro evolution.⁵⁶ When pressed, he acknowledged that some species “probably” came from others, but insisted that this did not necessarily imply all the evolutionists assumed.⁵⁷ Two years later, he clarified his views, stating that “as long as the gaps remain un-bridged by a series of fossils grading between one group and another, one may conclude that the ancestral types of the groups are specially created and not descended from other living types.”⁵⁸ In 1954, he defended his argument in response to criticism published in the *ASA Journal*.⁵⁹ Yet by the end of the year, his views began to change.

The fall of 1954 saw the publication of *The Christian View of Science and Scripture* by Bernard Ramm (1916-1992), a Baptist theologian whose influence within the ASA is difficult to overstate. Educated as a philosopher, Ramm’s love for science

⁵⁵F. Alton Everest, “The American Scientific Affiliation – The First Decade” *JASA* 3, no. 3 (September 1951) 33-38; see Kalthoff, *Creation and Evolution*, xxv, for information of the council’s discussion of Everest’s comments.

⁵⁶Russell L. Mixer, “The Science of Heredity and the Source of Species” *JASA* 1, no. 3 (June 1949): 1.

⁵⁷Discussion of Dr. Mixer’s Paper, *JASA* 1 (1949): 7.

⁵⁸Russell Mixer, *Creation and Evolution: Monograph Two* (Wheaton, Illinois: American Scientific Affiliation, 1950) 23, in *Creation and Evolution*, 209; see also Mixer, “Biology and Christian Fundamentals” in *Creation and Evolution*, 264-267.

⁵⁹“A Criticism of the A.S.A. Monograph on ‘Creation and Evolution’ *JASA* 6, no. 1 (March 1954): 24-28.

stemmed from his childhood and was reinforced through his undergraduate education at the University of Washington. He attended Eastern Baptist Theological Seminary and earned a PhD in philosophy from the University of Southern California in 1950. Convinced that theology required insights from modern knowledge and compelled to counter what he regarded as the “ignoble tradition” of fundamentalist science, Ramm hoped to remind evangelicals of their pre-fundamentalist heritage.⁶⁰ Concerning creation he argued that the opening chapters of Genesis were best understood through the “pictorial-day” interpretation, the view that the seven days of Genesis refer to God’s acts of revelation as opposed to his acts of creation.⁶¹ Without conflating the details of science with the Bible, he sought to accommodate the two by way of “moderate concordism,” the view that “geology and Genesis tell in broad outline the same story.”⁶² Like Gedney, Ramm argued for “progressive creationism,” which he defined as “the belief that Nature is permeated with the divine activity but not in a pantheistic sense.”⁶³ Yet he did not insist on any particular view, as long as readers recognized the religious and theological purpose of Genesis, accepted the use of secondary causes and processes in creation, and took seriously the discoveries of modern science.⁶⁴ Ramm’s view of creation attempted to correlate much of the organic development on which science insisted with the overarching trajectory of the early chapters of Genesis: “The order is

⁶⁰Bernard Ramm, *The Christian View of Science and Scripture*, (Grand Rapids, Michigan: Wm. B. Eerdmans Publishing Company, 1954), 7-10, 347-351.

⁶¹Ramm, *The Christian View of Science and Scripture*, 218ff.

⁶²Ramm, *The Christian View of Science and Scripture*, 226.

⁶³Ramm, *The Christian View of Science and Scripture*, 227.

⁶⁴Ramm, *The Christian View of Science and Scripture*, 219.

from blank and void to order and cosmos, from the seed to the full ear, from the cosmic to the organic, from the simple to the complex, from the sentient to the rational. The completed product is at the end of the process, not at the beginning.”⁶⁵ This was not theistic evolution, he insisted, which implied incremental changes without instances of new creation, but it was a long and gradual process: “Finally, when every river had cut its intended course, when every mountain was in its purposed place, when every animal was on the earth according to the blueprint, then he whom all creation anticipated is made, MAN, in whom alone is the breath of God.”⁶⁶

Ramm’s book caused a stir within American evangelicalism, and it earned more than a few protest letters from those defending the literal approach he denounced, even from some ASA members. Nonetheless, the positive responses far outweighed the negative commentary.⁶⁷ Described as pivotal, epochal, and a breath of fresh air, Ramm’s work was seen as marking a new direction in conservative evangelical thought in America.⁶⁸ In fact, although it likely was refreshing, it contained little that was new. As one reviewer correctly noted, Ramm’s work was largely a restatement of ideas from theologians around the turn of the century.⁶⁹ But, as Ramm insisted, most of these had

⁶⁵Ramm, *The Christian View of Science and Scripture*, 227.

⁶⁶Ramm, *The Christian View of Science and Scripture*, 228.

⁶⁷Walter Hearn, “An Interview with Bernard Ramm and Alta Ramm,” *JASA* 31, no. 3 (September 1979): 179-186; Marsden, *Reforming Fundamentalism*, 158-159; D. N. Eggenberger, “Editorial,” *JASA* 7, no. 4 (December 1956): 2.

⁶⁸John W. Hass, “Retrospective Look,” *JASA* 31, no. 4 (December 1979), 177; Wilbur Smith, “an Epochal Work on Science and the Christian Faith,” in F. Alton Everest, “Personal Reminiscences,” *JASA* 31, no. 4 (December 1979): 187; Edwin Yamauchi, “Personal Reminiscences,” *JASA* 31, no. 4 (December 1979): 188-189; Joseph L. Spradley, “Changing View of Science and Scripture: Bernard Ramm and the ASA,” *PSCF* 44, no. 1 (March 1992): 2-9.

⁶⁹Robert D. Culver, “An Evaluation of *The Christian View of Science and Scripture* by Bernard Ramm From the Standpoint of Christian Theology,” *JASA* 7, no. 4 (December 1955): 7-10.

been forgotten. Thus he succeeded in reminding his audience of their own pre-fundamentalist heritage. More important, however, Ramm provided a perspective with which American evangelicals could reconcile conservative theology and evolutionary science.

Ramm was no stranger to the ASA, and those who knew him well may have been surprised by the pronounced appreciation for science evident in his 1954 publication. As Wheaton physicist Joseph Spradley has noted, Ramm was an active participant in the early ASA, submitting three papers for the first four national meetings, and his views changed dramatically between the late 1940s and the mid-fifties.⁷⁰ Early on, Ramm took a critical attitude toward science and insisted on Scripture as a supplement to scientific explanation. Yet, stemming in part from his interaction with ASA leaders and in part from his friendship with Fuller Theological Seminary founder E. J. Carnell, *Christian View of Science and Scripture* provided a understanding of science and biblical interpretation that encouraged many within the ASA hesitant to accept modern scientific conclusions.⁷¹ For example, a 1955 *JASA* article by Henry Weaver, later ASA President, credited Ramm with correcting those who unjustly found conflict between Scripture and Science. Reviews by Mixer and Buswell commended both his rapprochement of science and the Bible and his denunciation of the “hyperorthodox” and their “reactionary type of mind.”⁷²

⁷⁰Joseph L. Spradley, “Changing Views of Science and Scripture: Bernard Ramm and the ASA,” *JASA* 44, no. 1 (March 1992): 2-9.

⁷¹Spradley, “Changing Views,” 2-9; Marsden, *Reforming Fundamentalism*, 158.

⁷²James O. Buswell, II “Review of Ramm, *The Christian View of Science and Scripture*, on Anthropology,” *JASA* 7, no. 4 (December 1955): 4-6; Russell L. Mixer, “Review of Ramm, *The Christian View of Science and Scripture*,” *JASA* 7, no. 4 (December 1955): 11-12; see also, Ann H. Hunt, “Responses of the Press,” *JASA* 31, no. 3 (September 1979): 189-190.

Ramm's influence became most apparent at the ASA's 1957 annual meeting, held at Gordon College (Beverly Farms, MA), where the question of biological origins took center stage. Walter Hearn (b. 1926), a young biochemist with a PhD from the University of Illinois (1951) who became a vanguard for the acceptance of contemporary science, presented a paper on "The Formation of Living Organisms from Non-Living Systems," in which he explained how the most current research was shedding light on the mystery of the evolution of life from non-living matter. Further research, he said, "will probably intensify the conviction that the living cell is an already highly developed system, a milestone perhaps, but not the starting point, of evolutionary processes."⁷³ James O. Buswell, III, Wheaton anthropologist and son of the college's former president, offered a paper on prehistoric man later criticized as something any secular scientist might have said on the subject. It is unclear if Buswell would have recognized this statement as criticism.

More important at this point than either Hearn or Buswell, however, were the new views put forth by Mixer. Displaying his newfound appreciation for Ramm and Fuller Theological Seminary cofounder and president Harold Ockenga, Mixer rejected his own previous insistence on the special creation of "ancestral types" of species. "What does Genesis really say?" he asked. "Genesis says there were three creations as shown by the use of the Hebrew word *bara*: the heavens and the earth; animal life; and man."⁷⁴ Quoting Ockenga, Mixer continued, "'between these stages . . . there is room for

⁷³Walter Hearn, "The Formation of Living Organisms from Non-Living Systems," *JASA* 10, no. 2 (June 1958): 7, (paper presented at 12th Annual Convention, 1957); For biographical information see Kalthoff, "New Evangelical Engagement," 639-640.

⁷⁴Russell L. Mixer, "An Evaluation of the Fossil Record," *JASA* 11, no. 4 (December 1959): 26, (paper presented at the 1957 annual meeting).

evolution in our thinking when it is taken to mean under the power of God.”⁷⁵ Mixer concluded by stating, “I do believe in creation But the question is, ‘How much was directly created and how much was left to hereditary processes, which were also created?’”⁷⁶

In 1957, Mixer was, in the words of Kalthoff, “the evangelical oracle on evolution.”⁷⁷ Thus, it seemed clear a new chapter had begun; the guardian of evangelical biology had disregarded his own previous evaluation of the fossil record and made a case for an evangelical view of evolution. Mixer seemingly remained unwilling to accept fully the scientific consensus on evolution. His emphasis on the Hebrew language suggests a denial of the evolution of life or the descent of humanity. It also affirmed the literalist’s desire to point to Scriptural details as facts in order to justify his interpretation. Nevertheless, some feared that he had completely reversed his position and capitulated to evolution.⁷⁸ Among ASA members, none was more prominent than H. Harold Hartzler. If Alton Everest was the star of the early ASA, as later ASA president Elving Anderson has described him, Hartzler (1908-1993) was its stage manager.⁷⁹ He earned a PhD in physics from Rutgers in 1934 and enjoyed a twenty-one year career (1937-1958) at Goshen College (Indiana) before becoming professor of physics and astronomy at Mankato State University (Minnesota) in 1958, a position he held until 1976. He served

⁷⁵Russell L. Mixer, “An Evaluation of the Fossil Record,” 26.

⁷⁶Russell L. Mixer, “An Evaluation of the Fossil Record,” 26.

⁷⁷Kalthoff, “New Evangelical Engagement,” 635.

⁷⁸ For summaries of responses to Mixer’s papers see James O. Buswell, III, “A Creationist Interpretation of Prehistoric Man,” in *Evolution and Christian Thought Today*, ed. Russell L. Mixer (Grand Rapids, MI: Wm. B. Eerdmans Publishing Co., 1959), 183 n. 51.

⁷⁹V. Elving Anderson, interview with author, August 1, 2009.

as ASA president from 1955-1960 and became its first Executive Secretary in 1961. Few exercised more influence in the group's affairs.⁸⁰ Not long after the 1957 conference, Hartzler, who maintained conservative creationist views throughout his life, wrote that he had become "deeply disturbed at the apparent drift toward evolution."⁸¹ Others, though, applauded Mixer's turn. As Wilbur L. Bullock (Zoology Department, University of New Hampshire) explained in his response to Mixer's lecture:

Our God is too great to become a synonym for our ignorance. Is He not the author of any natural laws that may be behind our puny theorizing? . . . As Christians I think we could more profitably consider the role of God the Creator throughout the entire course of evolution instead of defending the God of the gaps. I personally am not convinced of the 'entire course of evolution' but in answering the question '*How* did God create the physical and biological world'? I am not averse to considering the evolutionary hypothesis as a *tentative* working hypothesis until we can come up with something better.⁸²

The ASA's appreciation for evolution only furthered after 1957. The next annual meeting included a symposium on "What is a Kind – The Species Problem." J. Frank Cassel (1916-2007, professor of zoology, North Dakota State College, later president of ASA) highlighted the challenges in taxonomy and called for latitude in defining the word "kind" in Genesis.⁸³ The year 1959 saw the publication of *Evolution and Christian Thought Today*, a volume commemorating the Darwin centennial that Carl F. H. Henry (1913-2003) had proposed more than a decade earlier. Reflecting the early attitudes of the ASA, Henry, one of the most prominent evangelicals of the twentieth century and an

⁸⁰H. Harold Hartzler, *Only One Life: My Autobiography* (Elverson, PA: Olde Springfield Shoppe, 1992); Richard H. Bube, et al, "The Torch Passes," *JASA* 24, no. 4 (December 1972): 155-58; Owen Gingerich, "Obituary: H. Harold Hartzler, 1908-1993," *Bulletin of the American Astronomical Society* 26, no. 4: 1604; Moberg to author July 29, 2009.

⁸¹ Letter in *JASA* 12, no. 2 (June 1960): 16.

⁸²Wilbur L. Bullock, "Comments On Dr. Mixer's Paper," *JASA* 11, no. 4 (December 1959): 26.

⁸³ J. Frank Cassel, "Species Concepts and Definitions," *JASA* 12, no. 2 (June 1960): 5. from the thirteenth annual convention in Ames Iowa, August, 1958.

early interlocutor in ASA affairs, originally assumed the work would refute Darwin's theory. By the time the work was completed, however, it exemplified the growing consensus of the ASA. The contributing authors represented the new generation of leaders, including James Buswell III, Walter Hearn, V. Elving Anderson, and Wilbur Bullock. In his own chapter, Henry wrote: "The various contributors to this present volume are engaged in the task of showing the compatibility of [Christian] convictions with the best knowledge that contemporary science affords; hence, their major role is that of removing objections to Christian belief," rather than bringing Christian objections to modern science.⁸⁴

Despite the claims of the celebrated creationist champion Henry Morris, who later proclaimed the publication as marking the "complete capitulation of the ASA to evolutionism," the book did not entirely endorse transmutation.⁸⁵ But it did teach science and as such the evidence for evolution was clear and the options for Christian acceptance plentiful. The first printing sold out in only four months and the response it received revealed the deep division growing within the ASA. Hearn was well aware of the growing controversy when he, Buswell, and Cassel agreed to participate in a symposium at Wheaton College in January 1961 to commemorate the publication and celebrate its editor, Russell Mixter. At the gathering, Hearn noted that some reviewers had felt compelled to refer to the authors as "so-called" evangelicals or to put the word evangelical in quotation marks – he asked the audience to postpone judgment. "Now then," he said, "since none of the reviewers felt obliged to call me a 'so-called

⁸⁴Carl F. H. Henry, "Theology and Evolution," in *Evolution and Christian Thought Today* (Grand Rapids, MI: Wm. B. Eerdmans Publishing Company, 1959), 221.

⁸⁵Henry M. Morris, *History of Modern Creationism* (San Diego, Master Books, 1984), 141.

biochemist,' I shall proceed now to the technical discussion and you can all relax, knowing it is safe to follow me *that* far at least."⁸⁶ Hearn went on to survey recent discoveries in biochemistry and the growing research in pre-biological evolution. "If you were under the impression that evolution was about to blow over," he said, "I think you've misread the weather signs!"⁸⁷ During a panel discussion on the second day of the convention, Hearn described antievolutionary arguments based on the Second Law of Thermodynamics as "entirely invalid" and reproved those who rejected God's ability to work in gradual ways. "This sort of thinking," he insisted, "inevitably leads one to a 'God of the gaps' philosophy, no matter how sophisticated he may be about the nature of the gaps. . . . I am baffled by the idea that God is 'in' some events more than in others."⁸⁸

Cassel, then ASA president, was less forceful than Hearn, but he affirmed evolutionary science and the need to distinguish it from metaphysical assumptions in order to determine the best Christian understanding of biological phenomena: "This . . . I suggest is our challenge as evangelical Christians. May we stop shadow-boxing. May we stop finger-pointing."⁸⁹ During his introduction to the panel discussion he even attempted to validate the use of the natural world to interpret Scripture: "The Bible reveals God. The universe reveals God. Each can be used to interpret the other. They

⁸⁶Walter Hearn, "Origin of Life," *JASA* 13, no. 2 (June 1961): 38.

⁸⁷Walter Hearn, "Origin of Life," *JASA* (June 1961): 40.

⁸⁸Walter Hearn, "Origin of Life," *JASA* (June 1961): 41.

⁸⁹J. Frank Cassel, "Comments on the *Origin of Species*," *JASA* 13, no. 2 (June 1961): 45.

cannot . . . be contradictory. This use of creation to interpret Scripture does not question the authority of the revelation – simply the authority of the *interpretation*.”⁹⁰

Buswell capped off the event by affirming the physical evolution of humanity and claiming a vastly optimistic view of the contemporary situation, and one that may not have been shared by many in the audience:

“Large segments of evangelicalism have paid increasing attention to what may be called true scientific progress, and have broken away from the straight jacket of certain interpretations of Scripture which ran headlong into conflict with factual scientific data. . . . Thus in the volume which has stimulated this symposium, it is clear that Schweitzer is not attempting to debate *whether* God created the universe but *how* God created it; and that Hearn and Hendry are not examining *whether* God created life, but *how* God created it. Thirty-five years ago and less, it would not have been likely that a fundamentalist, doctrinally speaking, would have found himself able to state, as Schweitzer does, that there is no conflict between the best scientific theories as to *how* the universe came into being Nor could it have been admitted, as Hearn and Hendry stated, that “The expressions in Scripture regarding the creation of life (are) sufficiently figurative to imply little or no limitation on possible mechanisms” Thus it is not the natural sciences themselves which challenge Christian thought today, but it is the underlying naturalistic and mechanistic philosophy of the leading practitioners.”⁹¹

Buswell’s comment deserves closer attention as it indicated important developments in the ASA by this point. First, his claim of representing “large segments of evangelicalism” could have been accused of being hyperbole given the American context. Yet it also could have referred to the group’s awareness of the Research Scientists’ Christian Fellowship. Telling in this regard was Hearn’s comments at the 1961 meeting. Hearn, who had a strong background with Inter-Varsity Christian Fellowship, a Canadian affiliate of the British Inter-Varsity Fellowship, knew of the

⁹⁰J. Frank Cassel, “Christian Thought Today – On Origin of Species,” *JASA* 13, no. 2 (June 1961): 46.

⁹¹James O. Buswell, III, “The Origin of Man, and the Bio-Cultural Gap,” *JASA* 13, no. 2 (June 1961): 48, (paper presented at Wheaton Science Symposium, “Origins and Christian Thought Today” February 17, 1961).

RSCF through their articles in the IVF publication *The Christian Graduate*.⁹² Hearn's disparaging comment about the god-of-the-gaps (a phrase that has been traced to the nineteenth-century Scottish theologian Henry Drummond) and his insistence on Divine activity in all of nature reflected prominent themes in the RSCF at this time.⁹³ (These topics will be discussed in detail in chapter four.) After meeting a British post-doctorate fellow named Derek Nonhebel at Iowa State University in 1958, Hearn became the ASA's unofficial informant on RSCF affairs.⁹⁴ The ASA subsequently became increasingly interested in its British counterpart, with Everest meeting RSCF Secretary Oliver R. Barclay in the UK in 1963.⁹⁵ Second, Buswell's reference to the "factual data" of science, the validity of scientific theories, and "true scientific progress" reflects the ASA's increasing acceptance of both contemporary scientific methodology and the conclusions that followed. Third, his mention of figurative language in Scripture conveyed the general understandings of the opening chapters of Genesis increasingly accepted by the ASA's most trusted leaders. As opposed to Mixer's appeal to the Hebrew language in 1957, a refined literal approach, Hearn and others were now willing to accept an allegorical interpretation of the creation narrative. Fourth, Buswell's distinction between natural science and naturalistic philosophy summarized the

⁹²Walter Hearn to author, July 29, 2009.

⁹³Cf., Thomas Dixon, *Science and Religion: a Very Short Introduction* (Oxford and New York: Oxford University Press, 2008), 44-45; The phrase god-of-the-gaps received considerable attention after the publication of C. A. Coulson's *Science and Christian Belief*, (1955).

⁹⁴Hearn to author, July 29, 2009; Walter Hearn, "Chemistry," <http://www.asa3.org/ASA/BookReviews1949-1989/6-58.html> (accessed June 5, 2010).

⁹⁵*ASA News* 1, no. 5 (August 1959); *ASA News* 4, no. 6 (October 1962); *ASA News* 5, no. 4 (July 1963); *ASA News* 5, no. 6 (December 1963).

prevailing philosophical attitudes of ASA leaders. Such attitudes, however, would not be fully articulated until challenged by the antievolutionists within and outside of the ASA.

It was a year before Hearn learned of the fallout the symposium caused, but it was immediate and enduring.⁹⁶ Following a widely publicized attack on Wheaton's theology and accusations of its drift towards liberalism, the college president, V. R. Edman, and the board cracked down on the science department, forcing even Mixter to sign a statement asserting his creationist views.⁹⁷ The progress the Wheaton science faculty had made to move beyond fundamentalist science was cut short, and Mixter, whose commitment to Wheaton never waned, was forced to guard his views of creation for the remainder of his career.⁹⁸ Yet for the majority of ASA leaders there was no going back.

Thus, by the early 1960s the aspiration for professionalism that had motivated the ASA founders led the group's leaders to face and eventually accept evolutionary science. Hearn, Buswell, and Cassel represented a new generation of leaders whose professional accomplishments, robust faith, and scientific acumen guided the ASA in its eventual endorsement of modern science. Yet professionalism could only take the ASA so far. Most conservative American evangelicals, even the most progressive, would only go so far as their theology allowed. Without assurance that the Bible did not proscribe transmutation, it seems, most ASA members would have stopped with accepting modern geology and gone no further. Ramm, and perhaps to a lesser extent the RSCF, provided the theological justification needed for scientists such as Mixter to accept evolution. In

⁹⁶Walter Hearn to author, July 29, 2009.

⁹⁷See Numbers, *Creationists*, 204-207; Kalthoff, "New Evangelical Engagement," 682-689.

⁹⁸Spradley, interview with author, August 1, 2009.

other words, many evangelical scientists in America were theologically prepared for Kulp, because of the latitude they found in Genesis 1. But it was only after the publication of *The Christian View of Science and Scripture* that groups of evangelicals would be willing to follow Hearn and his endorsement of evolutionary science. Clearly, however, not all were equally willing to give up conservative interpretations of Genesis so easily. As ASA leaders became more comfortable with modern biology, clear divisions developed within the organization. Against those willing to reconcile evolution and creation stood a vocal and committed group that eventually declared the ASA's views anathema.

Parting Ways: The Creation of the Creation Research Society

Perhaps none expounded more clearly the apparent danger of evolution than John R. Howitt, a member of the ASA since 1943 and a senior member of the executive council in the 1950s.⁹⁹ In the fall of 1956, Howitt wrote a four-page letter titled "The Crisis in the A.S.A." that condemned the growing tendency of placing scientific discoveries of the earth above commonsense readings of the Bible and warned of widening divisions within the organization.¹⁰⁰ The American tradition of commonsense hermeneutics has a long history rooted in the Scottish philosophy of Thomas Reid (1710-96) and Dugald Stewart (1753-1858).¹⁰¹ By the start of the twentieth century, it provided the interpretive lens through which the prevailing number of conservative evangelicals

⁹⁹A. Donald. MacLeod, *C. Stacey Woods and the Evangelical Rediscovery of the University* (Downers Grove, IL: InterVarsity Press, 2007), 250, n.25.

¹⁰⁰John R. Howitt, "The Crisis in the A.S.A.," October 23, 1956, in Kalthoff, "New Evangelical Engagement," 543-544.

¹⁰¹See E. Brooks Holifield, *Theology in America: Christian Thought from the Age of the Puritans to the Civil War* (New Haven and London: Yale University Press, 2003), 173-196.

read Scripture. By the middle of the century it was commonly and often uncritically claimed by those who sought to disparage the aloofness of higher criticism and academic intellectualism, while rallying those with homegrown faith in the Bible. Howitt's accusation accurately recognized the ASA's departure from this tradition. Everest and the other ASA leaders grew increasingly unsatisfied with commonsense readings that demanded literal interpretations of the opening chapters of Genesis.

In 1956, Howitt began a correspondence with Hartzler, then ASA President, in which he unequivocally condemned evolution as "the Trojan horse which will ultimately undermine the Evangelical faith."¹⁰² Echoing the fundamentalist conviction that evolution contradicted the foundation of Christian theology, Howitt insisted, "When a man says that he believes in evolution and in the atonement, he is making a ridiculous statement. It is like saying that one is a Christian and an atheist. If there has been no fall there could be no possible need for redemption."¹⁰³ The lines, it seemed, were drawn. Evolution was a sinister tool employed by the enemy to undermine Christian faith and the ASA's future was at stake. Howitt made his predictions clear: "It is quite obvious that in the membership of the A.S.A. there are wide differences of opinion and the line of cleavage is gradually being drawn. . . . Ultimately one or the other side will be forced out or else there will be a split."¹⁰⁴ Despite the executive council's initial denial of looming crisis, events soon revealed that division of some kind would be unavoidable.

¹⁰²John R. Howitt to H. Harold Hartzler, December 18, 1956, ASA Papers, Box 13.

¹⁰³John R. Howitt to H. Harold Hartzler, April 23, 1957, ASA Papers, Box 13.

¹⁰⁴John R. Howitt to H. Harold Hartzler, January 30, 1957, ASA Papers, Box 13.

The second half of the 1950s were pivotal years for American evangelicalism as rifts began to emerge between the new generation of leaders and the more staunch fundamentalists. Early in the century, conservative leaders had laid the ground work for the fundamentalist movement through *The Fundamentals*, a body of writings that bound together a disparate group with a shared concern for the challenges and assumptions of the modern world. Before fundamentalism became an ideology or grew into a political movement, *The Fundamentals* helped create a common identity, a collective consciousness built around shared articles of belief and clear distinctions between themselves and others.¹⁰⁵ By the 1950s, the lines of demarcation had become rigid, with many supporters all too eager to push away those unable or unwilling to conform to their shared convictions. Historian George Marsden has marked 1957 as the year fundamentalists came to see themselves as distinct from the larger evangelical movement. It was in this year that Billy Graham accepted the sponsorship of the local council of churches, which included Protestant liberals, for his New York City crusade. Unwilling to join forces with their theological adversaries, prominent fundamentalist leaders soon broke ties with Graham. This was also the year Ockenga popularized the term “new evangelicalism” and Mixter delivered his pivotal lecture on the fossil record, an event historian Mark A. Noll has recognized as key in the intellectual development at Wheaton.¹⁰⁶ After 1957, Marsden argues, “‘fundamentalism’ as a self designation meant

¹⁰⁵Michael Lienesch, *In the Beginning: Fundamentalism, the Scopes Trial, and the Making of the Antievolution Movement* (Chapel Hill, The University of north Carolina Press, 2007), 8-33.

¹⁰⁶See Marsden, *Reforming Fundamentalism*, 3; Mark A. Noll, “Progress of Christian Learning at Wheaton College, 1946-2006,” (presentation given at Wheaton College Alumni Weekend, May 5, 2006) handout provided to author by Keith Call.

those who totally separated from mainline churches.”¹⁰⁷ Evangelicals sought cooperation with and respect from those with whom they disagreed. Fundamentalists relished the mutual rejection found between them and the broader culture.

Such divisions were becoming increasingly manifest in the ASA during this period. In 1955, *JASA* editor Delbert N. Eggenberger noted “the stigma attached to being a ‘fundamentalist’” and argued that since the label had become associated with “so many weird and unscientific concepts . . . it should be shaken off.”¹⁰⁸ More conservative members rejected such a move, insisting that “for those not ashamed to be called fundamentalists” there was little need to accommodate the mainstream scientific community.¹⁰⁹

Growing division demanded a response from the ASA leaders. They first tried to defuse the situation by insisting that since the group had no official position on controversial issues—a phrase that became a mantra within the ASA—all evangelical views were welcome. As evidence they often pointed to the markedly differing points of view published in the *JASA*.¹¹⁰

When it became clear that creationists would not be pacified by merely having their views included, ASA leaders drew attention to the integrity and fidelity of those accused of abandoning the faith. In an article published in 1959, Cassel, who was elected ASA president in 1961, summarized well the views of many ASA members by describing

¹⁰⁷George Marsden, *Religion and American Culture* 2nd ed., (Belmont, CA: Thomson, 2001), 227.

¹⁰⁸Delbert N. Eggenberger, “Editorial,” *JASA* 7, no. 1 (March 1955): 2.

¹⁰⁹Kalthoff, “New Evangelical Engagement,” 544.

¹¹⁰Cf., i.e., Marion Barnes, “Editorial,” *JASA* 2, no. 4 (December 1950): i.

the experience of one who originally intended to refute evolution but who later changed course:

As he strove to incorporate each of these facts into the Biblico-scientific frame of reference, he found that . . . he began to question first the feasibility and then the desirability of an effort to refute the total evolutionary concept This has been a heart-rending, soul-searching experience for the committed Christian . . . as he has struggled to release strongly held convictions as to the close limitations of Creationism.¹¹¹

Cassel concluded his testimony by affirming both the challenge and promise of the new spirit of the ASA:

Thus, 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. . . . Some of us see in this developing view the demise of our organization, but it seems to me that we only now are ready to move into the field of real potential contribution – that in releasing Truth from the restrictions we have been prone to place upon it, we can really view it in the true fullness which the Christian perspective gives us.¹¹²

Cassel's appreciation for the new directions in the ASA and his hope for its new potential were shared by the majority of ASA leaders. Yet a vocal and assertive number of members refused to acquiesce to the ASA leaders or to grant them peace as they worked to reshape the organization. Questions of rightful ownership soon followed.

In a move that paralleled the historically oriented originalist critiques of the then ruling Warren Court (the attempt by US Supreme Court justices to appeal to the intent of those who ratified the Constitution), disgruntled ASA members attempted to change the course of the association by claiming the original intent of its founding fathers.¹¹³ In January 1963, William Tinkle notified ASA president Henry Weaver and *JASA* editor

¹¹¹J. Frank Cassel, "The Evolution of Evangelical Thinking on Evolution," *JASA* 11, no. 4 (December 1959): 27.

¹¹²J. Frank Cassel, "The Evolution of Evangelical Thinking on Evolution," 27.

¹¹³See Johnathan George O'Neill, *Originalism in American Law and Politics*, (Johns Hopkins Press, 2005), "Chapter 3: The Return of Originalist Analysis in the Warren Court Era."

David Moberg of protests he had received about the group's direction and apparent departure from its original goals.¹¹⁴ The following summer Lammerts expressed similar concerns and more forcefully accused the new leaders of abandoning the group's original purpose:

Judging from the general tenor of recent articles in the *ASA Journal*, most members . . . are what might be called theistic evolutionists. . . .

This was not the case at the time the American Scientific Affiliation was formed. All of the founding members . . . who first met in 1942 were creationists Most of us older Fellows of the organization . . . have the point of view so clearly expressed by Dr. Henry M. Morris in his book, The Genesis Flood.¹¹⁵

In a letter published in the *JASA* in September of that year, another member offered an even stronger rebuke. "The evolution you now advocate is definitely not Christian. . . ." he wrote, "We remember the days when A.S.A. first organized. We were all against evolution then. Satan has thus worked fast to bring us to such a compromise. . . .

Fundamentalism seems to have departed from our deliberations, and Neo-evangelicalism, that curse of compromise, has taken its place."¹¹⁶ The fact that the *Journal* was willing to publish such critiques did little to assuage the fervor with which fundamentalists rejected those willing to tolerate the new theological ideas. The 1961 publication of Morris's *Genesis Flood*, the most thorough exposition of flood geology since Price's own work nearly four decades earlier, clearly fueled their convictions. Their willingness to make such pronouncements seems to have been further emboldened by the emergence of the

¹¹⁴William J. Tinkle to David O. Moberg, January 19, 1963, Anderson papers; see also, William J. Tinkle to Henry Weaver, January 12, 1963, Anderson papers.

¹¹⁵Walter Lammerts to Robert D. Knudsen, June 4, 1963, Anderson Papers.

¹¹⁶Philip B. Marquart, "Evolution," *JASA* 15, no. 3 (September 1963): 100.

Creation Research Society (CRS), a group historian Ronald L. Numbers has called “the leading creationist organization of the late twentieth century.”¹¹⁷

The seeds for the CRS were sown in 1957, the year fundamentalists dis severed themselves from their evangelical cousins. In this year, Walter E. Lammerts and John C. Whitcomb, Jr. imagined the creation of a group of scientists committed to proving the viability of flood geology. Nothing came of their ideas until 1961, the year Lammerts and Morris published *The Genesis Flood*, an unambiguous response to the evolutionists running the ASA. Lammerts and William J. Tinkle set out to find a “Team of Ten” who could form the basis of a society dedicated to anti-evolution. Lammerts was one of the first young-earth creationists to earn a PhD in biology (1930, University of California, Berkeley). He became a successful and somewhat famous plant breeder early in his career and taught at UCLA (1940-1945) before leaving the academy to help develop Descano Gardens in La Cañada, California. Lammerts had been one of the first to join the ASA, but became less involved during the 1950s and essentially repudiated the organization after 1960. Tinkle, who earned MA and PhD degrees in zoology from Ohio State University (1932), was also an active member of the ASA. By early 1963 the Team of Ten, as it was later called, was complete and the Creation Research Committee was born with Lammerts as its chairman and Tinkle as secretary. The original committee included seven members of the ASA. At the annual ASA meeting that year at Asbury College in Wilmore, Kentucky, Morris and his comrades intentionally riled emotions by describing the “tragedy” of compromise committed by evangelicals who allowed

¹¹⁷Numbers, *Creationists*, 240-254, quote 240.

themselves to be “intimidated” into denying the Bible.¹¹⁸ Convinced that the ASA was a lost cause, several members of the Committee met in Midland, Michigan and formally established the Creation Research Society.¹¹⁹ Lammerts was president. Tinkle was secretary. Wilbert H. Rusch, who held a master’s degree in biology and began a similar degree in geology before forgoing his education to join the faculty at Concordia Lutheran Junior College in Ann Arbor, Michigan, was treasurer. By the end of the year, the group included several dozen members. By 1965 it boasted 680 names on its subscription list and about 200 voting members, consisting of those who held graduate degrees in science.¹²⁰

The CRS quickly discovered the difficulty of developing a doctrinal statement acceptable to all members. Although *Genesis Flood* served essentially as the group’s guiding document, not all agreed with its conclusions about the effects of the flood or the recent creation of the earth. Morris and Lammerts hoped to unite the group unequivocally to flood geology, but only four of the initial ten insisted on such views. After considerable debate, the final statement of belief affirmed the plenary inspiration of Scripture, the fixity of species, the historic flood and special creation of Adam and Eve, and the need for salvation through Christ resulting from the Fall. Although all were firmly against evolution, strict adherence to flood geology was avoided. In response to the trend of the ASA, some even hoped that the group would be disbanded if evolution

¹¹⁸Henry M. Morris, “The Spirit of Compromise,” (paper presented at the joint meeting of the American Scientific Affiliation and the Evangelical Theological Society, Asbury College, Wilmore, Kentucky, June 20, 1963) quoted in Kalthoff, “New Evangelical Engagement,” 703.

¹¹⁹J. M. B. “Theology and Science,” *Christianity Today* (July 19, 1963): 34-35; H. Harold Hartzler, “God’s World: Fifth Biennial Joint Meeting of the ETS and the ASA,” *JASA* 15, no. 4 (December 1963): 110-114; Kalthoff, “New Evangelical Engagement,” 700-704.

¹²⁰Numbers, *Creationists*, 259.

ever crept into its thinking. In a conversation with Elving Anderson on June 17, 1963, just days before the CRC officially became the CRS, Rusch revealed that the group planned to require members to sign a statement rejecting evolution and to agree to abandon the organization if the ideas changed.¹²¹ Eventually, thanks largely to the publications of Morris and efforts of Lammerts, the CRS became almost wholly committed to deluge science. So much so, in fact, that by 1965 the vocal ASA critic John Howitt complained that while the ASA was embracing evolution, the fundamentalists were going too far by insisting upon flood geology: “Let it be truly a Creation Research Society, seeking for the truth no matter where it ends up, - as flood geology, the gap theory, theistic evolution or what not.” By the early 1970s, even he admitted “the flooders [were] getting pretty dogmatic these days.”¹²²

The ASA’s official response to the CRS was marked by cordial encouragement and support. Soon after the June 1963 meeting, Hartzler wrote to Tinkle expressing his interest in the new group and his desire for cooperation between the two organizations. “As Executive Secretary of the ASA,” he wrote, “I am hoping that we will be able to continue to work together in the spirit of brotherly love.”¹²³ Ever the peacemaker, Hartzler seems to have hoped to overcome the differences between the ASA and newly organized CRS by pointing to the ambiguity of the evolution issue. “Personally,” he

¹²¹V. Elving Anderson, “Notes after conversation with Wilbert Rusch,” Ann Arbor, June 17, 1963, Anderson papers.

¹²²Numbers, *Creationists*, 254-259; Howitt quoted in Numbers, *Creationists*, 262.

¹²³H. Harold Hartzler to William Tinkle, June 27, 1963, Anderson papers.

wrote, “I do not believe that we have sufficient evidence to establish the case one way or the other.”¹²⁴ Hartzler became a supporting member of the CRS in 1964.¹²⁵

Privately, the ASA response was less encouraging. In a June 1963 letter to the ASA executive committee Hartzler again attempted to downplay the differences between the two groups, while more directly expressing his unease with the events:

“The new organization in our midst . . . is one which should cause us some concern. These men are much interested in our work but feel that we are sometimes on the wrong track. . . . I feel that our work and their work is the same but that we approach the problem from different points of view. We are all concerned with the problem of Evolution and I hope that we can continue to work together. . . . May I suggest that the Executive Council give serious consideration to the point of view of these men, most of whom are members of the ASA.”¹²⁶

Despite his claims of camaraderie, however, Hartzler was never blind to the fundamental issues that divided them. He recognized both the issues and the irritants that provoked the unfolding events. In a 1963 letter to Moberg he admitted that the CRS had “been established to refute Walt Hearn and the point of view he represents in the ASA.”¹²⁷

The effects of these events were twofold. First, in the early years, the CRS focused on education, research, and publishing and made considerable headway in promoting its unorthodox scientific ideas. ASA leaders soon hoped to imitate the CRS in this regard, Everest particularly. He interpreted the creation and popular appeal of the CRS as signs of the failures and shortcomings of the ASA. Referring to the CRS in a private letter to Anderson, he wrote:

“A small group of crackpots getting together doesn’t bother me, but this active indoctrination of the church community does. It would seem that they are moving

¹²⁴H. Harold Hartzler to William Tinkle, June 27, 1963, Anderson papers.

¹²⁵H. Harold Hartzler to Duane T. Gish, October 26, 1964, Anderson papers.

¹²⁶H. Harold Hartzler to Members of the Executive Council, July 26, 1963, ASA Papers, Box 14.

¹²⁷H. Harold Hartzler to David Moberg, June 27, 1963, Anderson papers.

into the vacuum created by the failure of the ASA to have an active program for the church community. The Journal is over their heads, and the ASA news isn't that kind of publication and doesn't reach them anyhow . . . ; result, the ASA contacts with churches are very few and probably relatively ineffective. . . . We need to communicate—COMMUNICATE!”¹²⁸

Everest pled for more aggressive attempts to reach those beyond its own membership. He urged the ASA to lead the way in forming a “federation of associations” that could work to take Christianity to the intellectual community, to publish a popular journal on Christianity and science in order to reach a broader audience, to develop a Christian philosophy of science that remained “in keeping with Biblical revelation,” and to sponsor an “International Congress on Science and Christianity.”¹²⁹

Further, the creation of the CRS also compelled ASA leaders to clarify their vision for the organization. At the 1963 annual meeting, Henry Weaver, Jr. and F. Alton Everest offered their views. Weaver, a former ASA president, presented a paper in which he sought to identify the most important scientific issues facing the church. Over the previous year, he had conducted a survey of leading Christian thinkers, asking what they considered “the most critical issue that modern science poses to the Christian Church today?” The respondents included familiar ASA figures such as Ramm, Eckelmann, Buswell, Jr, Stoner, and C. F. H. Henry, as well as individuals such as George K. Schweitzer (Assoc. Prof of Chemistry, University of Tennessee), the theologian and physicist Ian G. Barbour, William G. Pollard (Executive Director, Oak Ridge Institute of Nuclear Studies), Robert M. Page (Dir. of Research, US Naval Research Laboratory), and

¹²⁸F. Alton Everest to V. Elving Anderson, December 26, 1964, Anderson papers; cf., F. Alton Everest, “Challenges Before the American Scientific Affiliation,” *JASA* 16, no. 1 (March 1964): 10-11.

¹²⁹F. Alton Everest, “Challenges Before the American Scientific Affiliation,” *JASA* 16 (March 1964): 10-11.

British chemist C. A. Coulson. Weaver found that “the most important issue we face today has to do with the method of science.”¹³⁰ It was not evolution or the origin of life but the way naturalistic methodologies led some to see science as the only source of knowledge. Also making the list were questions of purpose in scientific pursuits, challenges stemming from the supernatural character of Christianity (e.g., the question of miracles), questions of biblical interpretation in areas where modern science seemed to conflict, and the ability to communicate with an increasingly scientific world.

Few became more preoccupied by the unfolding events than ASA president V. Elving Anderson. In 1965 he described the “basic job” of the ASA as the attempt to interpret God’s message to a culture which has been greatly influenced by scientific methodology and productivity. We share a conviction that the Bible is relevant for people of all times. . . . [I]t will criticize and be in tension with the spirit of every age. Only we must identify the real points of tension and not waste energies on peripheral questions.¹³¹

The peripheral questions were becoming increasingly clear. In his efforts to assuage the controversy, Anderson began to insist on a distinction between evolution as science and evolution as philosophy. Hoping to tap the entrenched American antipathy for ‘isms,’¹³² he insisted that “The topics of evolution and evolutionism deserve careful attention on the part of evangelical scholars . . . [and] require a clear distinction between the different meanings of the two terms.”¹³³ Evolution meant the science of studying biological

¹³⁰Henry Weaver Jr, “Critical Issues Modern Science Poses for The Christian Church Today,” *JASA* 16, no. 1 (March 1964): 5.

¹³¹V. Elving Anderson, “The Goals of the ASA – A Personal View,” *JASA* 17, no. 2 (June 1965): 34.

¹³²V. Elving Anderson, interview with author, August 1, 2009.

¹³³V. Elving Anderson, “Letter to the Editor, Christianity Today” October 27, 1964, Anderson papers.

change. Evolutionism referred to “an extrapolation from science to a comprehensive world view,” or, as he stated elsewhere, “a philosophical system or world-view which serves as a self-sufficient unifying ‘key to the universe’ and as a basis for ethical decisions.”¹³⁴ There were those, he noted, who failed to see a distinction between the two ideas because they held “a straight-line relationship between the matters of science and matters of belief,” but this was not necessary.¹³⁵ The acceptance of evolution did not require acquiescence to evolutionism.

At the same time that Anderson saw the need to define terms and clarify views, he grew increasingly frustrated by those who insisted on an either-or attitude towards creation and evolution. In a letter to the editor of *Christianity Today* Anderson insisted that those who rejected evolution mired profitable science and faith dialogue in useless and indefensible accusations against reputable researchers: “An unqualified global denial of evolution by a Christian . . . will be interpreted by many scientists as a failure or refusal to understand what biologists are talking about.”¹³⁶ In an accompanying personal letter to Carl Henry, *Christianity Today* editor, clearly not intended for publication, Anderson was even more direct:

“The statement by Morris that ‘there is not one shred of genuine evidence . . . for the validity of evolution’ is simply not true Morris’ book is a very useful one because his assumptions are clearly stated. Some of these assumptions, however, are in my opinion very questionable and should not be accepted too readily by evangelicals concerned with proper Biblical interpretation.”¹³⁷

¹³⁴V. Elving Anderson, “Letter to the Editor, *Christianity Today*,” October 27, 1964, Anderson Papers; V. Elving Anderson, “The Goals of the ASA: A Personal View,” *JASA* 17, no. 2 (June 1965): 36.

¹³⁵ V. Elving Anderson, “Letter to the Editor, *Christianity Today*,” October 27, 1964, Anderson papers.

¹³⁶ V. Elving Anderson, “Letter to the Editor, *Christianity Today*,” October 27, 1964, Anderson papers.

¹³⁷V. Elving Anderson to Carl F H Henry, October 29, 1964, Anderson papers.

In a similar letter to the managing editor of the “Good News Broadcaster” he emphasized that “much of what is currently discussed under the topic of evolution represents good biology and does not conflict with Biblical ideas of creation.”¹³⁸ Anderson was soon writing that he had “begun to lose patience with those who write of ‘natural selection’ as a figment of the imagination” or who failed to demonstrate a nuanced understanding of science.¹³⁹ Anderson’s frustration with those who insisted on drawing hard lines between creation and evolution was also apparent in his dissatisfaction with the terms used to label the competing views:

“I am not frankly satisfied with either of these terms. ‘Special creation’ seems to infer that God’s activities in the universe can be seen only through instantaneous acts. I am thoroughly committed to the doctrine of creation, but see no reason to limit it to special creation.

Theistic evolution, on the other hand, suggests the idea that God’s hand is seen only through natural processes. I suspect that this idea can easily slip into a type of ‘deism’

The use of these two terms suggests that we must make a choice between God’s immanence and God’s transcendence. As I see it, the Bible teaches that there is no such alternative. We are not faced with a choice between these two attributes. God is both immanent and transcendent.”¹⁴⁰

In the years that followed, Anderson’s distinction between evolution and evolutionism, his personal frustration with antievolutionists, and his acceptance of evolutionary science became frequent themes in his writings.

Thus, the immediate results of the ASA’s unforeseen evolution were twofold.

On the one hand, despite the leaders’ insistence of neutrality in controversial issues, their efforts to deny creationists the right to claim ‘the Christian view’ of creation made them

¹³⁸V. Elving Anderson to Richard Borth, July 23, 1965, Anderson papers.

¹³⁹V. Elving Anderson, “The Goals of the ASA – A Personal View,” *JASA* 17, no. 2 (June 1965): 34.

¹⁴⁰V. Elving Anderson to Richard Borth, July 23, 1965, Anderson papers.

de facto defenders of evolutionary creationism and a popular target for antievolutionary attack. On the other hand, the group's robust appreciation for modern science produced a new dimension in its self-understanding. No longer were they merely standing guard against the lethal attacks of secular science. They were now equally concerned to proclaim the Christian's need for scientific knowledge. The ASA thus saw itself as having a dual role, so argued Everest in 1964: "dramatizing to the scientific community and to the world the complete relevance of Christian faith to this modern age and demonstrating to the Christian community that science is truly an ally of faith."¹⁴¹ In November 1965, Moberg, former editor of the *ASA Journal*, further expressed this point when he argued that helping the church understand 'God's two books' was of primary importance for the ASA: "God's revelation of Himself in the universe and His revelation in the Bible at times appear to be inconsistent; this is one of the major reasons why an organization like the ASA is needed in evangelical Christianity today."¹⁴² As the ASA began to move in this direction it began to take a broader view of critical issues deserving its attention. As *JASA* editor David Moberg wrote in the summer of 1963, "the Conservatives . . . think that the purpose of the A.S.A. should be simply and primarily to fight evolution. We need to work together to make it clear that there are far more significant issues confronting evangelical Christians in the world today."¹⁴³ Over the next two decades, attention moved far beyond evolution and apologetics.

¹⁴¹F. Alton Everest, "Challenges Before The American Scientific Affiliation," *JASA* 16, no. 1 (March 1964): 10-11.

¹⁴²David O. Moberg to John I. Paton, November 4, 1963, Anderson Papers.

¹⁴³David O. Moberg to Irving W. Knobloch, June 4, 1963, Anderson Papers.

Conclusion

Historian John Hedley Brooke has noted the formation of the CRS as a departure from the established pattern of the evangelical engagement with science. Walter Lammerts and his team of ten “marked the separation of the modern creationist movement from the evangelical mainstream.”¹⁴⁴ This interpretation is correct if one accepts the evangelical mainstream as the aversion to scriptural science that predated the American Civil War (as Mark A. Noll has pointed out), or as the pattern of evangelical acceptance of evolution prominent in the UK (as D. W. Bebbington has pointed out).¹⁴⁵ But in the American context of widespread evangelical antievolutionism, it was the ASA rather than the CRS that accounted for a greater departure from the mainstream. From the perspective of nearly all American evangelicals of the 1940s, theistic evolution seemed an untenable position for Bible believing Christians. That a group of fundamentalist scientists would form the leading American evangelical organization to defend the theory of evolution must have seemed a surprising, if not bizarre, turn of events. The ASA’s transition from fundamentalism to the “new evangelicalism” and from antievolutionism to accommodationism distinguished it from both its religious traditions and the prevailing conservative culture of the US. Regardless, ASA leaders were convinced they had chosen the better path and were determined to spread their

¹⁴⁴John Hedley Brooke, *Science and Religion: Some Historical Perspectives* (Cambridge and New York: Cambridge University Press, 1991), 344.

¹⁴⁵Mark A. Noll, “Science, Theology, and Society: From Cotton Mather to William Jennings Bryan,” *Evangelicals and Science in Historical Perspective*, eds., David L. Livingstone, D.G. Hart, Mark A. Noll, (Oxford and New York: Oxford University Press, 1999); D. W. Bebbington, “Science and Evangelical Theology in Britain from Wesley to Orr,” *Evangelicals and Science in Historical Perspective*, eds., David L. Livingstone, D.G. Hart, Mark A. Noll, (Oxford and New York: Oxford University Press, 1999).

message of the acceptability of evolution and the value of science among their fellow believers.

CHAPTER FOUR

The Research Scientists' Christian Fellowship: 1940s – 1965

A century ago it looked to many people as if Science and Christian Faith were heading for a fight to the death. To-day the echoes of the conflict have almost died away. Is this "peace with honour", or is it a dishonourable truce? I believe the dispute deserved to die, because it was not really between Science and Christianity at all but between mistaken views of each: and I would maintain that the true scientific spirit in fact expresses something which is a necessary ingredient of a truly Christian faith. Faith is not credulity; like scientific belief, it entails trust based on experience and on reliable testimony. It differs from scientific belief not in its standard of truth but in its mode of origin.

- Donald M. MacKay, 1960¹

Like the American Scientific Affiliation, the Research Scientists' Christian Fellowship was envisioned as an apologetic body. Unlike the American group, the Fellowship was originally aimed at working scientists with the goal of demonstrating the validity of the Christianity in a scientific world. Its creation was part of a broader intellectual movement within conservative British evangelicalism in the interwar years.

Though somewhat abated, the battles between liberal and conservative theology in Britain continued in the 1930s. To conservatives, liberal theology seemed more philosophical than biblical and appeared to lead people away from the ministry rather than towards it.² To liberals, conservative theology seemed an oxymoron. As Research Scientists' Christian Fellowship founder Oliver R. Barclay later recalled, while conservatives were admired for their religious zeal and sincerity, they were not taken very seriously by most religious or intellectual people and were often ridiculed for their

¹Donald M. MacKay, *Science and Christian Faith Today* (London: Church Pastoral-Aid Society, 1960), 3.

²Oliver R. Barclay, *Whatever Happened to the Jesus Lane Lot?* (Leicester, England: Inver-Varsity Press, 1977), 95-96.

devotion to seemingly outdated dogma: “They were regarded as anti-intellectual, anti-theological and obscurantist, clinging tenaciously to outmoded beliefs simply because they were afraid to face the facts.”³ The debates were perhaps most caustic between liberal and conservative evangelicalism, with student life serving as a primary battleground.⁴ Here liberalism and conservatism developed into a bitter rivalry.⁵ Around the turn of the century the historically evangelical Student Christian Movement (SCM) began relaxing its doctrinal commitments in order to increase its appeal to High Churchmen. In response conservative students at Cambridge who made up the Cambridge Inter-Collegiate Christian Union (CICCU), founded in 1876, separated from the SCM in 1910. CICCU became the leading light of the intellectual revival among conservative evangelicals in Britain. By 1928, CICCU leaders helped found the Inter-Varsity Fellowship (IVF), and by the 1940s Cambridge alumni were playing a major role in the rekindling of evangelical intellectual life in both the UK and US.⁶

The motivating figure within the IVF was Douglas Johnson, a trained medic whose energy, eclectic knowledge, and international vision guided the movement for four decades.⁷ Johnson, always known as DJ, was a strategic thinker who repudiated the liberal Student Christian Movement and believed that the “hour of God” had come for a

³Barclay, *Whatever Happened*, 102.

⁴Martin Wellings, *Evangelicals Embattled: Responses of Evangelicals in the Church of England to Ritualism, Darwinism and Theological Liberalism 1890-1930* (Paternoster Press, 2003), 273.

⁵Wellings, *Evangelicals Embattled*, 277-308.

⁶D. W. Bebbington, *Evangelicalism in Modern Britain: A History from the 1730s to the 1980s* (London and New York: Routledge, 1989); Mark A. Noll, *Between Faith and Criticism: Evangelicals, Scholarship, and the Bible in America* (San Francisco: Harper and Row Publishers, 1986).

⁷T. A. Noble, *Research for the Academy and the Church Tyndale House and Fellowship: The First Sixty Years* (Leicester: Inter-Varsity Press, 2006), 28.

conservative revival.⁸ He served as General Secretary of the IVF from 1928 to 1964 and is credited with the organization's development from an obscure student movement to the main Christian witness in British universities.⁹

As the IVF attempted to promote conservative evangelicalism on university campuses the lack of intellectually sound conservative biblical scholarship became apparent. For a generation the best work seemed to come from liberals unconcerned with maintaining traditional views of the Bible's inspiration or upholding orthodox doctrine. Johnson and others expended tremendous energy towards improving the situation. The Biblical Research Committee was formed in 1938 as a tool to help foster conservative scholarship. In 1945, Tyndale House began providing a place for advanced study through its residential and research library.¹⁰ Success in this area became apparent as greater numbers of conservatives began earning first-class degrees from Cambridge, bringing academic integrity to their work.

Johnson's efforts to enrich evangelical thinking were not limited to theology and biblical studies. He was equally convinced of the need for the church to engage a broad range of disciplines and for clergy to be familiar with practical issues often far removed from their religious training. As a result, the IVF began forming graduate fellowship groups in areas ranging from medicine to education to history. Among the earliest groups was one for scientists. Although Johnson seems to have been suspicious of

⁸ Douglas, Johnson, ed. *A Brief History of the International Fellowship of Evangelical Students* (Lausanne: The International Fellowship of Evangelical Students, 1964), 19-20.

⁹ Oliver Barclay to author Sept 29, 2008, cf. Oliver Barclay, *Evangelicalism in Britain, 1935-1995* (Leicester: Inter-Varsity Press, 1997), 47ff.

¹⁰ Noble, *Research for the Academy*; F. F. Bruce, "The Tyndale Fellowship for Biblical Research," *The Evangelical Quarterly* 19:1 (January 1947): 52-61; Barclay, *Evangelicalism in Britain*, 48.

evolutionary theory, he was convinced that Christians should be at the leading edge of scientific research.¹¹ The result was the Research Scientists' Christian Fellowship.

Founding the Research Scientists' Christian Fellowship

To start a scientific graduate fellowship, DJ turned to Oliver R. Barclay, a promising young graduate student who became the driving force behind the Research Scientists' Christian Fellowship (RSCF) for more than forty years. Barclay organized a science and faith conference at Ridgeland College in April 1944 that, though small and lacking reputable scientists, evinced the adroit administrative skills for which he would become widely respected. The meeting included eight papers from five authors dealing with topics including the scientific method, the relationship between scientific and religious knowledge, and teleology and determinism.¹² Immediately following the meeting, Barclay published a report that included summaries of the papers and a suggested reading list (which will be discussed below) intended to inform interested parties of the most current thought informing general attitudes towards science and religion issues. Barclay soon received his PhD in zoology from Cambridge and assumed research and teaching responsibilities there. He was by this time greatly involved in the IVF and, volunteering as the secretary for the RSCF, was soon asked to join fulltime the IVF (renamed Universities and Colleges Christian Fellowship in 1975), eventually

¹¹D. F. Ellison Nash and Douglas Johnson, *The Discipline of Leadership: Suggestions for the Organization of University Christian Unions* (London: Inter-Varsity Fellowship, 1949), 7; Douglas Johnson, *The Christian and His Bible* (London: Inter-Varsity Fellowship, 1960, 1953), 83, 90-91.

¹²Oliver Barclay, *Christianity and Science: the report of a preliminary conference of Science Research Workers arranged by the Graduates' Fellowship of the I. V. F. at Ridgeland College, April 21st to 24th, 1944* (Cambridge: Inter-Varsity Fellowship of Evangelical Unions, [1944]).

serving as General Secretary from 1965 to 1980.¹³ Barclay's diverse interests and strategic mind suited him well as he led the RSCF and IVF through formative periods of their history. He remained significantly involved in both groups well into the 1990s.

The earliest years of the RSCF were unremarkable on many counts. Membership was low and included few established scientists.¹⁴ With the exception of Professor G. C. Steward, a mathematician at Cambridge, all of the participants at the initial meeting in 1944 were graduate students.¹⁵ Gordon Barnes, an enduring figure with the now three-quarter-century old Victoria Institute, R. E. D. Clark, a prolific author and faithful member of the RSCF during its early development, and R. J. C. Harris, a cancer researcher who worked at the Chester Beatty Research Institute and the Imperial Cancer Research Fund before becoming Director of the Microbiological Research Establishment in 1971, were, along with Barclay, the most prominent early figures within the group. Harris served as chairman of the RSCF during its first decade.¹⁶

From the start the nascent organization worked to share the fruits of its labor and to begin defining the group's public image. By May of 1944, R. E. D. Clark began editing a short journal entitled *Current Notes & Abstracts on Science and Theology*, which carried summaries of RSCF conferences papers, book reviews, and announcements of important events. In 1948, the RSCF began reaching a broader audience when *Notes*

¹³Douglas Johnson, *Contending for the Faith: A History of the Evangelical Movement in the Universities and Colleges* (Leicester: Inter-Varsity Press, 1979), 230.

¹⁴Information about membership comes from a database compiled by the UCCF in 1994 and given to me by Bennet McInnes. I have attempted to supplement the information, but it remains incomplete. I estimate that the database represents approximately 75% of the actual membership.

¹⁵Oliver R. Barclay to author, 27 March 2008.

¹⁶Oliver R. Barclay to author, March 27, 2008; Oliver R. Barclay, "The Inter-Varsity Fellowship of Evangelical Unions, Second Conference for Scientific Research Workers," no date given [Spring/Summer, 1945], RSCF Papers.

& Abstracts was discontinued and RSCF material was included in the *Christian Graduate*, a larger IVF publication that included material from each of the graduate fellowship groups.¹⁷ As a result, select RSCF papers reached an audience considerably larger and more diverse than their own publication could attract.

The RSCF's dedication to the apologetic needs of research scientists was evident from the beginning. The adoption of the organization's name in 1950 conveyed this commitment.¹⁸ Yet the group soon became convinced that its work would also prove valuable to the wider church. By 1951, it circulated a short document that affirmed its relationship with the IVF and defined three chief aims:

- (1) To clarify our own thinking on problems of science and faith and to develop as far as possible a consistent Christian view in these matters
- (2) To pass on to other Christians such fruits of our own activities as may help them in their own thinking and in their witness . . .
- (3) To use such material to further witness amongst people of scientific training and generally to help to evangelize the "scientific" world.¹⁹

This short statement affirmed three main desires: the freedom to discuss openly any issue that might pertain to Christian faith and science, the hope that the group's work would benefit others wrestling with the issues, and the desire to be a Christian witness to the scientific world. As psychologist and longtime RSCF leader Malcolm Jeeves later described, the group's commitment to reaching research scientists was guided by a

¹⁷Oliver R. Barclay, "Newsletter," January 28, 1948, RSCF Papers.

¹⁸[Oliver R. Barclay], "RSCF Newsletter," May 1950, RSCF Papers. The RSCF was known under a series of names such as the Science Research Workers and the Research Scientists' Group until 1950.

¹⁹[Oliver Barclay], "Research Scientists' Christian Fellowship," [1951], RSCF Papers.

desire to be salt and light where they were missing.²⁰ Only two stipulations were made for membership: individuals had to be members of the IVF Graduates' Fellowship, i.e. to have sided with conservative evangelicalism, and had to be actively engaged in scientific research.

The RSCF's ambitions led the group to engage in a variety of activities. Hoping to gain the attention of the scientific community, the organization coordinated public lectures during meetings of the British Association for the Advancement of Science (BA) in various places within the UK. One such lecture on the topic "The Place of Science in Christian Faith" featuring the theoretical chemist C. A. Coulson and Sir E. John Russell, British agriculturalist and Fellow of the Royal Society, was held during the BA meeting in Edinburgh in 1951. A similar meeting on "Science and Irreligion" featuring early RSCF member Malcolm Dixon and Professor H. W. Rodgers, a well-known gastroenterologist at Queen's University, was held in Belfast in 1952.²¹ In 1952, quarterly meetings began in London intended to increase the rigor of the annual meetings by vetting and exploring ideas beforehand.²² In the same year, the RSCF took steps in reaching a broader audience when select members offered two series of BBC Broadcast Talks on the Home Service, later published as *Science and Faith To-Day* and *Where Science and Faith Meet*.²³ Meanwhile, attention turned to secondary students as the

²⁰Malcolm Jeeves, interview with author, August 11, 2008.

²¹Advertisements for meetings in RSCF Papers.

²²[Oliver R. Barclay], "Newsletter," November 1952, RSCF Papers.

²³[Oliver R. Barclay], "Newsletter," August 18, 1952, RSCF Papers; [Oliver R. Barclay], "Newsletter" November 1952, RSCF Papers; John Ballie, Robert Boyd, Donald MacKay, Douglas Spanner, *Science and Faith To-Day* (London, Lutterworth Press, 1953); James B. Torrance, Donald M. MacKay, Malcolm Jeeves, Robert L. F. Boyd, Oliver R. Barclay, *Where Science and Faith Meet* (London, Inter-Varsity Fellowship, 1953).

RSCF began participating in the educational Dale Fort courses in Wales and to offer other field courses for schoolboys interested in applied science.²⁴ By the middle of the decade there was considerable participation in some of these programs, with fourteen students participating in the field courses and forty students booked for Dale Fort during summer 1954.²⁵

Thus, the group's first decade included events that helped broaden its vision and raise its level of thinking. Driving this development were two factors. First was Barclay's faithful guidance and steady orchestration of the annual conferences. Each year Barclay and the RSCF committee selected a central topic for the meeting and identified several subtopics pertinent to the issues. He then recruited one of the local groups around the country to address one of the subtopics and write a paper as a group based on their discussions. The various papers were then distributed to RSCF members before the annual meeting so that responses might be formulated ahead of time. At the annual meetings, which were frequently held at the offices of Inter-Varsity Press in Bedford Square in London, ten minutes were given to an oral summary of each paper, with the remainder of the time dedicated to discussion and debate. This format fostered considerable reflection and thoughtful debate over key issues.²⁶

Equally important was the organization's increasing membership. By the time of the second conference in 1945, Malcolm Dixon (1899-1985), an esteemed biochemist

²⁴The Dale Fort Field Study Courses were established in 1948 by the Field Studies Council (an organization committed to environmental education) as a means for educating youth about the natural world.

²⁵Newsletter, August 19, 1954, RSCF Papers.

²⁶Walter Hearn to author, July 29, 2009; Malcolm Jeeves to author June 11, 2010. Location for annual meetings was listed as 39, Bedford Square, London, W.C.1. until 1959. Thereafter, the location was frequently identified as Bedford College, London.

who had been elected Fellow of the Royal Society in 1942, joined the organization.²⁷ Thus began a pattern of attracting individuals of both vigorous evangelical faith and prestigious scientific achievement. Growth remained steady throughout the remainder of the decade as other rapidly advancing young scientists, most former CICC members, joined the group. Prominent figures included biologist Douglas Spanner, psychologist Malcolm Jeeves, and physicist John Polkinghorne. Membership doubled twice between 1947 and 1957. Of the more than thirty colleges and universities represented, the majority of members received degrees from Cambridge (23%), Oxford (14%), Imperial College, London (5%), and Birmingham University (5%). Men made up 93% of the organization. Physicists and chemists were most numerous, comprising 20% and 15% of the group, respectively. Mathematics and biology claimed 5% of members each, with the combined sciences (any combination of biology, chemistry, and physics) represented by another 9%. Other disciplines included agriculture, botany, engineering, medicine, and psychology.

During these crucial years three men appeared who would prove instrumental in the organization's future development. R. L. F. Boyd (1922-2004), later Sir Robert Boyd, became the leading figure in the British space program and was from 1965 to 1983 the director of the Mullard space science laboratory.²⁸ His profound faith and acclaimed scientific achievements helped make him a much admired figure within the RSCF. R. Hooykaas, Professor of History of Science at the Free University, Amsterdam, helped bring a keen sense of historical awareness to the group. He was originally introduced to

²⁷RSCF, *Current Notes and Abstracts* 3 (1946): 1.

²⁸Obituary, <http://www.guardian.co.uk/science/2004/feb/11/obituaries.spaceexploration> (accessed November 6, 2008).

the RSCF through the Welsh Reformed preacher D. Martyn Lloyd-Jones (1899-1981) and became a guiding figure in the group's theology and development.²⁹ Most important was Donald M. MacKay, a pioneering neuroscientist who helped shape the thought and direction of the RSCF from the time he joined the group in 1948 until his untimely death in 1987.³⁰ Thus, by the late 1940s the RSCF was building considerable momentum. Membership was on the rise, clear goals had been developed, and key figures were in place to steer the organization.

Reconciling Science and the Bible

Though the RSCF was started with goals similar to those of the ASA, to demonstrate the compatibility between modern science and Christian faith, the founders of each group held considerably different assumptions about these challenges. From the beginning, the RSCF leaders were convinced that the issues stemmed not from a conflict between Christianity and science, but from a clash between theism and naturalism. That is, the conflict lay not with scientific theories or ideas, not even with evolution, but with the way science was used to justify philosophical materialism.

RSCF leaders, for the most part, agreed with the scientific consensus regarding natural selection. As a zoologist, Barclay had no qualms acknowledging the validity of evolution. Pointing to its near unanimous acceptance by the scientific community and the recent confirmation provided by the field of genetics, he argued that it was reasonable to

²⁹Oliver Barclay to author, March 27, 2008, 3.

³⁰Oliver R. Barclay, "RSCF in Historical Perspective," *Science and Faith* 10 (November 1988): 7.

grant that the theory may be “recognized as a scientific fact.”³¹ Although some questions remained, he noted, the overall agreement among scientists regarding evolutionary descent was conclusive. Some RSCF members remained strongly opposed to evolutionary theory, most notably R. E. D. Clark, whom Barclay later described as one of the most reasoned critics of evolution, but the majority did not. The Edinburgh RSCF group’s acknowledgement of both the validity and boundaries of evolutionary theory represents the prevailing view among the overall membership. Drawing upon Princeton theologian Charles Hodge’s distinction between the *ex nihilo* creation of Genesis 1:1 and the creative acts that followed, the Edinburgh group argued that “while the ultimate origin of the universe is not a matter for scientific study and statement nearly all scientists are agreed that gradual development has been the dominant process in what is called secondary creation.”³²

Despite this overall acceptance among RSCF leaders, they nevertheless understood that evolution posed notable challenges for the church. Still, the problem lay not with the theory itself, they insisted, but with the materialistic assumptions it seemed to imply and the way it could be seen as undermining fundamental Christian views of creation and human nature.³³ At the initial RSCF meeting in 1944, G. C. Steward noted such distinctions when he targeted philosophical materialism as the true

³¹ Barclay, “The Meanings of the Word Evolution in Biology and Their Bearing on the Christian Faith,” *JTVI* 78 (1946): 96, 98-99.

³²Edinburgh RSCF Group, “Modern Ideas of Evolution” (paper presented at the RSCF Annual Conference, no location given, 1958), 9; cf. Charles Hodge, *Systematic Theology* vol 1 (New York, Scribner, Armstrong, and Co., 1873), 556.

³³Oliver R. Barclay, “The Meanings of the Word Evolution,” 97.

opponent of religious faith.³⁴ In a paper delivered to the Victoria Institute in 1946, Barclay echoed this sentiment. Although he recognized that the challenges stemming from evolution were “considerable,” he argued that the conflict did not involve the theory specifically, but rather its erroneous application in other fields: “the main conflict has arisen over philosophical issues which have no necessary connection with the findings of science and ought never to have been associated with the word ‘evolution.’”³⁵ Other members acknowledged the theory’s challenge of the theological concepts of creation, divine action, and the fall.³⁶ As a result, some aspect of evolution was dealt with at nearly every annual conference between 1945 and 1965. The 1945 conference was devoted to evolution, the 1958 conference to creation. The conferences of 1948 and 1956 were held under the respective titles “The Christian View of God and the World” and “The Fall.”

Two issues most concerned the RSCF: the use of evolution to support faith in progress, and its use to support scientism, the view that science answered ultimate questions about life and the world. The conflation between evolution and progress was strongest in the decades surrounding the turn of the century.³⁷ By the 1930s, many had come to see wars, depression, and the resurgence of Darwinism as a definitive refutation of progressivism. Nevertheless, a considerable group of thinkers could not abandon the ideal. None was more prominent than the avowed humanist Julian Huxley. For him, the progress displayed through evolution revealed the moral purpose of the universe and the

³⁴G. C. Steward, “Religion and Science” as reported in *Christianity and Science*, 3.

³⁵ Oliver R. Barclay, “The Meanings of the Word Evolution,” 97, 101.

³⁶For example, J. N. Hawthorne, “1850 to the Present Day” (paper presented at the RSCF Annual Conference, London, September 26, 1953), 23-24.

³⁷E.g., Henri Bergson’s *Creative Evolution* (New York: Henry Holt and Co., 1911).

path for humanity's spiritual fulfillment.³⁸ The RSCF rejected this view, arguing that evidence for evolution could not support confidence in progress. Barclay affirmed that natural selection led to adaptive changes, but such changes did not entail progression because progress included more than increased physical complexity. If progress could be detected, he stressed, naturalistic philosophies would have difficulty explaining its occurrence:

Has progress occurred in the course of descent with modification? To this it may be answered that there may have been an increase of physical complexity, but that there has been progress in any ethical or moral sense we have no evidence. If there has been an increase in physical progress in any sense, however, some serious difficulties are raised in the way of a mechanistic explanation [I]f there has been a real decrease of 'entropy' . . . it seems necessary to postulate Divine control over whatever mechanism has been responsible.³⁹

In other words, claiming progress rather than modification claimed too much for naturalistic philosophy, and recognizing progress argued against it. This protest against progressivism put the RSCF squarely on the side of prominent trends in twentieth century science.⁴⁰

The challenges of scientism came not just from naturalistic scientists and philosophers. The more significant problem came from the growing popular sense that scientific explanations for natural events were final, leaving no room for the supernatural. Natural selection was a particular concern in this regard, because it seemed to contradict the biblical narrative and to replace the miracle of creation with mundane natural laws. Since natural selection was so widely accepted, Barclay noted, "people have jumped to

³⁸Huxley, *Evolution: A Modern Synthesis*; Howard L. Kaye, *The Social Meaning of Modern Biology: from Social Darwinism to Sociobiology* (New Brunswick, New Jersey: Transaction Publishers, 1997, originally published by Yale University Press, 1986).

³⁹Barclay, "The Meanings of the Word Evolution," 100.

⁴⁰See also, Oliver R. Barclay, "Evolution and Progress: Are Cultural Changes Evolutionary?" *Current Notes and Abstracts on Science and Theology* 3 (1946): 5-6.

the conclusion that this is the entire explanation and that it disposes altogether of the Christian idea of God's creation."⁴¹ Mary Boyd, a founding member of the RSCF and committee member from 1956 to 1958, noted similar problems in secondary education where the need to over-simplify the problems often left the impression that science provided all the answers about the natural world.⁴²

With these challenges in mind, Barclay included a suggested reading list in his report of the 1944 conference that was intended to set the group's work within the milieu of the most important scientific and theological discussion touching science and faith issues. The list included notable champions of science including Arthur Eddington, C. H. Waddington, J. D. Bernal, and J. G. Crowther as well as popular anti-Christian writers such as Julian Huxley and A. J. Ayer. As discussed in chapter two, these works represented a shifting mood among many professional scientists in which theistic claims were increasingly rejected and faith in scientific progress seemed unbounded (Eddington, of course, being a prominent exception).

Barclay's list also recommended key theological works that reveals his earliest convictions about the relationship between science and theology and his strong affinity for Calvinist theology. The most prominent works were Abraham Kuyper's *Lectures on Calvinism* (1931, originally published as *Calvinism; Six Lectures Delivered in the Theological Seminary at Princeton*, 1899), Francis Patton's *Fundamental Christianity* (1928), and James Orr's *Christian View of God and the World* (1907). Kuyper (1837-1920), the revered Dutch statesman and theologian, made great claims for assuaging the

⁴¹ Barclay, "The Meanings of the Word Evolution," 101.

⁴² Mary Boyd, "The Teaching of Biology" (paper presented at the RSCF Annual Conference, no location given, 1952), 7-8; Mary Boyd bears no relation to R.L.F. Boyd.

potential conflict between science and faith and in affirming the value of studying the natural world.⁴³ More than a few RSCF members shared his denial of conflict between science and faith and his insistence that genuine faith leads to science.⁴⁴ Francis Patton (1843-1932), who served as president of Princeton University (1888-1902) and Princeton Theological Seminary (1902-1913), articulated the Princeton tradition of accepting evolution without abandoning conservative theology. Scottish theologian James Orr was similarly helpful.⁴⁵ The most surprising work on the list was Karl Barth's *The Knowledge of God and the Service of God According to the Teaching of the Reformation* (1939). The inclusion of Barth, a relentless opponent of natural theology, suggests both the reach of his influence as well as Barclay's willingness to glean from diverse theological perspectives and desire to protect the RSCF against liberal tendencies. Barth's reminder of the limits and weaknesses of natural theology provided a valuable safeguard against modernism and cautioned those who might be tempted to claim too much for science.

Nevertheless, helpful as these works were in affirming and grounding a warm appreciation for natural theology and a justification for scientific study, they were of limited help in addressing the more direct issues confronting Christian research scientists.⁴⁶ The chronological disparity between the scientists and theologians on Barclay's list evinces the dearth of evangelical scholarship willing to engage scientific

⁴³Abraham Kuyper, *Calvinism; Six Lectures Delivered in the Theological Seminary at Princeton* (New York, F.H: Revell, 1899), 153-176.

⁴⁴Kuyper, *Calvinism*, 173.

⁴⁵[Oliver R. Barclay] "Newsletter," 1945, RSCF Papers.

⁴⁶Oliver Barclay to author, March 27, 2008, cf., Barclay, Newsletter, 3 August 1948, RSCF Papers.

issues between the death of James Orr and the 1950s. The theologians included were of the previous generation, writing at a time when Darwinism was still eclipsed by other theories and scientists were generally sympathetic towards non-materialistic views. The scientists represented the contemporary generation – emboldened by scientific progress, confident in its importance for modern life, and largely uninterested in religious claims.

Informed by such theology, the RSCF's early apologetic efforts were an unfocused use of outdated arguments that appeared ignorant of modern scientific methodology. In 1944, Professor Steward argued that the source of the conflict was not scientific facts but scientific theories.⁴⁷ When in 1946 Oliver Barclay addressed the question of evolution and Genesis, he claimed the day-age theory, suggesting that by seeing the days as long periods of time the conflict might be resolved.⁴⁸ Though these early efforts displayed an earnest attempt to reconcile science and Christianity, many of them were later rejected by the majority of RSCF members. Not until Donald M. MacKay and R. Hooykaas joined the group did the RSCF settle on a fundamental approach by which it could address the issues.⁴⁹

Donald MacCrimmon MacKay (1922-1987) was a pioneer in the field of brain research at a time when behaviorism was reaching its apogee and computer technology was revolutionizing science's views of intellectual activity. Born to a northern Scottish family that included several ministers of the Free Church, MacKay earned an undergraduate degree in science from St. Andrews University in 1943 and a PhD in

⁴⁷G. C. Steward, "Religion and Science" reported in *Christianity and Science: The report of the preliminary conference of Science Research Workers*, (1944), 3

⁴⁸Barclay, "The Meanings of the Word Evolution," 97.

⁴⁹Barclay, "RSCF in Historical Perspective," 7.

physics from the University of London in 1951. From 1946 to 1960 he served as lecturer at King's College (University of London) where he worked alongside C. A. Coulson. In 1960, he went to the University of Keele to develop the department of communication and neuroscience. He remained there until his retirement in 1982. MacKay's work in neuroscience and artificial intelligence and his robust evangelical faith gave him a keen awareness of the potential conflict between Christianity and science. His efforts to demonstrate the harmony between the two helped him become known in the fields of philosophy and theology as well as science.⁵⁰

In 1948, the same year MacKay joined the RSCF, he met a Dutchman named Reijer Hooykaas (1906-1994), one of the founders of the field of the history of science. Trained as a chemist, Hooykaas's interest in history and the relationship between science and religion was apparent as early as 1934, when he delivered a lecture entitled "Science and Religion in the Light of History" at the Free University of Amsterdam. He served as the first Chair of the History of Science at the Free University from 1945 to 1966. In 1967, he moved south to assume the same position at the University of Utrecht, where he stayed until 1976.⁵¹ His scientific and philosophical acumen combined with his Dutch Calvinist theology resonated with RSCF leaders and helped make him a welcome contributor to RSCF affairs.

⁵⁰[Oliver R. Barclay], "Professor Donald MacKay and the Research Scientists' Christian Fellowship" *Science and Faith Newsletter* no. 9 (May 1988): 5-9; J. W. Haas, Jr. "Donald MacCrimmon MacKay (1922-1987): A View From the Other Side of the Atlantic," *PSCF*, 44 (March 1992), 55-61; Oliver Barclay, "Foreword," in *The Open Mind and Other Essays*, ed., Melvin Tinker (Leicester: InterVarsity Press, 1988).

⁵¹ John Hedley Brooke and Michael Hunter, "Foreword," in R. Hooykaas, *Robert Boyle: A Study in Science and Christian Belief*, with a foreword by John Hedley Brooke and Michael Hunter (Lanham, Maryland: University Press of America, 1997), vii-xix; "Reijer Hooykaas (1906-1994): A Modern Advocate for *Philosophia Libera*," *PSCF* 48, no. 2 (June 1996): 98-103.

Hooykaas' views were profoundly shaped by his Dutch Calvinist background and early study of the seventeenth-century English chemist Robert Boyle.⁵² Hooykaas found three key themes in Boyle's work that later characterized his own convictions of the proper Christian view of science: that natural theology was a form of revealed religion, that science was rightly concerned only with secondary causes, and that secondary causes (i.e., natural laws) were part of divine providence and therefore not opposed to divine action.⁵³ Stemming from the first two themes, Hooykaas found tremendous freedom for the scientific enterprise. From the third, he believed that the proper Christian view of divine action in creation did not distinguish between the 'laws of nature' and the work of God; divine action need not be relegated to particular 'miraculous' moments and events that were scientifically inexplicable.

At a time when many saw Christianity as an obstacle to unfettered scientific investigation, Hooykaas argued that the freedom necessary for science was implied in the biblical concept of liberty. "What the Bible urges upon man" he wrote "is a complete transformation in his relations to God and his fellow-creatures . . . a liberation from any kind of idolatry, including the idols of 'common opinion' and 'official doctrine.'"⁵⁴ It was no wonder, Hooykaas argued, that the scientific revolution occurred when and where it did. Even Christianity had to be freed from the limitations of dogma and tradition. Once the proper religious setting was in place and the Bible was "rightly interpreted,"

⁵²R. Hooykaas, *Robert Boyle: een studie over natuurwetenschap en Christendom* (1941), English translation, *Robert Boyle: A Study in Science and Christian Belief*, with a foreword by John Hedley Brooke and Michael Hunter (Lanham, Maryland: University Press of America, 1997).

⁵³Hooykaas, *Robert Boyle*, 77-81.

⁵⁴Hooykaas, *Philosophia Libera: Christian Faith and the Freedom of Science* (London: Tyndale Press, 1957), 14-15.

science flourished.⁵⁵ The result was the realization that “the Bible teaches that we and all things around us have been created by the sovereign will of God and that man is the crown of creation. This means that no realm of nature, not even her inmost secrets, is forbidden ground to human investigation.”⁵⁶ For Hooykaas, this freedom was not unique to Christians. It was offered to all who used their abilities to discover the truths of creation: “This is perhaps in a certain respect a rather disappointing conclusion: the *philosophia libera* is no elaborate system, not even an elaborate *Christian* system, which takes away from us the duty of thinking things out for ourselves. It is the freedom of the children of God.”⁵⁷ This line of thinking meant that the Christian view of the world was merely the best view of the world, the Christian view of humanity simply the most complete view of humanity, and the Christian view of science no less than the most favoring view of science. As a result, science was granted full freedom to discover as much as it could about God’s creation.

Hooykaas’s views of the freedom of science were connected in no small way to his understanding of the relationship between divine action and natural law. For many, the increasing ability to explain natural phenomena without reference to divine action prompted at best a greater willingness to leave God out of the discussion or at worst a willingness to argue that science had dispelled the need for a personal God. In response many Christians sought ways to preserve belief in divine action by searching for evidence of his miraculous intervention. Unfortunately, according to Hooykaas, this approach did injustice to Christianity by emphasizing God’s activity only in the areas where science

⁵⁵Hooykaas, *Christian Faith and the Freedom of Science*, 12-15, 17-21.

⁵⁶Hooykaas, *Christian Faith and the Freedom of Science*, 15.

⁵⁷Hooykaas, *Christian Faith and the Freedom of Science*, 24.

was ignorant. Hooykaas regarded this so-called ‘god-of-the-gaps’ view of divine activity as semi-deism. Those who stressed God’s interaction only in areas of scientific ignorance and acknowledged the basic scientific and metaphysical assumption of their opponents, in effect, “grafted a ‘theistic’ branch on the deistic tree.”⁵⁸ The result was a conflict between competing views of the world in which the rules and assumption of science were uncritically accepted by Christians. Describing the debate between materialists and Christians, he wrote:

each new victory of scientific ‘law’ was regarded as a triumph not only of science, but also of the ‘scientific view of life’, whereas each alleged proof of ‘miracle’ or ‘divine intervention’ was considered as a triumph of religion. This shows that the antagonists fought their battle on a common ground and that they had more affinity than they realized themselves. The orthodox unwittingly left the choice of the battleground and the weapons to their opponents Theists and deists started from the common assumption that science could decide the issues.⁵⁹

In other words, because science was allowed to define the terms of the debate, science was winning.

In contrast, Hooykaas argued that by ignoring the dichotomy between natural law and divine action the Bible effectively undermined the ‘god-of-the-gaps’ idea: “it does not regard wonder and law as mutually exclusive. In the Bible a miracle is not considered as an *intervention* in a world that otherwise runs its own course; rule and exception to the rule are equally wonderful to religious contemplation. God’s activity is behind *every* thing, however unimportant it may seem.”⁶⁰ The implication, Hooykaas concluded, was that “The scientist, even when he is a believer, is bound to try as far as

⁵⁸R. Hooykaas, *The Principle of Uniformity in Geology, Biology and Theology* (Leiden: Brill, 1963), 192-93.

⁵⁹Hooykaas, *The Principle of Uniformity*, 204-205.

⁶⁰Hooykaas, *The Principle of Uniformity*, 206.

possible to reduce miracles to regularities; the believer, even when he is a scientist, discovers miracle in the most familiar things.”⁶¹

Hooykaas’s ideas resonated strongly with MacKay and the rest of the RSCF. The implications of *philosophia libera* and Hooykaas’s historical perspective richly enhanced their thinking. Most importantly, MacKay, like Hooykaas, thoroughly denounced the god-of-the-gaps model:⁶² “For Biblical writers” MacKay insisted, “there was no such dichotomy.”⁶³ “We err with the materialist,” he continued, “if we allow ourselves for a moment to divide processes of nature into the ‘purely mechanistic’ (in which we see no trace of God’s activity) and the ‘vital’ (through which we suppose the spiritual and mental realms to affect the mechanistic).”⁶⁴ Thus, Christians who attempted to claim for God only those areas where science failed to speak unnecessarily divided the world into the natural and the supernatural. According to MacKay, such bifurcation was prompted by a fundamental flaw in the science-religion dialogue: the inability to make sense of seemingly contradictory ideas of the world.⁶⁵ The corrective was complementarity.

The concept of complementarity came from the work of Danish physicist Niels Bohr (1885-1962) and his attempt to explain how mutually exclusive sets of experimental data could be equally true, though seemingly contradictory.⁶⁶ Working as one of the

⁶¹Hooykaas, *The Principle of Uniformity*, 206.

⁶²Donald M. MacKay, “Looking for Connections” *Where Science and Faith Meet*, 15.

⁶³ Donald M. MacKay, “The ‘Electronic Brain’ and its Philosophical Implications – Some Introductory Notes,” *Christian Graduate* 2.3 (1949): 86, emphasis original.

⁶⁴ Donald M. MacKay, “The ‘Electronic Brain’ and its Philosophical Implications – Some Introductory Notes,” *Christian Graduate* 2.3 (1949): 86.

⁶⁵Donald M. MacKay, “Looking for Connections,” in *Where Science and Faith Meet*, 15-17.

⁶⁶See Gerald Holton, “The Roots of Complementarity,” *Daedalus* 117, no. 3 (Summer 1988): 151-197.

pioneers in the field of quantum mechanics, Bohr attempted to help solve the measurement problem in modern physics by arguing that every experiment included an interaction between subject and object that affects the outcome of the experiment. He argued further that the apparent contradiction implied by the use of competing models for understanding some quantum particles (e.g., light) can be reconciled as long as one understands that the models measure distinct aspects of the object of study and that each model is unable to detect and may obscure the data of the other. Bohr's ideas meant that scientists had to abandon the classical assumptions of objective observation. The observer is a participant in the experiment, and models are valid only for understanding one aspect of phenomena.⁶⁷ The wave model can only detect the wave-like aspects of light, the particle model only the particle-like aspects. Neither model disproves the validity nor predicts the outcomes of the other.⁶⁸

For MacKay, the logic of Bohr's complementarity had profound implications for the science-religion debates because of its ability to help overcome the reductionism often implied by the disagreeing parties. Scientists looked at the world as a self-consistent, closed physical system and attempted to understand that world on its own terms. Christians looked at the world as an open system with more processes and events occurring than meet the scientific eye. Only when one accepted the validity of both perspectives could one avoid the potential conflict between them.⁶⁹ For MacKay's work in neuroscience this meant that it would be foolish to expect scientists to locate some

⁶⁷ Ian G. Barbour, *Religion and Science: Historical and Contemporary Issues, A revised and expanded edition of Religion in an Age of Science* (New York: HarperCollins, 1997), 169-170.

⁶⁸ Ian G. Barbour, *Religion and Science*, 121, 166-170; Peter J. Bowler and Iwan Rhys Morus, *Making Modern Science: A Historical Survey* (Chicago and London: The University of Chicago Press, 2005), 265-270; John Hedley Brooke, *Science and Religion*, 329, 331 .

⁶⁹ Donald M. MacKay, "Persons and Things," *Science and Faith To-Day*, 33-35.

aspect of the brain where physical laws were disobeyed, thus proving the mind as something other than a product of natural forces. The scientific understanding of the mind as a product of matter in motion was perfectly justified; the naturalist's claim that it was merely such a product was not. As MacKay wrote in 1949:

The scientific method has been compared to a net, which can give knowledge only of those aspects of reality which it can catch. The kind of description which it can give 'passes by' spiritual truths; the Christian's belief that God controls the universe, for example, has never had any bearing on scientifically ascertained probabilities, far less any inconsistency with them.⁷⁰

But there was more to complementarity than merely protecting the Christian view of the world. In his 1952 BBC address MacKay emphasized that only by making use of the concept could one arrive at the fullest understanding of the world:

To keep scientific and Christian doctrines rigidly apart would be silly as well as potentially dishonest. To try to make them into one by chopping bits from each and pasting them together, or by treating them as rival ways of giving identical information, would be equally to miss the point. We can come to relate them properly only by holding both constantly together in our minds, until little by little there comes to us some glimmering of that greater whole of which they present complementary aspects, the activity and character of God himself: not God seen only in the gaps of the scientific picture, not God deduced only as the conclusion of a scientific argument, but God revealed as the Author of the whole story.⁷¹

Thus, complementarity not only justified the Christian and scientific views of the world, it also makes proper interaction between them possible.

It is difficult to determine the first writer to apply the idea of complementarity to the religion-science dialogue. Bohr himself recognized the implications his idea could have on topics far afield from physics and attempted to establish complementarity as a new epistemological principle that could apply to disciplines ranging from biology to

⁷⁰MacKay, "The 'Electronic Brain,'" 86.

⁷¹MacKay, "Looking for Connections," 17.

ethnology to anthropology.⁷² Some have found traces of complementarity in the metaphysical writings of A. N. Whitehead (1861-1947).⁷³ Historian of science Peter Bowler has credited the renowned theoretical chemist C. A. Coulson (1910-1974) as marking the start of a new direction in science and faith dialogue. Bowler credits Coulson's *Science and Christian Belief* (1955) as the first significant discussion of complementarity between science and religion.⁷⁴ The preceding discussion has shown that MacKay's development occurred at the same time as Coulson's, which is not surprising given that they both taught at King's College in the University of London at this time.⁷⁵ Regardless of priority, MacKay was often remembered by RSCF members as the one who drew out fully the ramifications of complementarity, and who, through his adroit use of metaphors, made it familiar to the wider public.⁷⁶

A comparison of MacKay and Coulson's uses of complementarity underscores an important perspective in MacKay's logic. Like MacKay, Coulson denounced the god-of-the-gaps mentality, saw science as a means of revelation, and saw complementarity as a useful model for reconciling scientific and theological claims.⁷⁷ His most remembered

⁷²Holton, "The Roots of Complementarity," 187-192.

⁷³E.g., Stephen David Ross, *Perspective in Whitehead's Metaphysics* (Albany, NY: State University of New York Press, 1983), 33-34; Michael Epperson critiques Ross' position, *Quantum Mechanics and the Philosophy of Alfred North Whitehead* (New York: Fordham University Press, 2004), 2-3.

⁷⁴Ian G. Barbour, *Religion and Science*, 167-170; Peter J. Bowler, *Reconciling Science and Religion*, 415-416.

⁷⁵Malcolm Jeeves to author June 11, 2010.

⁷⁶Oliver R. Barclay, "Professor Donald MacKay and the Research Scientists' Christian Fellowship," *Science and Faith Newsletter* 9 (May 1988): 5-9.

⁷⁷C. A. Coulson, *Science and Christian Belief* (Chapel Hill: The University of North Carolina Press, 1955), 64-65; Ana Simões, "Textbooks, popular lectures and sermons: the quantum chemist Charles Alfred Coulson and the crafting of science," *The British Journal for the History of Science* 37, no. 3 (September 2004): 338-342.

description involved the differing perspectives of architectural drawings. Recalling the construction of a physics laboratory during his time at the University of London, he noted that floor plans are different from elevations, and each elevation is different from the others. Yet they all describe the same building because they imagine the final product from distinct perspectives. Although they may seem at first to contradict, upon further investigation their complementary relationship becomes evident. However, if one wishes to see the building before it is complete, one cannot simply lay the drawings on top of each other, but must use an “act of reflection” to imagine the finished product: “the putting together of two or more partial views” in order gain insight rather than mere knowledge.⁷⁸ It was through this act of reflection that one was able to reconcile scientific and theological views of the world.⁷⁹

MacKay likewise emphasized the differing perspectives of science and theology. Yet rather than focusing on the directional perspectives implied in Coulson’s example, MacKay drew attention to the different levels from which science and theology achieved their conclusions. That is, while Coulson’s example focused on differing perspectives based on the direction from which one addressed the subject, Mackay emphasized differing logical levels or planes. Two people, thus, might examine a subject from the same direction and still arrive at equally valid though vastly different interpretations because each was asking a different set of questions. Each was applying a different kind of logic to the situation. Take a simple math problem on a chalk board, he often noted. A chemist who unexpectedly stumbled upon such a board could describe with complete

⁷⁸Coulson, *Science and Christian Belief*, 84-85.

⁷⁹Coulson, *Science and Christian Belief*, 67-85.

accuracy the chemical composition of the writing without attempting to discern the equation present. The message that would be plain to everyone else, that $2 + 2 = 4$, would be superfluous to the chemist's examination. It would be foolish, MacKay would say, to argue that because the chemist missed the meaning of the message that his analysis was wrong. It would be equally foolish to assume that the message was somehow less true than the chemist's conclusions. If one was to know fully the writing on the board, both views must be considered. The failure to accept either one, MacKay insisted, led to reductionism, what MacKay called the fallacy of "nothing-buttery" – "the idea that because in one sense, at one level, or viewed from one angle, there is nothing there but chalk, therefore it is unnecessary, it makes no sense, it is superfluous to talk about what is there in any other terms."⁸⁰ By the early 1970s Mackay had labeled his own emphasis on the different levels of analysis as 'hierarchical complementarity.'⁸¹

MacKay quickly became a vanguard in RSCF thought, and complementarity the prevailing view among the RSCF leadership. Frank H. T. Rhodes, for example, then Professor of Geology, University College of Swansea, argued that science provided an accurate mechanistic understanding of the world, but insisted that it remains "only one view, only one description, only one model, only one interpretation. Because it is limited by its own self-chosen method, abstractions and restrictions it can never claim to do justice to the whole of reality."⁸²

⁸⁰Donald M. MacKay, "Man as a Mechanism," in *Christianity in a Mechanistic Universe and other essays*, ed. Donald M. MacKay (Guildford and London: Inter-Varsity Fellowship, 1965), 58.

⁸¹Donald M. MacKay, *The Clockwork Image: A Christian Perspective on Science* (Downers Grove, IL, InterVarsity Press, 1974), 91.

⁸²Frank F. T. Rhodes, "Christianity in a Mechanistic Universe," in *Christianity in a Mechanistic Universe*, 38.

The rationale of complementarity resonated with the leading figures of the RSCF for two primary reasons. First, its logic, particularly its emphasis on the distinct perspectives of science and the Bible, was similar to strategies already employed by those attempting to distinguish between religious and scientific knowledge. At the initial conference in 1944, R. J. C. Harris questioned whether Christians were obligated to draw upon their Christian faith when answering scientific questions. As Christians enter the laboratory, he asked, “Are we deists or theists?”⁸³ Harris answered that scientists were justified in leaving God out of the picture, thereby adopting a deistic view in their research so long as they realized that this abstraction made finding the whole truth impossible.⁸⁴ In his 1952 BBC broadcast, R. L. F. Boyd made a similar point when he argued that the Aristotelian distinction between efficient and final causes made reconciliation between science and Christianity possible. There are two kinds of explanations for every event, he insisted. Some answer the question ‘how,’ others the question ‘why.’ The difference between the questions reflected the differences between the scientific and Christian worldviews.⁸⁵ During the 1954 annual conference on Nature and Supernature, physicist John Polkinghorne continued this theme, arguing that since “science is concerned with the question ‘how?’ and not with the question ‘why?’” supernatural facts are inaccessible to scientific investigation.⁸⁶ These men were not unaware of the disregard scientists felt for the questions of final causes, nor were they

⁸³R. J. C. Harris, “Are We Deists or Theists?,” in *Christianity and Science*, ed. Barclay, 12-14.

⁸⁴Harris, “Are We Deists or Theists?,” 12.

⁸⁵R. L. F. Boyd, “The Why and the How?,” in *Science and Faith To-Day*, 23-31.

⁸⁶John Polkinghorne, “The Scientific Worldview,” (a paper presented at the RSCF Annual Conference, 1957), 1.

advocating a return to pre-modern concerns.⁸⁷ Science had necessarily and justifiably abandoned metaphysics and was solely concerned with efficient causes. They lamented, however, that science's success led some to believe that it was asking the only legitimate questions, thereby ignoring extra-scientific categories. "Trouble is," Boyd wrote, "that we have now swung to the opposite extreme and have become so impressed with the usefulness of asking "How?" that we are liable to forget ever to ask "Why?"⁸⁸

The views of Harris, Boyd, and Polkinghorne were not identical. Harris seemed to emphasize the limited nature of scientific knowledge, while Boyd and Polkinghorne emphasized the differing questions each discipline asked. Their views were also not universally held by RSCF members, some of whom felt that despite qualifications such as distinctions supported a deistic view of the world.⁸⁹ Nevertheless, the attempt to distinguish between the Christian and scientific categories of inquiry provided fertile ground for MacKay's emphasis of the distinct perspectives of religious and scientific knowledge implied in the logic of complementarity.

The RSCF's welcome reception of complementarity can also be credited to the British predisposition for emphasizing the Bible's authority in the realms of faith and conduct, rather than its inerrancy in matters of history and science.⁹⁰ Thus, the RSCF found little need to align particular passages of scripture with specific scientific understandings. As a result, RSCF leaders quickly abandoned attempts to employ interpretations such as the gap or day-age theories. As scientists they were justified in

⁸⁷"Discussion on Teleology" in *Christianity and Science*, ed. Barclay, 13-14.

⁸⁸Boyd, "The Why and the How?" *Science and Faith To-Day*, 25-27.

⁸⁹Discussion reported in Harris, "Are We Deists or Theists?" *Christianity and Science*, 13.

⁹⁰Stephen R. Holmes, "Evangelical Doctrines of Scripture in Transatlantic Perspective," *Evangelical Quarterly* 81.1 (2009); see chapter 2.

whatever naturalistic theories seemed necessary to answer their questions without fearing that their work threatened theology.

The change in RSCF thinking was exemplified in Barclay's development between 1944 and 1952. His initial attempts to reconcile evolution and creation by way of the day-age theory reveal the desire to align specific biblical verses with scientific principles as though the two were analogous claims of natural history. Reflecting upon his own development, perhaps, he later noted that "there was a time when the relationship between science and faith was generally thought of in terms of disagreement about matters of fact."⁹¹ Such attempts, he now insisted, missed the point. Efforts to align specific verses with particular scientific conclusions fail by trying to solve the wrong problem. The goal is not to reconcile contradictory claims about creation. "The real problem is how to reconcile two different habits of mind," how to appreciate two distinct views of the same event.⁹²

Thus, by the mid-1950s, the RSCF leaders had settled on a logic with which they could work out the challenges in the science and religion dialogue. They had rejected the claims of philosophical materialism while affirming the freedom of science. Their views of miracles and divine action accommodated their faith in Providence while allowing for the abstraction of 'natural' events in scientific investigation. And their understanding of complementarity and final causes allowed them to reconcile seemingly opposed Christian and scientific claims in order to see how they might fit together. These arguments served the RSCF well for at least two practical reasons. First, from the time MacKay and Hooykaas joined the RSCF until 1956 the annual conference dealt with overarching

⁹¹Oliver R. Barclay, "A Synthesis" in *Where Science and Faith Meet*, 33.

⁹²Barclay, "A Synthesis" in *Where Science and Faith Meet*, 33.

questions about the relationship between science and religion. Issues addressed included the Christian view of God and the world (1948), the value and place of natural theology (1950), the methods and limits of science (1952), and the history of science and religion (1953). Second, as long as the RSCF dealt with topics such as these, many conservative Christians would argue, the group was asking the proper question—what can Christianity and the Bible offer to science? But in 1956 the RSCF examined the theological concept of the fall and in doing so began addressing a different question—how can science contribute to our understanding of the Bible? The result was a controversy that lasted over half a decade and revealed a key aspect of the group’s self-understanding.

Reconciling Science and Theology

For the 1956 annual conference the Fellowship decided to explore the third chapter of the book of Genesis in light of modern science under the title “The Problem of Pain, Suffering and Evil.” The first paper offered a traditional theological interpretation: the Bible was imprecise regarding the origin of physical death, but it was clear that the world had been physically affected by angelic sin and that Adam’s sin resulted in a perverted vision in which good and evil were confused.⁹³ In the second paper the Cambridge RSCF group compared the biblical account of the fall with geological evidence of earth history in an attempt to “remove misunderstandings as to the nature and effects of the fall and its effect in the material world.”⁹⁴ This paper rejected physical change in the world as a result of sin and distinguished apparent evil in the physical

⁹³M. R. W. Farrar, “The Problem of Pain and Suffering, part 1: A Traditional View” *CG*, 11 (June 1958): 51-52.

⁹⁴RSCF Cambridge Group quoted by Oliver Barclay in unpublished notes in the hand of Barclay titled “RSCF Conference 1956” located in RSCF Minutes, RSCF Papers. Unfortunately the original papers were not saved.

world from moral evil in regard to humanity.⁹⁵ The group argued for a “principle of frustration”: the idea that pain and suffering were original to creation and were essential for bringing humanity from a state of innocence to a state of maturity.⁹⁶ The violent state of the physical world was static; humanity’s relation to it was not: “We therefore cannot look to archæology and geology to provide evidence for physical changes in the world resulting from the fall. Man was merely turned out of the shelter of his first surroundings, to face up to the many difficulties that existed and that with the sorrow of his sin added to his life.”⁹⁷ Still, the authors pointed out, “In insisting that no change took place in the natural world immediately after the fall, we in no way wish to detract from the spiritual significance of the story in Genesis iii.”⁹⁸

The paper and conference prompted considerable discussion within the RSCF about the role of scientific knowledge in biblical interpretation. The next annual conference asked “When and in what sense does the Bible speak scientifically?” The opening paper, by a London RSCF Group, established the ground rules for the discussion by affirming the Doctrinal Basis of the IVF (to be discussed below) and the plenary inspiration of Scripture and by clarifying that the issues in questions dealt not with the authority of the Bible but with its interpretation.⁹⁹

⁹⁵A Cambridge RSCF Group, “The Problem of Pain and Suffering, part 2: A Scientific Interpretation,” *CG* 11 (June 1958): 56.

⁹⁶Barclay, “RSCF Conference 1956.”

⁹⁷“Problem of Pain and Suffering, part 2,” 57.

⁹⁸“Problem of Pain and Suffering, part 2,” 57.

⁹⁹A London RSCF Group, “Principles of Biblical Interpretation,” (paper presented at the RSCF Annual Conference, September 28, 1957) 2. Oliver Barclay’s pattern of using pseudonyms and the style of this paper lead me to believe Barclay was its primary author. Similar papers were offered at the 1958, 1961, and 1962 conferences.

Despite such careful qualifications, however, RSCF members continued to wrestle with key details in Genesis. At the 1958 annual meeting, F. H. T. Rhodes offered a paper entitled “Philosophical Deductions From the Facts of Cosmology and Evolution and the Effect in Other Spheres” in which he argued that although not impossible, “it is nevertheless improbable that *H. sapiens* arose from a single pair.”¹⁰⁰ RSCF groups from London and Bristol countered Rhodes’s claims. The former stated that scientifically “there is nothing inconsistent in postulating the origin of a species from a single pair . . . [; thus] to state that to believe in evolution is necessarily to disbelieve in a historical Adam into whom God breathed his Spirit, is incorrect.”¹⁰¹ The latter questioned the claim that Genesis teaches a retrograde step in the natural world, but affirmed belief in a historical fall of the first pair.¹⁰² Thus, some RSCF members clearly saw a need to affirm a historic Adam and Eve in order to aver their belief in the fall and its moral and spiritual effects for humanity.

Things became more interesting in fall 1958 after the *Christian Graduate* published a two-part article entitled “The Problem of Pain, Suffering and Evil,” which included portions of the first two papers from the 1956 conference. Significantly, the journal editor changed the title of the paper from the Cambridge group so that the

¹⁰⁰F. H. T. Rhodes, “Philosophical Deductions From the Facts of Cosmology and Evolution and the Effect in Other Spheres,” (paper presented at the RSCF Annual Conference, Bedford College, London, September 27, 1958), 33.

¹⁰¹London RSCF Group, “The Scientific Status of the Theory of Organic Evolution,” (paper presented at the RSCF Annual Conference, Bedford College, London , September 27, 1958), 21.

¹⁰²Bristol Group, “The Debate Between Theories of Cosmology and Evolution and the Christian View,” (paper presented at the RSCF Annual Conference, Bedford College, London , September 27, 1958), 29.

subheadings of the articles read “The Traditional View” and “A Scientific Interpretation,” giving the impression that the latter was the official view of the RSCF.¹⁰³

The responses the article elicited surprised the journal and the RSCF. The following issue of the *Christian Graduate* included an anonymous response entitled “‘A Scientific Interpretation’: Comments by Some Other Graduates” that took issue with the attempt to offer a “scientific interpretation of biblically revealed fact[s].” The author chastised the RSCF for exegetical speculation and for “transferring bits of the biblical revelation into an unbiblical thought-context, in the hope that [the] ‘real’ significance [of the passage] will thereby be made more plain.”¹⁰⁴ The RSCF article was accused of endorsing nineteenth-century liberalism, deism, and pantheism, of displaying theological immaturity, and of failing to take the Bible seriously.¹⁰⁵

The *Christian Graduate* and the RSCF received other complaints, but none provoked a direct response until J. I. Packer (b. 1926) revealed himself as the principal author of “Some Other Graduates.” Packer, an Oxford graduate and active member of the Oxford Inter-Collegiate Christian Union (the sister organization to the Cambridge association in which Barclay was active), was a quickly rising leader within conservative evangelicalism who was already engaging questions of the inspiration and authority of Scripture.¹⁰⁶ His *Fundamentalism and the Word of God* (1958) established him as a staunch defender of the intellectual integrity of evangelicalism and a key interpreter of evangelical orthodoxy. His semi-dialectical conviction that clarifying doctrine required

¹⁰³“The Problem of Pain and Suffering,” 50-59.

¹⁰⁴“‘A Scientific Interpretation’: Comments by Some Other Graduates” *CG* 11(1958): 112, 113.

¹⁰⁵*Ibid.*, 113-116.

¹⁰⁶Alister McGrath, *J. I. Packer: A Biography* (Grand Rapids, MI: Baker Books, 1997), 13-26.

controversy meant that he rarely shied away from disagreement and was often eager to challenge views he regarded as questionable.¹⁰⁷ When Packer wrote to Barclay and revealed himself as the letter's author, a conversation began that ended by forcing the RSCF to defend not only the validity of Christianity but also the importance of scientific knowledge in biblical interpretation.

Packer was no stranger to the RSCF. In 1955 he had delivered a paper at the group's annual conference entitled "The Extra-Biblical Testimonies Which God Has Left For Man" in which he articulated his understanding of the physical effects of the fall: "Cruelty and degeneration, parasitism and disease, and much else . . . to which the creation is now subject, would never have appeared but for Adam's sin."¹⁰⁸ Thus, the view asserted by the Cambridge group contradicted that which Packer had expounded one year earlier. Disconcerting as this might have been, a more important issue was involved. Packer's disagreement with the interpretation was overshadowed by his rejection of the method used to achieve it and the RSCF's willingness to entertain scientific ideas in exegetical discussions. He insisted that since scientific training offered no special preparation for exegesis, and since science had no authority in the work of biblical interpretation, the RSCF ought to "devote itself to studying science in light of biblical Christianity, instead of the other way round."¹⁰⁹

Consistent with his irenic spirit and diplomatic intuition, Barclay quickly recognized the damage that could result if the RSCF handled such a delicate situation

¹⁰⁷McGrath, *J. I. Packer*, 80-89.

¹⁰⁸J. I. Packer, "The Extra-Biblical Testimonies Which God Has Left For Man," (paper presented at the RSCF Annual Conference, London, September 1955), 3.

¹⁰⁹J. I. Packer, Quoted in Oliver Barclay to J. I. Packer, December 11, 1958, RSCF Papers.

without appropriate deference and caution. Accordingly, the RSCF kept from publicly responding too harshly or too quickly. Yet Barclay would not let such criticism go without reply. On December 11, 1958, Barclay wrote to Packer defending the RSCF's willingness to treat science as a legitimate voice in biblical dialogue. How, he asked, should one apply scientific knowledge to what the Bible teaches about the natural world? The Bible should be regarded as the ultimate standard for truth, he agreed, but in practice it was unrealistic to ask scientists to discard established scientific facts that speak directly to the issue in question. In order to determine the truest interpretation of a given passage, one had to consider all legitimate factors. Besides, history had proven science's legitimate role in helping interpret the Bible: "[scientists] are not ashamed of Galileo's attempts to interpret the Bible with the aid of a telescope nor of his temerity in questioning the established biblical interpretation because of what he saw Is it not legitimate to use scientific facts at least as a warning off certain interpretations?"¹¹⁰

Barclay's reference to Galileo reveals an important self-understanding among the RSCF leaders. The central methodological issue in the Galileo affair was the "problem of epistemological authority" – should cosmological views be determined by reason and the senses, by biblical revelation, or by both?¹¹¹ The RSCF was asking a similar question about geology. The difference between Barclay and Packer, Barclay was convinced, lay not in their appreciation for Scripture or in their theological commitments, but in their

¹¹⁰Oliver Barclay to J. I. Packer, 11 December 1958, RSCF Papers.

¹¹¹Lindberg, "Galileo, the Church, and the Cosmos" *When Science and Christianity Meet*, eds., David C. Lindberg and Ronald L. Numbers (Chicago and London: The University of Chicago Press, 2003), 47-49, 58.

convictions about how one determines the truth about subjects important to both science and theology.

Additionally, Barclay noted pastoral concerns that Packer seemed to miss. First, he reminded, scientists were accustomed to a specific style of intellectual inquiry in which novel and unconventional ideas are freely experimented with so as to judge their validity. Since this practice was often misunderstood outside scientific circles, the RSCF offered a place within the church where this type of discussion can take place without judgment or rejecting the Bible. Second, Christian scientists, Barclay insisted, had a responsibility to offer thoughtful answers to those who brought scientific questions or objections to the Church.¹¹²

Packer replied to Barclay within a fortnight, renewing his accusation of “speculation” and insisting that by imposing on the text views that originated outside of Scripture the RSCF had violated the basic hermeneutical principle that Scripture must be interpreted by Scripture.¹¹³ The problem was not evolution necessarily, although he was suspicious of a broad application of evolution to the Bible or faith. Rather it was the threat to the evangelical insistence on the primacy of Scripture seemingly implied in the group’s approach.¹¹⁴ The RSCF was flirting with liberalism because it was willing to give scientific knowledge too great a role in interpretation.

Ever mindful of the modernist challenges that had dominated theology since the start of the century, Packer insisted that biblical testimony trumped all extra-biblical

¹¹²Oliver Barclay to J. I. Packer, 11 December 1958, RSCF Papers.

¹¹³J. I. Packer to Oliver Barclay, December 22, 1958, transcribed in RSCF Minutes, RSCF Papers.

¹¹⁴Packer, *Fundamentalism and the Word of God* (Leicester, Inter-Varsity Fellowship, 1958), 135, 148ff.

factors, including those of science. In his 1955 RSCF paper, Packer argued that general revelation, i.e. nature, reveals only the majesty and kindness of God and humanity's dependence on him. It does nothing more – including help interpret Scripture. Any interpretive value extra-biblical knowledge has stems primarily from its ability to “vindicate the historical facts which are crucial in the redemptive message of special revelation.”¹¹⁵ (Though no “historical facts” were specified, the fall would have been included.) Scientists may ask questions of the Bible that arise out of their study of the natural world and may challenge the theologian about biblical views, Packer recognized, but all conclusions about the biblical text must be left to those trained in exegesis and theology. As soon as one used science to determine the proper meaning of Scripture one moved from exegesis to speculation. When this occurred, the Christian was under no obligation to accept this belief, even if the scientific interpretation turned out correct. Packer illustrated his point by asserting that Christians had “no obligation to assent to heliocentric theory, and Galileo had no right (theologically speaking) to try to hustle them into so doing” until the Church was satisfied that it was in accord with biblical teaching.¹¹⁶ Science may justifiably pose questions to Scripture about the natural world, but may not attempt to help provide answers. If the RSCF did not agree on this basic point, Packer insisted, “then surely I.V.F. is not a proper context for its activities.”¹¹⁷

Barclay's rejoinder asked two primary questions. Why should the RSCF's attempt to interpret the Bible in light of scientific experience constitute speculation rather than an authentic attempt at interpretation? And how can one attempt to interpret

¹¹⁵J. I. Packer, “The Extra-Biblical Testimonies Which God Has Left For Man,” 6.

¹¹⁶J. I. Packer to Oliver Barclay, December 22, 1958.

¹¹⁷J. I. Packer to Oliver Barclay, December 22, 1958.

scripture without consideration of extra-biblical knowledge? “When you say,” Barclay asked, “that Scripture is self-interpreting, do you mean that you can interpret it in a complete vacuum? . . . Would you set a celibate orphan to expound the N.T. teaching on marriage and the home with just as much confidence as a married man with a family? Is there no advantage in the exposition of biblical ethics in an experience of life?” It seemed clear to Barclay that fidelity to the biblical testimony need not ignore extra-biblical knowledge:

All that the R.S.C.F. are asking for is that when Scripture is expounded so as to refer to scientific events or statements, it should not be done in a scientific vacuum but should take account of scientific experience. This may, in Galileo’s case, involve a very considerable ‘speculation’ in the sense of trying to interpret Scriptures in a fresh way in the teeth of tradition. He was saying that the traditional interpretations of Scripture seemed clearly to be wrong. Scientific facts were being held up by him, not against Scripture, but over against traditional interpretation of Scripture.¹¹⁸

For these reasons, Barclay concluded, the RSCF was justified in exercising speculation within the proper context. To do less would be to fail in achieving its purpose.

The public controversy ended quickly. Seemingly assured of the RSCF’s overall orthodoxy, Packer wrote a letter to the editor of the *Christian Graduate*, explaining the misunderstanding and hoping to quell the undeserved slurs that had been cast on the fellowship as a whole. From the RSCF’s perspective, the correspondence between Barclay and Packer seemed to have run its course and required no further attention, though it was hoped that the *Christian Graduate* might publish a letter from Packer similar to the one he had sent to the editor. In a move suggesting quick reconciliation, Packer was selected to serve as chair for the RSCF’s 1959 annual conference. Yet the dispute exposed issues that the RSCF could not ignore. Revealing of the presence of

¹¹⁸Oliver Barclay to J. I. Packer, January 12, 1959, transcribed in the RSCF Minutes, RSCF Papers.

latent antievolutionism within the UK, accusations that the fellowship had become “appallingly heterodox” because of its evolutionary views were received from others and were quickly brushed aside.¹¹⁹ Yet Packer’s challenge required the RSCF to answer fundamental questions about itself. While the letters between him and Barclay were being exchanged, Barclay called a committee meeting to discuss key questions that had arisen. What was the role of the RSCF generally? How could it maintain the intellectual freedom necessary for honest discussion without drifting into theological error? How far should the RSCF go in correcting questionable views that might arise during their own conversations?¹²⁰

The committee met on January 21, 1959 and decided on several courses of action it thought might help avoid similar problems in the future. More caution was urged regarding the distribution and publication of conference papers; anything that might “embarrass the student work of the I.V.F. if its R.S.C.F. origin became known” was to be avoided.¹²¹ A disclaimer was included at the front of subsequent conference papers warning that individual ideas were put forward for the sole purpose of discussion and should not be quoted as representing the views of the group or the author in question. But the meeting was soon dominated by fundamental questions about the organization’s purpose and goals, and it focused on one crucial problem – how could the RSCF maintain fidelity to both freedom of scientific inquiry and the Doctrinal Basis of the IVF?

¹¹⁹Oliver Barclay to to RSCF Committee, [January 1959], RSCF Papers.

¹²⁰Oliver Barclay to to RSCF Committee, [January 1959], RSCF Papers

¹²¹RSCF Minutes, January 21, 1959, RSCF Papers.

Developed as a safeguard against the influence of liberal theology during the interwar period, the IVF Doctrinal Basis was intended to unite conservative evangelical university students around a common faith in the “divine inspiration and infallibility of Holy Scripture, as originally given, and its supreme authority in all matters of faith and conduct.”¹²² The declaration of the Bible’s inspiration and authority put the IVF squarely within the trajectory of British evangelical tradition, while its espousal of infallibility offered a rhetorically strong, if somewhat ambiguous, response to the direction of the liberal Student Christian Movement.¹²³ As one of the IVF’s graduate fellowships, the RSCF and its members affirmed the high view of the Bible it articulated. Thus, at a time when prominent voices were proclaiming that the hope for reconciling the antagonism between science and Christianity lay in the open-mindedness of liberal Christianity, the RSCF insisted upon reconciliation without jettisoning conservative faith in the Bible.¹²⁴ If the RSCF proved unable to succeed in this goal, then Packer would have been correct in suggesting that the group did not belong in the IVF.

In advance of the January meeting, Barclay prepared a commentary on the ‘Aims and Viewpoints’ that had guided the group since the beginning of the decade. He hoped that a final version of the statement would be produced and published in the *Christian Graduate*. The final product dealt with many of the concerns that had arisen in the preceding months. It first supported the diversity of views found within the RSCF as a whole and unequivocally affirmed the group’s agreement with the Doctrinal Basis of the

¹²²Barclay, *Whatever Happened*, 87, 113-114; Doctrinal Basis quoted in Stephen R. Holmes, “Evangelical Doctrines of Scripture in Transatlantic Perspective,” 47.

¹²³Stephen R. Holmes, “Evangelical Doctrines of Scripture in Transatlantic Perspective,” 47.

¹²⁴“Balance of Religion and Science: ‘Hope Through Liberal Christianity’” *The Times* (September 15, 1953): 8.

IVF: “Our attitude, therefore, is described by saying that if our views are shown to be plainly unbiblical we shall amend them in accordance with the teaching of Scripture.”¹²⁵

But this simple statement did not easily solve the problem.

At the meeting, the RSCF asked a fundamental question: how could it encourage research scientists to wrestle with the difficult issues of faith and science without making room for such discussion? Even though some of the ideas raised might be unbiblical and heterodox, the freedom to discuss such views was essential to fulfilling the group’s purpose: “We cannot see how to avoid the possibility of giving offence in this way if we are to preserve free discussion and allow those writing papers liberty to state their views freely.”¹²⁶ Another document prepared for the RSCF stated this sentiment more plainly:

Freedom of discussion in meetings is obviously essential for all the [Graduates’ Fellowship] groups. People who come must be able to say what they think if the discussion is to be frank and helpful and this will include the expression of frankly heretical views. We cannot ask that all the wrong views raised in a discussion shall be answered or disowned by the platform – this would reduce all discussion to something nearer to an indoctrination session.¹²⁷

Thus, the RSCF found freedom of expression to be a crucial element for the group’s success. Honest and meaningful inquiry required open and patient dialogue. But the memo went on to discuss the divisive issue: What role should science play in helping to interpret Scripture?

To the RSCF, Packer’s critique that science, because it was extra-biblical, had no constructive role in interpretation seemed inconsistent with actual hermeneutical

¹²⁵“Memo on RSCF Standpoint and Aims,” undated [January 1959], RSCF Papers.

¹²⁶“Memo on RSCF Standpoint and Aims,” undated [January 1959], RSCF Papers.

¹²⁷“Some Notes on the Problem of Freedom of Expression for G. F. Professional Groups, submitted by the Chairman of The Research Scientists’ Christian Fellowship,” no date given [Dec. 1958], RSCF Papers.

practices. “Starting from the fundamentals of the infallibility of Scripture,” the RSCF wrote,

there seems to us a need to interpret it not only in the light of other Scripture . . . but also in the context of such extra-biblical knowledge as God has been pleased to give us. The implications of extra-biblical knowledge are of course tentative, but so in a much smaller degree is our theological system. It is rightly stressed that the mind is fallen, but this unfortunately affects deductions based upon God’s word as much as deductions based upon God’s works.¹²⁸

In other words, extra-biblical information is not so much a hindrance to correct interpretation as a necessary tool for it. Even theological systems, they reminded, were nowhere expounded in the Bible.

The members of the RSCF went on to state five related convictions: Scripture is never interpreted in a vacuum; human analogy, human experience, common sense, and observation are each used to communicate and understand even the most basic biblical passages. Second, there are times when extra-biblical knowledge provides the key to proper understanding, such as when knowledge of Canaanite culture brings to light the significance of certain Old Testament directives or when knowledge of science aids in understanding the age of creation or in locating the earth in the solar system. Third, when the Bible makes claims that are open to observation, “it is our responsibility to seek out relevant facts in order to help us in our interpretation.”¹²⁹ As Christians they were compelled to investigation because of the seriousness with which they took Scripture, rather than in spite of it. As scientists they were compelled because of their responsibility to assist younger colleagues in reconciling their professional and religious commitments. Fourth, the Bible should not be understood to teach science. And finally, as Packer had

¹²⁸“Memo on RSCF Standpoints and Aims,” p. 2.

¹²⁹“Memo on RSCF Standpoints and Aims,” p. 2.

suggested, scientists and theologians should work together at appropriate points in order to avoid wrong interpretation.¹³⁰

Though the public controversy died quickly, the challenge about the place and validity of science had a lasting effect on both Packer and the RSCF.¹³¹ The influence the events had on Packer's thought is difficult to trace, yet it seems Barclay's argument about the role of science in hermeneutical discussions had lasting effect. Two decades later, when conservative evangelicals were attempting to define the inerrancy of the Bible in the face of liberal and scientific challenges (an event that will be discussed further in chapter five), Packer offered the following comment:

What the bible says about the facts of nature is as true and trustworthy as anything else it says. However, it speaks of natural phenomena as they are spoken of in ordinary language, not in the explanatory technical terms of modern science; . . . It is not for scientific theories to dictate what Scripture may and may not say, although extra-biblical information will sometimes helpfully expose a misinterpretation of Scripture.

In fact, interrogating biblical statements concerning nature in the light of scientific knowledge about their subject matter may help toward attaining a more precise exegesis of them. For though exegesis must be controlled by the text itself, . . . the exegetical process is constantly stimulated by questioning the text as to whether it means this or that.¹³²

It is difficult to miss the thrust of Barclay's argument in Packer's exposition.

For the RSCF, the echoes of the controversy are easier to detect. The 1960 and 1961 annual conferences addressed issues explicitly related to the Packer controversy, "The Christian View of the Practice of Science" (1960) and "The Influence of Science on the Christian" (1961). Mackay's 1960 publication *Science and Christian Faith Today*

¹³⁰“Memo on RSCF Standpoints and Aims,” 1-3.

¹³¹Barclay, “RSCF in Historical Perspective,” 9.

¹³²J. I. Packer, “Exposition” in *Explaining hermeneutics: A Commentary*, by Norman L. Geisler with Exposition by J. I. Packer (Oakland, CA: International Council on Biblical Inerrancy, 1983), 32-33.

made clear allusions to the issues.¹³³ Nevertheless, by 1962, the RSCF had moved beyond the need to defend its purpose and activities and was again engaging in a wide variety of topics. By 1964 the leaders were occupied by another project, one that would plant seeds for a formal relationship between them and their American cousins. The RSCF was approached by a Canadian businessman who wanted to sponsor an international meeting of select evangelical scientists and theologians.

Conclusion

The overall conclusion about the initial decades of the RSCF must be that it was from the beginning a heterogeneous and progressive gathering of conservative evangelical scientists who took a broad view of the potential conflict between Christian faith and science. The men and women who made up the group worked hard to affirm the authority of Scripture and modern science. Their impressive credentials and scientific accomplishments meant that they could not be easily dismissed by the scientific community as part of a lunatic fringe. From the start the RSCF recognized the need to demonstrate that science and Christianity were not mutually exclusive. One need not reject either in favor of the other. Informed by the Dutch-Calvinism of R. Hooykaas, the RSCF found a justification for the freedom of scientific investigation and an understanding of the relationship between divine action and natural law that supported its reconciliation of the scientific and biblical worldviews. Drawing heavily on Bohr's complementarity and the distinctions between efficient and final causes, the RSCF developed a subjective understanding of the potential reconciliation of science and the Bible by which the point of reconciliation was not in a particular interweaving of

¹³³Mackay, *Science and Christian Faith Today*, 7.

scientific and biblical data but in the person who could appreciate the differing perspectives offered by the Bible and science and hold them together in a complementary manner. As the group matured it was forced to look in the other direction as well. At a time when conservative evangelicals were wary of anything that resembled liberalism, the RSCF's willingness to allow scientific views to enlighten biblical passages appeared a significant challenge. This required the group to defend its rightful voice in Christian discussions. Science could no longer be talked about as something other, something of which theologians and biblical scholars had to be circumspect. Science was now becoming a prominent member of the theological and biblical discussions, even in conservative circles.

CHAPTER FIVE

The American Scientific Affiliation: 1965-1985

As a creationist organization . . . the American Scientific Affiliation has proven not only to be a sad failure, but even a strong opponent to the creationist cause. Because of the prestige of its scientists, and their professed commitment to Scripture, the ASA has led many Christian schools, colleges, and even seminaries into a similar compromise position.

Henry M. Morris, 1984¹

Thank you for the statement of our need for both scientific and theological integrity. At a time when we are being pestered with demands that 'every true child of God' should commit himself to a belief in the supposed brevity of the age of the earth, to a fiat creation on a vast scale, to a belief that God created the earth with 'an appearance of age' which has misled the unbelieving scientific world, to a belief that the flood was necessarily world wide and the appearance of continuity of faunas and floras are misleading – in fact to a vast sundering between scientific evidence and Scripture – thank you! . . . I just want to express my appreciation for the healthy breath of Christian sanity in your approach.

- Gordon R. Lewthwaite to ASA, 1968²

The 1960s were at best a tumultuous time in America. The nation was divided over questions ranging from war to prayer in school to evolution. Creationists were prompting battles over the teaching of evolution in states including Arkansas, California, Texas, Washington, and West Virginia. By the early 1980s, every area of the nation seemed touched by the evolution-creation debates, and everyone from the president down assumed the ability to judge the validity of one of science's most crucial theories. At a campaign stop in Dallas, Texas, in August 1980, future president Ronald Reagan asserted

¹Henry M. Morris, *A History of Modern Creationism* (San Diego, CA: Master Book Publishers, 1984), 142-143.

²Gordon R. Lewthwaite to ASA quoted in Richard H. Bube, "ASA Newsletter, June 1968," Anderson Papers.

that since scientists were so divided over the theory of evolution, creation should be included in high school curriculum.³ Americans, even those with only the faintest grasp of science, assumed comprehension of the complexities of evolutionary theory.

Evolution controversies were not limited to secondary education. The 1960s was also a time of growing tension at Christian colleges. In 1969, for example, President Charles E. Hummel of Barrington College (RI) wrote to V. Elving Anderson, then American Scientific Affiliation President, for advice about the divisions forming within his college's science department. He reported the recent eruption of "serious differences of opinion" over evolution in which those opposed "do so in the name of Scripture – which is quite unacceptable not only to their colleagues, but also to most of our students, since we accommodate a wide variety of interpretations of early genesis [*sic*] and do not believe that scientific theories are to be decided on exegetical grounds."⁴ Between 1965 and 1985, few topics were as emotionally contested as the question of evolution in public schools.

State of the American Scientific Affiliation

In 1965, the American Science Affiliation (ASA) was at a crossroads. Two years earlier it had survived a potential split when disgruntled creationists helped form the Creation Research Society (CRS). Those who remained within the ASA might have lacked complete agreement about the issues, but they shared a common disregard for isolated activism. As a result, the ASA was becoming the most prominent, and for some

³Henry W. Pierce, "Evolution and Ronald Reagan," *Pittsburgh Post-Gazette* (September 20, 1980): 19; George J. Church, Anne Constable, Simmons Fentress, "Politics from the Pulpit," *Time Magazine* (October 13, 1980); Kenneth M. Pierce, J. Madeleine Nash, D. L. Coutu, "Putting Darwin Back in the Dock," *Time Magazine* (March 16, 1981).

⁴Charles E. Hummel to V. Elving Anderson, March 25, 1969, Anderson Papers.

notorious, evangelical society willing to defend evolutionary science. Some leaders attempted to downplay the group's controversial stance. In 1965, H. Harold Hartzler, the ASA's first paid executive secretary, described the evolutionists within the ASA as an influential "minority group" who did not represent the majority opinion.⁵ Yet a survey of members conducted in the same year by the executive council countered these claims. Although nearly two-thirds disagreed with the view that all life had come from a single form, more than half of the membership affirmed the validity of transmutation. By a margin greater than 3:1 ASA members agreed that the Bible was written in 'pre-scientific' language, and more than 10:1 felt that no topic was off limits to scientific research. Most notably, by a margin of 4:1 they disagreed with the statement "efforts should be made to prevent the use in high schools of textbooks teaching evolution." By 1965 the majority of the ASA had come to accept at least some aspects of the once condemned theory.⁶

The survey further revealed that the number of disciplines represented by the membership remained considerably diverse, with areas of specialization ranging from astrophysics to sociology to philosophy. Chemists were most numerous, comprising roughly one-third of membership. Well over three quarters of members were alumni of evangelical colleges. Wheaton was by far the most popular choice for undergraduate degree (46%), which both affirms Wheaton's pride of place among evangelical colleges at the time and suggests that the ASA attracted a select group of evangelicals. The next closest were Goshen College (20%), Calvin College (13%), and, perhaps oddly, the

⁵H. Harold Hartzler to Duane T. Gish, July 30, 1965, Anderson Papers.

⁶"Results of Questionnaire 1965," in Anderson Papers.

University of California (12%). The distribution for higher degrees was considerably more even, the most popular universities being University of Illinois, University of Michigan, Michigan State University, University of California, and University of Minnesota.⁷ Thus, though the ASA attracted members throughout the United States, evangelically educated Midwesterners were in the majority. Growth continued steadily after 1965, with the organization boasting nearly 2,700 members in 1978. Numbers dropped some after this period, with just over 2,500 members in 1983. Membership leveled out around 2,100 by 1985.⁸ Men continued to make up the majority of the group, comprising 92% of the membership in 1985.⁹ Geographic distribution remained relatively even. Midwesterners were most numerous (25%), followed by those from the West (24%), Northeast (20%), and South (20%). Due in large part to the creation of the Canadian Scientific and Christian Affiliation in 1973, a organization founded by ASA members north of the boarder, international membership in the ASA grew to 11% (61% of these from Canada).

More important than the overall membership, however, were the fellows, the group's governing body, which made up roughly ten percent of the overall membership. Between 1941 and 1965 approximately ninety-seven men joined the ASA who were eventually elected to serve among this select group. 36% of these taught at Christian colleges or universities, 40% at state or secular institutions and 19% came from the

⁷"Results of Questionnaire 1965," in Anderson Papers.

⁸The drop in membership numbers after 1978 coincided with the fire at ASA headquarters in 1979. The difference in the figures could reveal the number of those who retained only passive membership in the ASA.

⁹Membership figures have been gleaned from a database provided to author by Randall Isaac.

private or government sector.¹⁰ From 1965 to 1985, 35% of new fellows came from Christian institutions, 34% came from state and secular colleges or universities, and 23% came from the private or government sector.¹¹ Further, of the twenty-five men who served on the executive council between 1941 and 1965, nine came from Christian institutions, ten came from state or secular institutions, and six came from private or government sector. Of the twenty-five executive council members between 1965 and 1985, ten hailed from Christian institutions, eleven from state or secular, and four from private or government. (The only woman to serve on the executive council between 1941 and 1985 was Ann Hunt, a privately employed chemist then active in the Indiana section of the ASA. She was elected to the council in 1983.) Thus, there was considerable continuity in the institutional affiliation of ASA leaders throughout the period 1941 to 1985, particularly in the balance between secular and evangelical institutions. Yet two important factors should not be overlooked.

First, examining the make-up of the council during the formative years between 1960 and 1965, when the creationist challenges were most acute, one finds an important statistic. Of the ten members of the executive council during this period, seven came from state or secular institutions, one came from the private sector, and only two taught at Christian colleges. Thus, ASA's willingness to withstand the pressure caused by the creation of the CRS was buttressed by men with no professional ties to evangelical institutions. It may be incorrect to suppose that if the ASA had been governed by faculty from Christian institutions during this period that it would have conceded to the

¹⁰Approximately five percent are unaccounted for.

¹¹Approximately six percent are unaccounted for.

creationist challenge. It seems reasonable to assume, however, that most of those who did serve during this time did not have to fear professional ramifications for their progressive views. Second, there was a notable shift in the articles published in the *JASA* after 1965. Between 1949, the year the journal began, and 1965, roughly 41% of *JASA* articles were authored by professors at Christian colleges or universities. 35% were written by individuals in the private or government sector. Only 24% came from faculty at state or secular universities. Between 1966 and 1985, these figures changed dramatically. 36% of articles came from those at Christian institutions, 12% from those in the private or government sector, while 52% of the articles were written by faculty from state or secular universities. Therefore, while the overall make-up of the ASA fellows changed little between 1941 and 1985, those from state and secular colleges dominated the top leadership at the time when the ASA was committing itself to the defense of a post-fundamentalist approach to science and became the voice of the ASA when the promotion and justification of this position was required.

The year 1965 was also marked by two key events that would have far-reaching effects on the organization. The first was the International Conference on Science and Christian Faith held in Oxford. The second was a publication controversy that revealed the internal conflict the ASA endured in the mid 1960s.

The Oxford Conference

In July 1965, thirty-six men from ten countries met for nine days to discuss the most important issues in science and Christianity. The idea for the meeting came from a Harvard-educated Canadian engineer named Norman Lea (d. 2004). Lea was a successful businessman and a tireless champion of Christian discipleship who hoped to

promote exchange between various international Christian scientific groups.¹² He was an ASA member, but seems to have been impressed by the ideas coming from the RSCF and put off by the infighting over evolution that perpetually plagued the Americans.¹³ In 1964, he approached the RSCF about organizing an international conference on science and faith. Almost immediately the preparations commenced. Five men served on the planning committee: brain scientist Donald M. MacKay, psychologist Malcolm Jeeves, historian of science R. Hooykaas, physicist Robert L. F. Boyd, and biochemist Walter Hearn, the lone ASA member on the team.¹⁴ RSCF chairman Allen Weir hosted the meeting, MacKay served as chair, and RSCF secretary Oliver Barclay was secretary.

By spring the details for the meeting were coming together and invitations to participate in an International Conference on Science and Christian Faith to be held in Oxford the following summer were issued. Barclay's goals were not lacking ambition. "The aim of the conference," he wrote in his invitation, was "to set out a positive Christian view of science" and to "help forward the enunciation and dissemination of a Christian philosophy of science which is true to the Bible and to historic Christianity." "We must aim to change the whole climate of thought in our countries."¹⁵ Since Lea was personally funding the conference, including travel and accommodation for the participants, every effort was made to ensure its productivity. Barclay issued clear

¹²David Moberg, "Notes of International Conference on Science and Christian Faith," in the hand of David Moberg, Moberg Papers; A. Gregg Finley, "Remembering Norman Lea," in *St. Stephen's University Newsletter*, (Summer, 2005), 2; *ASA Newsletter* 33, no. 3 (June/July 1991).

¹³Norman D. Lea, "Study of Hooykaas Recommended," *JASA* 21, no. 1 (March 1969): 32.

¹⁴Form titled "First List to be Invited: International Conference on Science and Faith, July 1965," no date, Moberg Papers; Attendee list titled "International Conference, July 17-26 1965, at Regents Park, Oxford, England," no date, Moberg Papers; cf. Malcolm A. Jeeves, *The Scientific Enterprise and Christian Faith* (Downers Grove, Illinois: Inter-Varsity Press, 1969)7-8, 162-165.

¹⁵Oliver R. Barclay to David O. Moberg, March 10, 1964, Moberg Papers.

expectations.¹⁶ In accordance with RSCF practices, papers were to be read in advance so that time could be dedicated to discussion rather than presentation. Outside observers, including friends and spouses, were excluded from the meetings so that the conversations could remain focused without constant clarification for novices. Participants were expected to take part in all formal and informal events so that full attention could be given to the business at hand. Presentations and discussions ranged from “God and Nature” and “Nature and Supernature” to “Proper and Improper Uses of the Bible” and “Biblical Interpretation” to “Cybernetics: the Concept of the Mind” and “Psychology of Religion.”¹⁷

True to form, Barclay issued a reading list designed to ensure a common frame of reference among participants. The list evinces Barclay’s awareness of the surge in literature relating to science and religion issues that appeared in the 1950s. The titles included Karl Heim’s *Christian Faith and Natural Science* (1953) and *Transformation of the Scientific World View* (1953) and Lack’s *Evolutionary Theory and Christian Belief* (1957). Barclay found significant value in Heim’s work and regretted that it had been overlooked by the majority of theologians because of its complex scientific language. Lack’s book was included more for its useful summary of evolution than for its treatment of Christianity. E. L. Mascall’s *Christian Theology and Natural Science* (1956), W. G. Pollard’s *Chance and Providence* (1958), and R. Westfall’s *Science and Religion in the*

¹⁶Oliver R. Barclay, “International Conference: Circular 2 to all participants,” July 14, 1964, Moberg Papers; Oliver R. Barclay, “International Conference: Circular 3 to all participants,” November 1964, Moberg Papers.

¹⁷Oliver R. Barclay, “International Conference: Circular 2 to all participants,” July 14, 1964, Moberg Papers; Oliver R. Barclay, “International Conference: Circular 3 to all participants” November 1964, Moberg Papers; “Programme: International Conference on Science and Faith, July 17-25, 1965,” in Moberg Papers.

Seventeenth Century in England (1958) each made the list. Mascall's work was well regarded by RSCF members in part because of its insistence that the act of creation included God's continued conservation of the natural world. *Chance and Providence* was appreciated for its rejection of determinism and argument that the scientific understanding of chance provided room for divine activity. Westfall's book made the list because of its description of the danger of apologetics in science. Of course works by Hooykaas and MacKay were included. The only recommended work by an ASA member was Bernard Ramm's *Christian View of Science and Scripture* (1954). Perhaps revealing of the RSCF's overall impression of the ASA to this point, neither *Modern Science and Christian Faith* (1950) nor *Evolution and Christian Thought Today* (1959) was mentioned. RSCF leaders were aware of these publications, but they were generally seen as missing the fundamental issues.¹⁸ Such thinking, it seems, would have invited distractions Barclay was eager to avoid.

Further revealing of this attitude were the ASA members invited to attend. The American participants were geneticist V. Elving Anderson, physicist Richard H. Bube, anthropologist J. O. Buswell, III, zoologist J. F. Cassel, biochemist Walter Hearn, sociologist David O. Moberg, theologian Bernard Ramm, and chemist W. R. Thorson. These men represented the most progressive ASA leaders and shared a common appreciation for modern science. Perhaps as important as those in attendance were the names of those who were not. Most conspicuously, neither the Hartzler nor Wheaton biologist Russell Mixter, both key leaders in the early ASA, was invited to the meeting.

¹⁸“Review of *Modern Science and Christian Faith*,” *Christian Graduate* 9, no. 4 (1956) : 217-218; R. J. Berry, “Review of *Creation and Evolution, Darwin and the Human Situation*, and *Evolution and Christian Thought Today*,” *Christian Graduate* 14, no. 2 (1961); 85-86.

There was little desire, it seems, to risk having to defend the validity of modern science or the theory of evolution.

The Oxford conference was a landmark in the minds of ASA members. Those who attended celebrated the chance to meet others who shared the ASA's commitment to conservative evangelical theology and modern science and eagerly reported their experiences through the *JASA* after their return.¹⁹ Those left out regretted missing the event and were ready to learn the ideas that were shared from those who were there.²⁰ The full effects of the conference are difficult to discern. The event was notable for the breadth of issues discussed as much as the attitudes taken. Evolution was an important topic, but questions focused on how to relate evolution and Christianity rather than the validity of one over the other. The more pressing issues dealt with problems of language in appealing to non-Christians, whether Christianity was real in the face of psychological challenges, whether emerging computer science confirmed that humans were merely complex machines without free will or a mind, and answering critics about the nature of the Bible. Biblical illiteracy and liberal religious education were described as more threatening than evolutionary science. Some even criticized the desire to develop a Christian view of evolution since, it was argued, no one demanded other distinctly Christian fields, such as Christian atomic theory. The most instructive topic from the perspective of the ASA may have been the general approach taken by the RSCF members toward the Bible. Having crystallized their understanding of the relationship between science and Scripture during the Packer controversy, RSCF members were able to present

¹⁹“Reports on the Sessions of the International Conference on Science and Christian Faith, Oxford, England July 22, 1965,” *JASA* 18, no. 1 (March 1966): 19-28.

²⁰J. W. Haas, interview with author, August 1, 2009.

their views with considerable precision and apply them to a full range of issues. The Americans seemed equally impressed by the RSCF's ability to see through superficial questions in order to get to the heart of the issues. R. Hooykaas's historical perspective, MacKay's emphasis on complementarity and overcoming reductionism, and the general emphasis on avoiding hard lines between nature and super-nature seemed to offer enriching perspectives on the key problems. Yet ASA members were more than mere recipients in the exchange of ideas. Events in their own history had led them to develop views that were closely aligned with those of the RSCF well before the Oxford meeting.²¹ Elving Anderson's paper on "Modes of Explanation in Biology" argued for models of relationships between scientific and theological categories that were in many ways similar to MacKay's complementarity.²² Bube, Hearn, and Moberg had already completed a manuscript for *The Encounter Between Christian and Science* (to be discussed further below), which one RSCF reviewer would later describe as inspired and worthy of study.²³ Thus, the ASA leaders were drawn to the RSCF participants not because they introduced novel ideas but because they articulated shared convictions with stronger force and greater nuance.²⁴ Perhaps most significant, then, may have been the event's timing. Having endured challenges from the newly formed CRS and survived a threatened schism within their own ranks, ASA leaders were surely encouraged to find a

²¹ David O Moberg, "Notes from International Conference on Science and Christian Faith," July 17, 1965, Moberg Papers; V. Elving Anderson, "Notes from International Conference on Science and Christian Faith," Anderson Papers.

²²V. Elving Anderson, "Modes of Explanation in Biology," (paper presented at the International Conference on Science and Christian Faith, Oxford, July 17-26, 1965), also published in *JASA* 16, no. 4 (December 1964): 103-107; cf. Jeeves, *Scientific Enterprise and Christian Faith*, 54-79.

²³Oliver Howarth, "Review of *The Encounter Between Christianity and Science*," *Christian Graduate* 23, no. 4 (1970): 123-124.

²⁴ Walter Hearn to author, July 29, 2009.

group of reputable evangelical scientists that could not only affirm and further their efforts, but that had been traveling the same journey ahead of them.²⁵

The Encounter Between Christianity and Science

Important as the Oxford Conference was, it was the other event of 1965 that proved more consequential for the development of the ASA. In 1961, ASA leaders commissioned Richard Bube (then research physicist, RCA laboratories, later professor of physics, Stanford University) to edit a work that could replace the increasingly outdated *Modern Science and Christian Faith* (1950). By the time the manuscript was finished in autumn 1964, however, much had changed within the ASA. The emergence of the CRS and increased resistance from various evangelical groups caused some within the ASA to seek a more cautious and conservative attitude as it moved beyond fundamentalist science.²⁶ The ASA was experiencing intellectual growing pains that left some uncertain about the best steps forward. Issues came to a head in the summer of 1965 when Bube presented the finished manuscript of *Encounter Between Christianity and Science* to the ASA's publications board.

The authors of the three hundred-page *Encounter* represented the new generation of ASA leaders and evinced the organization's success in attracting scientists of the highest caliber. Bube (PhD, Princeton University, 1950), astrophysicist Owen Gingerich (PhD, Harvard University, 1962), geologist F. Donald Eckelmann (PhD, Columbia University, 1956), biochemist Walter R. Hearn (PhD, University of Illinois, 1951),

²⁵David O Moberg, "Notes from International Conference on Science and Christian Faith," July 17, 1965, Moberg Papers ; V. Elving Anderson, "Notes from International Conference on Science and Christian Faith," Anderson Papers, 5b; Hearn to author, July 29, 2009.

²⁶J. W. Haas, interview with author, August 1, 2009.

psychologist Stanley E. Lindquist (PhD, University of Chicago, 1949), and sociologist David O. Moberg (PhD, University of Minnesota, 1952) offered a combined ten chapters dealing with issues ranging from biblical interpretation to psychology. The content contained the prevailing views of the reborn ASA. The ideas were progressive. The attitudes were bold. Gone were the cautious commendations of evolutionary theory and modern science. Transmutation was presented as the only valid scientific explanation for the diversity of species. Science was hailed as an essential ally for understanding God's revelation. Throughout the text each author affirmed the need for natural theology, the importance of scientific investigation, and the validity of science's participation in theological discussion. Given the caliber of authors, the role the ASA executive committee played in commissioning the work, and the fact that Bube was a current member of the executive committee, it must have seemed bewildering when the ASA publications board announced that the book had been rejected.

The publications board was led by Russell Maatman, a professor of chemistry at Dort College (Iowa), who reported that the committee had taken issue with many of the book's scientific and theological assumptions.²⁷ Much of the controversy involved Eckelmann's chapter on geology and his willingness to affirm evolutionary science unequivocally. Eckelmann closed his chapter with eight terse conclusions that emphasized three basic points – the Bible was not written to teach scientific truths, evolution is true, and Christian theology overall is not affected.²⁸ These views, one board

²⁷Russell Maatman to ASA Executive Council, August 11, 1965, Anderson Papers.

²⁸F. Donald Eckelmann, "Geology," in *The Encounter Between Christianity and Science*, edited by Richard H. Bube (Grand Rapids, Michigan: William B. Eerdmans Publishing Company, 1968), 168-169.

member wrote, were “completely out of step” with the goals of the ASA.²⁹ Walt Hearn’s chapter on biological science also received criticism from the publications committee. Described by Mixer as “typically Walt,”³⁰ Hearn’s chapter explained how geology, paleontology, genetics, and biochemistry each corroborated evolutionary theory. “Opposition on Biblical [*sic*] grounds to the theory of evolution by natural selection is unwarranted and actually harmful to Christianity,” he wrote. “When Christianity aligns itself with pseudo-science [i.e., creationism] to combat a pseudo-religion [i.e., evolutionism], then both science and Christianity suffer grave consequences.”³¹ More positively, Hearn noted new and growing ethical challenges posed by modern biological advances and argued that if Christians could gain the respect of the scientific community, the potential for influencing moral decisions was great.³²

Still, more important than any scientific issue was the fear that if published by the ASA the book would be considered the group’s official position. “I wonder,” Maatman admitted, “if down in his heart any one of us who has been discussing this book really believes that this book would not commit us to a position. . . . ASA sponsorship would put the ASA on record.”³³ The unwillingness to offer declarations on controversial issues was deeply ingrained in the mindset of the ASA. Neutrality was the ever-present goal. In much the same way that *Modern Science and Christian Faith* came to represent the

²⁹Unnamed member quoted in Russell Maatman to ASA Executive Council, August 11, 1965, Anderson Papers.

³⁰Russell Mixer to Elving Anderson, August 20, 1965, Anderson Papers.

³¹Walter Hearn, “Biological Science,” in *The Encounter Between Christianity and Science*, edited by Richard H. Bube (Grand Rapids, Michigan: William B. Eerdmans Publishing Company, 1968), 220.

³²Walter Hearn, “Biological Science,” 221.

³³Russell Maatman to ASA Executive Council, August 11, 1965, Anderson Papers.

prevailing views of the ASA in the fifties, Maatman feared, this book would become the new voice the ASA, proclaiming a message that the publications committee was unwilling to endorse.

Bube's response was passionate and personal. In a letter to the executive committee, Hartzler, and Maatman, Bube assailed the board's decision. He accused them of undue conservatism, of holding members to higher standards than those required by the organization's constitution, and of pursuing neutrality through ambiguous and impotent means.³⁴ Maatman's evaluation was criticized as short-sighted, and Bube indicted the publications board for making his "the first ASA book to be turned down because it did not match the 'party line.'" ³⁵ Such actions, he insisted, were "inimical to the future work of the ASA."³⁶ Bube went on to advise the executive council and publications board of how to better achieve its goals. Instead of withholding endorsement for fear of being pegged in the science and religion debates, he insisted, the ASA should do the opposite. It should strive to produce more books with varying views so that the organization might become known as a group with a real contribution to offer, rather than being seen as "a narrow splinter group of 'queer' scientists."³⁷ Bube even suggested that Whitcomb and Morris's *Genesis Flood*, a book with which he clearly disagreed, should have been published by the ASA in order to generate dialogue. If this

³⁴Richard H. Bube to V. Elving Anderson, H. Harold Hartzler (and the Executive Council), and Russell Maatman, August 15, 1965.

³⁵Richard H. Bube to V. Elving Anderson, September 17, 1965, Anderson Papers.

³⁶Richard H. Bube to V. Elving Anderson, September 17, 1965, Anderson Papers.

³⁷Richard H. Bube to V. Elving Anderson, September 17, 1965, Anderson Papers.

were done, he argued, then a book like his could have been seen as a participant in a larger conversation.

The ASA's unwillingness to publish Bube's *Encounter* was remarkable, a failure that seems to have stemmed in part from a hyper-deference for Maatman and the committee he oversaw and in part from a form of corporate insecurity about taking a position so strongly opposed by conservative masses. Other ASA leaders saw little problem with its publication. Mixer was convinced that although the book might stir up some controversy, steps could be taken to dissuade readers that it defined official ASA views.³⁸ Anderson agreed. Even though he disapproved of Eckelmann's approach and recognized that certain sections might be seen as overly contentious, he disagreed with the publications board's verdict and even considered some of Maatman's views "very dangerous."³⁹ In the end, the controversy revealed the continuing tensions within the organization and the unease some members still had in defending evolutionary science. Even Hartzler recognized the paralysis the events suggested. "It seems" he wrote a short time later, "that we cannot agree to publish books either very much opposed to the theory of evolution or very much in favor of the theory."⁴⁰

The *Encounter* controversy marked a turning point in the ASA. Bube lost the battle, but in many ways won a greater victory. By the end of 1965, Hartzler summoned Maatman to meet with the executive council in order to discuss the developments. Although Hartzler agreed with Maatman's views in general, he felt tensions rising and

³⁸Russell Mixer to Elving Anderson, August 20, 1965, Anderson Papers.

³⁹Notes entitled "Issues in Bube MS," in the hand of V. Elving Anderson, [1965], Anderson Papers.

⁴⁰H. Harold Hartzler to Duane T. Gish, September 8, 1965, Anderson Papers.

sensed the need to interrupt potential division within the organization.⁴¹ It is unclear if Maatman was chastised for his committee's actions, but Bube was soon rewarded for his diligence. *Encounter* was published by Eerdmans in 1968. The same year, he was elected ASA president.

Thus, 1965 was a pivotal year in ASA history, but not because it marked a changed outlook or a new appreciation for mainstream science. Kulp's leadership in the 1940s, Mixer's 1957 lecture on the fossil record, and the 1961 science symposium at Wheaton signaled the group's acceptance of modern science. Rather, the *Encounter* controversy forced the ASA leaders to choose their approach. Would they offer an understated defense of evolutionary creationism in order to pacify those within and outside of the organization that deemed evolution un-Christian, or would they publicly defend the views held by the majority of the organization? Informed and prepared by their own struggles with the CRS and inspired by the witness of colleagues in the UK, the ASA chose the latter. As a result, it put itself at odds with a surging popular reaction to evolution in the US.

The Bube Era

The development of "scientific creationism" in the 1970s marked a "major tactical shift" among American antievolutionists.⁴² Signified by the appearance of *Scientific Creationism* (1974), a handbook for high school teachers written by CRS leader Henry M. Morris, creationists began stressing the scientific aspects of creationism

⁴¹H. Harold Hartzler to Russell Maatman, November 9, 1965, Anderson Papers.

⁴²So writes Ronald L. Numbers, *The Creationists: From Scientific Creationism to Intelligent Design* expanded edition (Cambridge, MA and London: Harvard University Press, 2006), 269.

without reference to Genesis or other Christian literature. By doing so, Morris insisted, creation science could be seen as a legitimate alternative to evolutionary science worthy of equal treatment in America's public schools. The success of these efforts is difficult to overestimate. While popular Christian leaders continued to reject evolution on theological grounds, growing numbers of Americans began demanding "equal time" for creation science because of its scientific merit. By 1981, 75% of the nation favored teaching both science and the "Biblical theory of creation" in public schools.⁴³ In 1982, the Arkansas 'equal time' trial demanded that public schools give equal attention to both evolution and creation science.⁴⁴ A 1982 Gallup Poll found that 44% of Americans believed that God created humans "pretty much in their present form at one time within the last 10,000 years or so."⁴⁵ By 1985 polls were showing that 57% of Americans rejected human evolution.⁴⁶ The development and popular acceptance of scientific creationism formed the context within which Bube helped guide the ASA.

Bube began his presidency with firm ideas of the challenges and controversies facing the ASA. Regarding the challenges, he was clear. Soon after 1965 his frustration caused by the *Encounter* controversy fermented into dissatisfaction with the ASA's broader accomplishments. He lamented the ASA's virtual anonymity among professional scientists. The entire organization, he wrote in 1967, was "virtually non-

⁴³Eric Plutzer and Michael Berkman, "The Polls – Trends: Evolution, Creationism, and the Teaching of Human Origins in School," *Public Opinion Quarterly* 72:3 (Fall 2008): 552; Nearly the same figures (76%) were reported by *Time* magazine a year later, (January 18, 1982): 63.

⁴⁴Larson, *Trial and Error* 3rd edition (Oxford and New York: Oxford University Press, 2003; this law was later struck down.

⁴⁵<http://www.gallup.com/poll/21814/Evolution-Creationism-Intelligent-Design.aspx>, accessed June 15, 2010.

⁴⁶Plutzer and Berkman, "The Polls," 542.

existent” in scientific circles and largely unknown even among Christians.⁴⁷ Such secrecy rendered the entire organization impotent. “The statement that the relationship between the ASA and the scientific community is virtually non-existent means at least two things.” He wrote:

(1) The scientific community is almost completely unaware of the existence, purpose, and potential contributions of the ASA. (2) The majority of Christian men of science regard the ASA as rather an outdated organ of a narrow doctrinal view, in spite of the fact that a small minority of hyperconservative Christians consider the ASA to be constantly on the verge of apostasy.⁴⁸

In other words, even those aware of the little known organization were likely incorrect in their assessment of it. The situation, Bube insisted, required action. The ASA had to redefine and broaden its objectives so that it might become known for open conversation about important issues where truth was sought after rather than defined. It had to expand its publication program without censorship. It had to “affirm clearly the validity of the scientific endeavor in understanding the natural world.”⁴⁹ And it had to communicate its ideas in Christian and scientific circles more effectively. After he became president, these convictions deepened. Emphasizing the dual identity of ASA members, he described them in part as a “community of the faithful, who have committed themselves and their lives to Jesus Christ.” They were equally part of the scientific community, “who have committed themselves to the understanding, control, and utilization of the natural world through the scientific disciplines.”⁵⁰ Only by fully embracing both aspects

⁴⁷Richard H. Bube, “The Relationship Between the ASA and the Scientific Community,” *JASA* 20, no. 1 (March 1968): 2 (paper present at the 1967 Annual Meeting of the ASA).

⁴⁸Richard H. Bube, “The Relationship Between the ASA and the Scientific Community,” 2.

⁴⁹Richard H. Bube, “The Relationship Between the ASA and the Scientific Community,” *JASA* 20:1 (March 1968), 5 (paper present at the 1967 Annual Meeting of the ASA).

⁵⁰Richard H. Bube, “The President Speaks,” *JASA* 20, no. 1 (March 1968), 1.

of its character could the ASA realize its potential. Accordingly, Bube began his presidency with an unambiguous challenge:

Is the ASA to be restricted to the activity of a small religio-scientific sect, forever fighting anew the battles of yesteryear, and speaking aloud to a constantly diminishing audience? Or is the ASA to be a fellowship of men dedicated to Christ and aware of the meaning of scientific investigation, who will pursue these relationships into the heart of the many problems that afflict the world today? Will the ASA break clear of the dry bones of arguments about creation, evolution, Adam, and the flood, and combine scientific insight with the Gospel of Jesus Christ to speak to the problems that concern today's world? It is my personal conviction that the fullness of service to Christ, faithfulness to His Word, and response to the responsibility He has given to us, requires such a new vision and a new dedication of purpose.⁵¹

Thus were the challenges. The ASA had to redouble its efforts to become a heeded voice in the science-faith dialogue.

Bube also had clear ideas about the controversies swirling within the ASA, and he found some success in dealing with them. He never hid his disregard for creationism, and he frequently allowed the frustration of others to speak for him. This was the context for the letter by Gordon Lewthwaite, offered at the beginning of this chapter, commending the ASA's approach to the issues. In a similar letter from the winter of 1968, Bube quoted an anonymous member who urged the ASA to provide an alternative Christian view to young-earth creationism, because "Christians who are bound to the fetters of only 10 or 15 thousand years [for the age of the earth] are a laughing stock to scientists."⁵² In September 1968, Bube's desire to see the organization's neutrality expressed through more numerous and diverse publications became a directive for the

⁵¹Richard H. Bube, "The President Speaks," *JASA* 20, no. 1 (March 1968), 2.

⁵²Quoted in Richard H. Bube, "Presidential Letter," November-December [1968], ASA Papers, Box 15.

publications board.⁵³ This new approach, however, was short-lived, since the group was disbanded by the spring of 1969. Suggesting prior ineffectiveness and a new agenda, the board was replaced by one member of the Executive Council, Dr. Virgil Freed (professor of agriculture, Oregon State University), whose only directive was to “get the job done with a minimum of delay.”⁵⁴ Thus, while the failure to publish *Encounter* seems to have left a bad taste in the mouths of the executive committee, Bube’s vision seems to have gained more than a few supporters. Still, his influence only grew after his term as president, for in 1969 he became editor of the *JASA*.

ASA founder Alton Everest later described Bube’s fifteen-year tenure as *JASA* editor as the pivotal phase in the journal’s development.⁵⁵ The previous editors were far from incompetent. In 1969, the *Journal* was twenty years old, it had evolved from little more than a glorified newsletter (the first edition was less than twenty mimeographed pages) into a legitimate, if unnoticed, voice in the science and faith dialogue. By its twentieth anniversary it had a circulation of 2100.⁵⁶ Even so, Bube’s influence was tangible. He assumed his post as editor committed to academic integrity in both science and theology and insisted that contrary to the trends in other Christian publications at the time the *Journal* should retain a ‘semiprofessional’ appearance. Almost immediately upon assuming his role the number and quality of book reviews increased. The number of reviews published per year increased four-fold between 1969 and 1983. Meanwhile the

⁵³*ASA Newsletter*, September 1968.

⁵⁴*ASA Newsletter*, March 1969.

⁵⁵F. Everest, *The American Scientific Affiliation: Its Growth and Early Development* (Ipswich, MA: The American Scientific Affiliation, 2010), 100, cf. 71, 77.

⁵⁶Richard H. Bube, “A New Category,” *JASA* 30, no. 1 (March 1978): 1

journal's fledgling peer-review system emerged as an efficient tool for guarding the quality of the journal. In his first edition as editor, Bube replaced nine contributing editors with eighteen consulting editors. By 1972 the number had grown to twenty-two and included a full array of ASA members, representing both the group's disciplinary and professional variety (both Hearn and Maatman served as editors). The journal also became a forum for open and focused debate over essential issues. Key in this regard were the development of an occasional series of "Dialogues," in which ASA members debated opposing views of the most controversial issues facing the organization, and Bube's attempt to spotlight a particular theme in each issue. The latter was among the most conspicuous changes within the *Journal*. Between 1969 and 1983 over half the installments featured a single topic often prefaced by a brief editorial comment. As a result, the *JASA* offered more focused attention to given topics, and Bube became the de facto voice of the ASA.⁵⁷ By the time he resigned the *Journal* had doubled in size and circulation grew to 3,600 (2,600 paid subscriptions).⁵⁸

Reactions against Bube's guiding hand came from the creationists that remained within the ASA. In early 1972, creationist ASA member Duane T. Gish wrote to then ASA president Donald C. Boardman complaining about Bube's performance as editor. Citing Bube's personal bias against conservative views and his unwillingness to give equal press to creationist ideas, Gish charged Bube with making the *Journal* "so contradictory to the interests of evangelical Christianity" that he had "disqualified

⁵⁷ Randall Isaac, interview with author, July 31, 2009.

⁵⁸ Everest, *The American Scientific Affiliation*, 70.

himself as editor of our Journal.”⁵⁹ Gish’s comments were not entirely baseless, and a few ASA leaders recognized Bube’s occasionally overbearing approach in guiding the ASA. Yet they responded with overwhelming support for him and his work with the *Journal*. Donald Boardman, for example, defended Bube by demonstrating that contrary to the accusations, more ink had been devoted to those in support of Morris than to those opposed.⁶⁰ Similar support came from other ASA leaders including John McIntyre and Claude Stipe.⁶¹

Gish’s criticism of Bube had one key and unintended outcome. As ASA leaders rallied around Bube, their tone became increasingly critical of the creationist agenda. “This is not the first time,” Stipe wrote in defense of Bube, “that Christians who do not agree with the position of the Creation Research Society have been told that to reject the historical content of Genesis 1-11 . . . ‘one must strip away the entire Biblical foundation,’ and that for the ASA to take any position other than that of the CRS ‘seems unthinkable as long as it pretends to be Christian.’”⁶² Boardman’s response was even more strident. He rebuked the use of the doctrine of creation as the litmus test for theological orthodoxy. “It seems to me,” he wrote to Gish,

that the Creation Research Society, The Bible-Science Association and a few others are starting a sect. I notice the key word seems to be creationism. I wonder if one’s entire theological, scientific, and philosophical position should revolve around a sect based on one narrow interpretation of a few portions of scripture [*sic*] even though I may hold to that interpretation myself.

Members of the sect you are propagating should examine whether their purpose is to divide churches, confuse Christians, and seek to publicly condemn a

⁵⁹Duane T. Gish to Donald C. Boardman, January 20, 1972, ASA Papers, Box 15.

⁶⁰Donald C. Boardman to Duane T. Gish, January 27, 1972, ASA Papers, Box 15.

⁶¹Claude E. Stipe to Richard Bube, January 29, 1972, ASA Papers, Box 15.

⁶²Claude E. Stipe to Richard Bube, January 29, 1972, ASA Papers, Box 15.

fellow Christian or to preach the whole counsel of God as revealed in the Scriptures.”⁶³

Gish’s criticism thus not only united ASA leaders around Bube. It also hardened their views against the monolithic platform of the CRS and affirmed the need for a more vocal defense of the evangelical acceptance of evolution.

The increasingly prominent defense of evolution did not, however, lead to a public shunning of creationism. In keeping with Bube’s desire for open communication between disagreeing parties and encouraged by Hartzler attempts to form an alliance between the two organizations, the ASA continued to court the CRS, often seeking its participation at annual meetings. Hartzler frequently challenged ASA leaders to remain open-minded towards the CRS, and was often displeased with the lack of cooperation he perceived among the senior members: “If we do not change our ways then more members will leave. I therefore plead with the Executive Council that means and ways be considered to attempt to heal this wound.”⁶⁴ Largely resulting from his efforts, the ASA invited CRS involvement at ASA conferences. “If the ‘good’ of closer communication outweighed the ‘harm’ of possible lost tempers,” John McIntyre wrote to Hartzler in 1972, “we could try such a program.”⁶⁵ Hartzler’s efforts yielded promising fruit in the summer of 1973, when key CRS figures presented papers at the annual ASA meeting. Securing CRS participation was no mean feat. Only four years earlier they had refused to

⁶³Donald C. Boardman to Duane T. Gish, January 27, 1972, ASA Papers, Box 15.

⁶⁴H. Harold Hartzler to John A. McIntyre, October 19, 1972, ASA Papers, Box 15; see also, H. Harold Hartzler to John A. McIntyre, November 30, 1972, ASA Papers, Box 15; H. Harold Hartzler to John A. McIntyre, October 1, 1973, ASA Papers, Box 16.

⁶⁵John A. McIntyre to H. Harold Hartzler, November 13, 1972, ASA Papers, Box 15.

cosponsor a convention with the backslid ASA.⁶⁶ The results of the 1973 meeting seemed promising. For McIntyre, then ASA President, the event was evidence of the work of God in their midst. Despite the continued differences of opinion, he wrote, “we now have the lions and lambs of the ASA lying together in peace.”⁶⁷

Yet in the end peace was fleeting. The following year ASA leaders tried again to involve the CRS in the annual meeting, but increasingly “bad relations” intervened.⁶⁸ The ASA and CRS never again worked together. Frustrated with the ASA’s continued defense of evolution and dissatisfied with being one voice among many, CRS leaders severed all practical ties with the ASA. The ASA, it seems, had become a lost cause. The feelings of some ASA members toward the CRS were not dissimilar. Within a few short years, McIntyre sent a letter of advice to executive director William D. Sisterson, who had been elected to replace Hartzler in 1972, warning him of the difficulty of dealing with the flood geologists. “You will have to be careful about this problem,” he wrote, “or we might lose some members. However, we cannot muzzle ourselves forever so as not to offend anybody. The Creation Research Society doesn’t mind speaking out.”⁶⁹

Sisterson helped lead the ASA through some of its roughest years and may have seemed an unlikely head of a scientific organization. Throughout his tenure the ASA struggled and often failed to remain solvent. Its independence from other Christian groups and endorsement of unpopular views (perhaps made possible by its independence)

⁶⁶H. Harold Hartzler to Members of Executive Council, ASA, December 8, 1969, ASA Papers, Box 15.

⁶⁷John A. McIntyre to ASA Members, October 15, 1973 in ASA Newsletter, October 1973, Box 16.

⁶⁸John A. McIntyre to Edwin A. Olson, January 16, 1974, ASA Papers, Box 16.

⁶⁹John A. McIntyre to W. D. Sisterson, April 14, 1975, ASA Papers, Box 16.

contributed to unrelenting financial struggles throughout the 1970s. The fire that destroyed ASA headquarters in 1979 occurred under his watch and aggravated the economic strain. Further, Sisterson held no advanced degrees in science, a weakness he perceived in himself upon his resignation in 1980 (he held a BSIE from Southern Methodist University and a ThM from Dallas Theological Seminary), and an apparent contradiction of the organization's constitution.⁷⁰ Yet his influence within the ASA should not be underestimated. Hartzler's strong creationist inclinations and irenic personality had made him a cautious leader. While his commitment and service to the organization were highly regarded, he often resisted the more progressive figures within the ASA while actively wooing the CRS.⁷¹ Sisterson seemed less inclined to appease the creationists. From the start of his tenure, he was impressed by the ASA's commitment to neutrality in the face of conservative challenges.⁷² Perhaps betraying his own fundamentalist education, he remained a steadfast advocate for the ASA's openness to evolution. Later reflecting on the ASA's history, he confirmed his appreciation of this commitment and recognized it as essential for the future. "The ASA has consistently and courageously stood for this basic unity in science and theology," he wrote:

For over 35 years we have successfully resisted vigorous efforts to compromise this stand. We have been urged to compromise good science for the sake of protecting traditional, yet unnecessary, interpretations of the Bible. We have been pressured to compromise good theology in the name of current scientific fashion

⁷⁰Sisterson to ASA Executive Committee, July 25, 1980, in Everest, *The American Scientific Affiliation*, 28-29.

⁷¹For commendations of Hartzler's service to the ASA see, Donald C. Boardman, et al, "The Torch Passes," *JASA* 24, no. 4 (December 1972):155-158.

⁷²ASA Newsletter, August 4, 1973.

and peer pressure. Our uncompromising resistance to these pressures is the firm foundation and bright hope for the future of the ASA.⁷³

Thus, unlike Hartzler, who seemed to desire peace above all else, Sisterson encouraged the ASA to maintain its course.

By the end of the 1970s, any hesitation ASA leaders felt in affirming the possibility of accepting evolutionary science disappeared. *Origins and Change* (1978), a small collection of previously published articles, unequivocally confirmed this view.⁷⁴

Referencing the protracted debates between the ASA and groups like the CRS, the preface stated:

one of the major purposes of this volume of readings is to carefully [evaluate] the contemporary “young earth” viewpoint. Hopefully the reader will come to see that this exclusivist position is not the *only* possible Christian view of Origins and Change . . . The second major purpose of these readings is to show how reputable scientists have and are grappling with the relationships of their professions to their Christian faith.⁷⁵

The first essay in the collection, written by Bube, was entitled “We Believe in Creation.” It opened with a clear affirmation of the ASA as a ‘creationist’ organization: “It should be well known to readers of the *Journal ASA* that the American Scientific Affiliation does not take an official position on controversial questions. Creation is not a controversial question. I have no hesitancy in affirming, ‘We believe in creation,’ for every ASA member.”⁷⁶ From here, Bube went on to denounce those who equated creation with a narrow understanding of “fiat creation” and to reject the claim that accepting evolution

⁷³William D. Sisterson and H. Harold Hartzler, “ASA: Then and In the Future,” *JASA* 31, no. 4 (December 1979):196-198.

⁷⁴David L. Willis, ed., *Origins and Change: Selected Readings from the Journal of the American Scientific Affiliation* (Elgin, IL: American Scientific Affiliation, 1978).

⁷⁵Richard H. Bube, “We Believe in Creation,” *Origins and Change*, iii-iv.

⁷⁶Richard H. Bube, “We Believe in Creation,” *Origins and Change*, iii.

meant accepting evolutionary philosophy. Each of the seven articles that followed demonstrated Bube's claims.

One of the byproducts of such open acceptance of evolution was increased accusations that the ASA had moved beyond conservative evangelical faith and had joined the ranks of the liberals—few accusations could have been more malicious. In the 1960s the liberal-conservative dichotomy became the predominant dividing line in American culture.⁷⁷ While such division was by no means new, it was during this period that it became for many the most important distinction between various groups. Catholic v. Protestant, Christian v. Jew, Black v. White—these divisions largely gave way to liberal v. conservative. In religion, social and political categories normally accompanied theological division, a vestige of the coalescence of conservative politics and conservative religion during the “great reversal” (the conservative reaction to the Social Gospel that had occurred earlier in the century).⁷⁸ Although notable exceptions could be found, by the early 1980s, these two became firm allies in the battle against all things liberal.⁷⁹ Since the teaching of evolution was still seen by many as a social issue, it is not surprising that some had difficulty recognizing the ASA's conservative theology. Misunderstandings were aggravated by those who insisted that conservatives must take an antievolutionary stance. As such, many saw the ASA's drift from the requisite antievolutionism as a drift from conservative theology. As one disgruntled correspondent

⁷⁷George Marsden, *Religion and American Culture* 2nd ed. (Belmont, CA: Thomson, 2001), 247-249.

⁷⁸Marsden, *Fundamentalism and American Culture* 2nd ed. (Oxford and New York: Oxford University Press, 2006).

⁷⁹Prominent counter-examples to the great reversal included Ronald Sider and Jim Wallis.

put it, “the strong liberal slant of the A. S. A.” seemed “scandalous.”⁸⁰ By this point, however, ASA leaders had grown resistant to such accusations.

Though never pleased with the scorn received from their fellow coreligionists, the ASA had learned to accept the indictments in order to offer a positive witness to the broader scientific community. In the face of the swelling creationist tide, ASA leaders continued to proclaim their mantra of having no official position on controversial issues, especially regarding evolution. Due in part to their sincere interest in diverse opinions, in part to the potential backlash from other evangelical groups, and in part to the considerable number of creationists who remained within the organization, the ASA remained open to a wide variety of views. Tolerance, however, failed to bring peace. ASA executives continued to receive criticism from those repulsed by the progressive views expressed in *JASA*.⁸¹ Yet despite such accusations, the leaders grew increasingly proud of the group’s reputation. As Sisterson, responded to one critic in 1980:

You complain that ASA has not taken a position in nearly 40 years and that somehow that is a negative commentary on the organization. I feel that the opposite is actually true. [The creationists’ dogmatism] is a sign of immature evaluation of the issues due to the incompleteness of the data. It is always dangerous and rarely correct to form a dogmatic position in an area with limited information.⁸²

As Sisterson’s response implied, the ASA’s determination to avoid a definitive stance on evolution put the organization at odds with the most prominent groups within American evangelicalism in ways that went beyond its scientific views. The American version of evangelical activism often manifested itself as unreflective pragmatism.

⁸⁰Reginald Daly to ASA, [April 1982], ASA Papers, Box 18; see also, Robert L. Herrmann to Pat Booth, May 20, 1982, ASA Papers, Box 18.

⁸¹H. Harold Hartzler to John A. McIntyre, July 18, 1972, ASA Papers, Box 15.

⁸²William D. Sisterson to C. Gordon Winder, February 13, 1980, ASA Papers, Box 17.

Nowhere was this clearer than in the creationist campaigns of the twentieth century. The ASA's attempts at patient reflection contradicted this pattern of action before thought. Although their success was often limited, ASA leaders sought to create an environment in which deliberate reflection and open communication between competing camps were possible. The avoidance of dogma, however, often became a source of tension within the organization. Creationists were dismayed not only by the ASA's willingness to entertain evolution but also by its unwillingness to take a stand one way or the other. Eventually, of course, the ASA did take a stand: creationism in its broadest sense did not require antievolutionism.

By the early 1980s, when the cultural and political questioning of evolution reached a fevered pitch, the ASA further publicized their position. In a press release written for the 1982 meeting of the American Association for the Advancement of Science, and released a day before the US District Court handed down its ruling in the Arkansas creation-science trial, ASA leaders proclaimed their views. Although the tone of the text was cautious and guarded, critiquing scientists as well as young earth creationists, the title – “Creationists Can Be Evolutionists!” – signaled the group's increasing willingness to resist creationism.⁸³ The ASA had thus nailed its flag to the mast. Its views had not change since the early 1960s, but it had grown comfortable with its own convictions. It would defend an evangelical understanding of evolution and no longer allowed creationists to claim the Christian view of science and scripture.

⁸³ASA, “Creationists Can Be Evolutionists!,” press release, January 4, 1982, Anderson Papers.

Beyond Evolution

At the same time that the ASA was becoming more comfortable with evolution, it was also recognizing the need to deal with other issues. Numerous leaders had expressed this idea in the early 1960s, and the 1965 survey showed that by the time of the Oxford conference the majority of members agreed. The survey revealed that the chief topics of interests to the membership overall were (1) origin of life, (2) biblical interpretation, (3) origin of the universe. This order, however, was due largely to the views of younger members (2 years or less), who, likely influenced by the resurgence of creationism in the 1960s, saw the origin of life as the most important issue by a wide margin. The views of fellows and longtime members (six years or more) varied considerably from their younger peers. The old-timers ranked the most important issues as (1) Philosophy of science, (2) Biblical interpretation, and (3) ethical problems in science.

The Oxford Conference confirmed this conviction of the fellows. None of the participants at the 1965 meeting considered transmutation a significant threat to the faith, though they did recognize that the topic would require more attention in the future. After 1965, the desire to move beyond the evolution controversies only strengthened. In August 1969, just weeks after Apollo 11 landed on the moon, the ASA held a workshop for high school teachers on science and religion in the secondary classroom. Five sessions were offered; none dealt explicitly with evolution.⁸⁴ The desire to move beyond evolution continued throughout the seventies. In 1982, the ASA council asked former ASA presidents “What is the most crucial issue that modern science poses to the

⁸⁴Program for “Workshop on Science and Religion in the High School Classroom,” held August 18, 1969, Gordon College, Wenham, Massachusetts, ASA Papers, Box 15.

Christian church today?” Of the eleven who responded, none suggested evolution.⁸⁵

Even at the height of the public evolution debates in the early 1980s, ASA president Kurt Weiss reminded members that the ASA needed “to address itself to other issues impinging on the world of science . . . [such as] conservation of energy, helping the hungry in the world, [and] the stewardship of nuclear energy.”⁸⁶ This conviction was so thoroughly shared that by 1985 Everest summarized the situation thus:

There can be little doubt that there have been shifts in the center of gravity of the spectrum among ASA members through the years. In the early days of the ASA, the evolution/creation problem maintained a high profile. Many present day members have little interest in the evolution/faith controversy.⁸⁷

Thus the ASA increasingly found need to move beyond the evolution issue. Only then could it deal with the more important issues.

The topics the ASA addressed varied considerably, and the *JASA*, particularly under Bube’s editorship, evinced the organization’s diverse interests. Between 1969 and 1983, the journal focused on topics ranging from ecology (1973 and 1980), evangelism (1972), and economics (1977) to population (1974), philosophy (1977), and psychology (1972 and 1975). Other subjects included miracles (1978), medicine (1978), genetics (1974), nuclear energy (1980), and human engineering (1976); the array of topics was impressive for an organization known almost solely for its attention to evolution. The group’s range of interests was so broad that Tinkle, intending criticism, remarked that the ASA had “the habit of commenting on some imminent social problem, giving good

⁸⁵“Let Those of Wisdom Speak,” ASA Newsletter, (April-May 1982), and (August-September 1982).

⁸⁶A Kurt Weiss, “A Message from the President,” [January 1980], in ASA Papers, Box 17, 4.

⁸⁷ Everest, *The American Scientific Affiliation*, 82.

discussions, then going on to the next big problem which claims public attention.”⁸⁸ This is not to say that evolution was avoided. Four volumes were given to the topic between 1971 and 1980, with a fifth dealing with catastrophism (1973). It is to say that while there were those within and outside of the ASA whose criticism required the group to return to the theory of evolution, leaders were always attempting to look beyond the arguments of the past in order to address the topics of the present.

One such topic revealed both the desire to address other pressing issues and the leadership’s commitment to the scientific enterprise overall. In the mid 1970s the American scientific community was embroiled in a controversy over the use and potential dangers of recombinant DNA experimentation. Recombinant DNA is created when the DNA of two different organisms are combined, resulting in a new organism. At the center of the controversy was Stanford University Medical Center professor Paul Berg and his plan to combine a virus known to cause tumors in primates with *E. coli*, a bacterium naturally found in the human large intestine. Soon after Berg’s planned experiment became known within the scientific community, numerous scientists expressed concerns of the risks involved and persuaded Berg to halt his research. By July 1974 scientists had called for a voluntary moratorium on all recombinant DNA experiments in order to explore the extent of the dangers and the steps that could be put in place in order to proceed with a reasonable level of risk. By 1975, recombinant DNA was commanding considerable attention as the National Academy of Sciences, the American Association for the Advancement of Science, and the National Institute of Health were working together to develop guidelines to safeguard research and prominent

⁸⁸William J. Tinkle to John A. McIntyre, March 26, 1973, ASA Papers, Box 15.

members of the scientific community were in heated debate and passionate disagreement about the proper steps forward. Meanwhile, popular news outlets were announcing the dangers and potential ramifications of the experiments. Some described the work as heralding a doomsday. Others regarded it as the creation of life and asked if this was the fulfillment of Dr. Frankenstein's dream. Commenting on the research program at Harvard University and the potential creation of an unknown "monster," the mayor of Cambridge, Massachusetts, was quoted as saying that the city government had reason to be "damned sure the people of Cambridge won't be affected by anything that could crawl out of that laboratory." Reflecting on the controversy twenty years later, Berg described the events as the beginning of an exceptional era in science and public discussion on science policy.⁸⁹

In response to the recombinant DNA controversy the ASA organized a symposium in which ten ASA members offered their responses to the issues. Each of the participants affirmed the value of the research and supported its continuation. Robert L. Herrmann, who replaced Sisterson as executive director in 1981, described DNA research as "the most exciting drama of this century" and challenged Christian institutions to prepare students to participate in and help guide such research.⁹⁰ J. W. Haas affirmed Herrmann's views, stating that "for the Christian in science the challenge to use his gifts

⁸⁹Charles L. Vigue and William G. Stanziale, "Recombinant DNA: History of the Controversy," *The American Biology Teacher* 41, no. 8 (November 1979): 480-483; Paul Berg and Maxine F. Singer, "The recombinant DNA controversy: Twenty years later," *Proceedings of the National Academy of the Sciences* 92 (September 1995): 9011-9013; John Kifner, "'Creation of Life' Experiment at Harvard Stirs Heated Dispute," *New York Times* June 17, 1976: 22; "Doomsday: Tinkering with Life," *Time Magazine* April 18, 1977; Stephen P. Stich, "The Recombinant DNA Debate," *Philosophy and Public Affairs* 7, no. 3 (Spring 1978): 187-205; quote from *New York Times*, 22.

⁹⁰Robert L. Herrmann, "Could Anything But Good Come Out?," in "The Recombinant DNA Controversy: Could Anything But Good Come Out?," *JASA* 30, no. 2 (June 1978): 73-81.

in a responsible way will continue to expand as science and technology push further to the heart of human existence.”⁹¹ D. Gareth Jones, one of the few active members of both the ASA and RSCF, accused those who resisted the current research of being opponents of the scientific enterprise overall.⁹² Jerry D. Albert, a research biochemist at Mercy Hospital Medical Research Facility in San Diego, California, and the organizer of the symposium, affirmed that recombinant DNA research should be “vigorously pursued with reasonable safeguards to protect the scientists and the public they serve.”⁹³ Thus the ASA not only pursued opportunities to provide an evangelical perspective on issues above and beyond the validity of evolution. It also used the opportunity to support and encourage the most advanced scientific research. Nevertheless, the only topic to receive as much attention as evolution within the pages of the *JASA* was biblical interpretation and the question of inerrancy.

The Inerrancy Question

In the 1970s and 1980s, few theological issues were as passionately contested as biblical inerrancy. In the preceding century, Princeton Theological Seminary, the bastion of conservative evangelicalism, was dominated by men such as Charles Hodge and Benjamin B. Warfield, stalwart leaders in the conservative defense of the Bible. Although Princeton Seminary eventually distanced itself from the Hodge-Warfield position after Warfield’s death in 1921, many American evangelicals articulated

⁹¹J. W. Haas, “Dangers Less Serious Than Earlier Believed,” in “The Recombinant DNA Controversy: Could Anything But Good Come Out?,” *JASA* 30, no. 2 (June 1978): 73-81.

⁹²D. Gareth Jones, “Dangerous Territory, Not Forbidden Knowledge,” in “The Recombinant DNA Controversy: Could Anything But Good Come Out?,” *JASA* 30, no. 2 (June 1978): 73-81.

⁹³Jerry D. Albert, “Worthy goals and Genesis Mandate Outweigh Dangers,” in “The Recombinant DNA Controversy: Could Anything But Good Come Out?,” *JASA* 30, no. 2 (June 1978): 73-81.

Princetonian views throughout the century. By the early 1970s, the topic was dividing the post-fundamentalist evangelicals to the point that Marsden has described the situation as full-scale civil war.⁹⁴ The most conspicuous players in the debate involved Fuller Theological Seminary (FTS) president David Allen Hubbard with the left-of-center faculty at FTS on one side and Harold Lindsell, FTS faculty from 1947 to 1964 and editor of *Christianity Today* (1969-1978), on the other. While Hubbard and company became increasingly willing to admit some degree of error within the Bible, Lindsell and those who sided with him worked to make inerrancy the test for orthodoxy.⁹⁵ The height of the controversies came between 1976 and 1986. In 1976, Lindsell published *Battle for the Bible*, an unrelenting attack on those he saw as weakening the foundation of conservative Christianity. Between 1978 and 1986 conservative evangelical leaders met three times in Chicago to hammer out a consensus regarding their understanding of inerrancy. The results were the “Chicago Statements” (1978, 1982, and 1986), which virtually codified inerrancy as a fundamentalist doctrine.⁹⁶ As a result, more than a few prominent conservatives, including Francis Schaeffer, attempted to define evangelicals as those who affirmed biblical inerrancy.

The ASA’s own inerrancy debates began well before 1965. Throughout its early history the organization participated in the evangelical practice of revising statements of faith concerning Scripture, often moving gradually further into ambiguity. The group’s original constitution offered a creed that included the phrase:

⁹⁴George Marsden, *Reforming Fundamentalism* (Grand Rapids, Michigan: William B. Eerdmans Publishing Company, 1987).

⁹⁵Marsden, *Reforming Fundamentalism*, 277-298.

⁹⁶Stephen R. Holmes, “Evangelical Doctrines of Scripture in Transatlantic Perspective,” *Evangelical Quarterly* 81.1 (2009): 42-44.

I believe in the whole Bible as originally given, to be the inspired work of God, the only unerring guide of faith and conduct. Since God is the Author of this Book, as well as the Creator and Sustainer of the physical world about us, I cannot conceive of discrepancies between statements in the Bible and the real facts of science.⁹⁷

By 1950, the creed was significantly altered and the statement pertaining to the Bible was shortened to belief in “the unique inspiration, integrity, and authority of the Bible as the word of God.” By the end of the same decade the statement changed again to “The Holy Scriptures are the inspired Word of God, the only unerring guide of faith and conduct.”⁹⁸ Each change was guided by a desire to retain the essence of the evangelical faith in the Bible without including excessive cultural and interpretative baggage.

Similar issues were of key concern at the 1965 Oxford conference where F. I. Andersen (Professor of Old Testament, The Church Divinity School of the Pacific, Berkeley, CA) stressed the importance of avoiding bibliolatry, the mistake of placing the Bible rather than Christ at the center of Christianity, and the need to recognize the welter of conflicting worldviews within which the Bible emerged. ASA participants were drawn to Andersen’s reasoning that although the biblical message was normative, the culture within which the message was given was not.⁹⁹

Hermeneutical questions were also of central importance during the 1965 debate over the publication of Bube’s *Encounter Between Christianity and Science*. Although on the surface the dispute involved evolution, the deeper issue was biblical interpretation.

⁹⁷“The Constitution of the American Scientific Affiliation” in *The Story of the American Scientific Affiliation*, in *Creation and Evolution in the Early American Scientific Affiliation*, ed. Mark A. Kalthoff (New York and London: Garland Publishing, Inc., 1995), 9.

⁹⁸Everest, *The American Scientific Affiliation*, 103-119.

⁹⁹David Moberg, “Notes of International Conference on Science and Christian Faith;” Anderson, “Notes from International Conference on Science and Christian Faith”; Hearn to author, December 13, 2008.

As the work's editor, Bube took the liberty of contributing half of the ten chapters. The fourth dealt with biblical revelation and detailed what he considered the essentials of biblical hermeneutics. He began by noting that the biblical message could not be separated from the interpretation of that message. He then demanded that readers look beyond the words of Scripture to consider the historical and cultural background of the writings and the authors' purpose: "Our chief goal must always be to determine *why* the author set his material down."¹⁰⁰ Bube paid special attention to what FTS theologian Daniel Fuller described as "revelational purpose," defined as "the message that God intends that we receive from the Bible."¹⁰¹ Few within the ASA would have found problems in Bube's approach to this point, but he soon ventured where only the most progressive members would wander. Bube admitted that errors could be found in the "technical details" of the Bible, especially in its historical and scientific content. Still, he insisted, though the Bible may be full of such errors from a modern standpoint, "if the purpose of revelation . . . is to give to men a knowledge about God and His purposes in Christ, then the Bible remains that great unique book of divine salvation."¹⁰² Throughout his work, Bube insisted that it was not the Bible that was in error as much as it was the interpretation. As examples he traced episodes from Galileo to geology to evolution in order to show how incorrect interpretations of the Bible, those which required that it

¹⁰⁰Richard H. Bube, "Biblical Revelation," in *The Encounter Between Christianity and Science*, edited by Richard H. Bube (Grand Rapids, Michigan: William B. Eerdmans Publishing Company, 1968), 91.

¹⁰¹Richard H. Bube, "Biblical Revelation," in *The Encounter Between Christianity and Science*, edited by Richard H. Bube (Grand Rapids, Michigan: William B. Eerdmans Publishing Company, 1968), 93-98; cf., Marsden, *Reforming Fundamentalism* 211-212.

¹⁰²Richard H. Bube, "Biblical Revelation," in *The Encounter Between Christianity and Science*, edited by Richard H. Bube (Grand Rapids, Michigan: William B. Eerdmans Publishing Company, 1968), 100-101.

intended strict scientific accuracy, led some to see conflict between the Scriptures and science where there was none.¹⁰³

It was this topic that Maatman saw as making *Encounter* unsuitable for ASA publication. He agreed with Bube that “the Bible was not a textbook of science”; but, he insisted, this did not entail that the Bible contained no scientific facts.

How can this statement, even though true, be a hermeneutical principle? How can we deduce from this statement . . . that the Bible teaches no scientific fact? . . . We simply do not have the right to say that the Bible teaches you only one kind, or certain kinds, of things, unless we can show that the Bible makes such a statement about itself.¹⁰⁴

Evolution may have been offensive, but anything less than inerrancy was unacceptable.

Bube thus assumed the editorship of the *JASA* in 1969 with a keen awareness of the divisive nature of the inerrancy issue. Before the end of his first year as editor he dedicated a full edition of the *Journal* to the topic. The issue opened with a paper by favored theologian Bernard Ramm that criticized as indefensible the approach many evangelicals were taking in the ensuing inerrancy debates. Previous challenges, he noted, had compelled some to insist upon inerrancy because they felt that the validity of the Bible’s spiritual and moral teachings depended upon the accuracy of the context within which they were set. Inerrancy thus became a theological necessity. Ramm disagreed:

My concern about science and inerrancy is not the same as that of my evangelical friends. They believe that the assertion of Biblical inerrancy is a theological must. . . . I think very differently at this point. To me whether there are some errors or not in Scripture is something determined empirically. We cannot dogmatize facts into or out of existence.¹⁰⁵

¹⁰³Richard H. Bube, “Biblical Revelation,” in *The Encounter Between Christianity and Science*, edited by Richard H. Bube (Grand Rapids, Michigan: William B. Eerdmans Publishing Company, 1968), 99-107.

¹⁰⁴Russell Maatman to Executive Council, ASA, August 11, 1965, Anderson Papers, 3.

¹⁰⁵Ramm, “The Relation of Science, Factual Statements and the Doctrine of Biblical Inerrancy,” *JASA* 21, no. 4 (December 1969): 98-104, quote from 102.

For Ramm, inerrancy was no proof of divine action and the “all or nothing” approach to the Bible was woefully misguided. Besides, he noted, the Catholics had already proven that “nobody can play the game of infallibilities in the twentieth century and win.”¹⁰⁶ ‘We’ must not make the same mistake, he insisted.

Ramm’s article was followed by a series of short, invited contributions from ASA leaders conveying their understanding of the relationship between science and the Bible. Of the twenty-one responses, only five found possible conflict between science and Scripture and insisted that in such cases the Bible must be considered authoritative. That most denied possible conflict suggests that the logic of MacKay’s complementarity was by this point finding support within the ASA. Bube clearly thought so. In his summary of the symposium he claimed that by a margin of 3:1 the respondents affirmed complementarity.¹⁰⁷ In fact, only two writers, Baylor University psychology professor C. Eugene Walker and Newark College of Engineering physicist W. Jim Neidhardt, described the Bible and science as complementary or mentioned complementarity and only Neidhardt displayed clear influence from MacKay or Coulson. The majority merely asserted the absence of conflict without suggesting a means for reconciliation. Bube’s summary, it seems, read complementarity into the majority of the comments and perhaps reflected his own appreciation of MacKay. Complementarity became popular within the ASA only after the 1974 publication of MacKay’s *Clockwork Image*, but it never received the level of acceptance it did within the RSCF. ASA members published

¹⁰⁶Ramm, "The Relation of Science, Factual Statements and the Doctrine of Biblical Inerrancy," *JASA* 21 (December 1969): 98-104, quote from 103.

¹⁰⁷[Richard Bube], "Summary," *JASA* 21, no. (December 1969): 124.

notable critiques in the *Journal* in the seventies and eighties. Despite those, including Bube, who affirmed complementarity, there was never any clear consent among ASA members as to its overall value.¹⁰⁸

Nevertheless, the 1969 article clearly demonstrated that the traditional assumptions of the Bible's scientific accuracy were no longer held by the majority of ASA leaders. Readers might have found it even more interesting if they had noted a pattern within the responses: those who taught at secular colleges and universities assumed complementarity, while those from Christian institutions insisted on the priority of the Bible. The only deviation was Baylor psychologist Eugene Walker's reference to complementarity.¹⁰⁹

Bube was not finished dealing with the subject. The June 1972 edition of the journal focused again on inerrancy with three articles given to the topic. The first was a reprint of "The Bible and Extra-Biblical Knowledge," an RSCF paper that portrayed the dominant views of the ASA's British allies and, as the first RSCF paper published in the *JASA*, revealed the attitudes of the RSCF that endeared it to so many of the ASA leaders.¹¹⁰ The second was a contribution by FTS theologian and biblical scholar Daniel P. Fuller. Fuller's article conveyed ideas that had become by this point the standard view of Fuller Seminary and the new evangelicals. Building on his premise that "a communication can be in error only if it fails to live up to the intention of its author" and

¹⁰⁸Richard Bube, et. al. "Symposium: The Relationship Between the Bible and Science," *JASA* 21, no. (December 1969): 104-124.

¹⁰⁹"Symposium: The Relationship Between the Bible and Science," *JASA* 21, no. 4 (December 1969): 104-124.

¹¹⁰"The Interpretation of the Bible in the Light of Extra-Biblical Knowledge," *JASA* 24, no. 2 (June 1972): 41-46.

his distinction between revelational and nonrevelational truth (issues of chronology falling in the latter category, for example) he argued:

The Bible's intention is to set forth a revelation of the happening and meaning of God's redemptive acts in history. The whole Bible is revelation. . . . The Bible is without any kind of error in whole or in part, in that it lives up perfectly to its intention to convey a revelation from God in the most pedagogically suitable manner for the original hearers and readers.¹¹¹

In other words, inerrancy could be claimed, but only for the Bible's intended message. Still, the most important article was the third, a "Dialogue" between Bube and Maatman that allowed each to defend publicly the views taken in 1965.¹¹²

Maatman was an inerrantist who believed that the Bible was "the Word of God written [and] prepared under the infallible guidance of the Holy Spirit, and is therefore inerrant in the autographs"¹¹³ Since, he argued, modern translations were significantly close to the autographs, it was reasonable to assume that such versions were sufficiently without error. This meant that the Bible was in "uniform agreement with absolute truth" and that this included "every jot and tittle" of the texts.¹¹⁴ All who claimed to detect errors in the Bible claimed to have knowledge superior to God's.

Bube's response echoed his chapter from *Encounter* and further revealed his debt to the FTS theologians. But here, in their extracted, abbreviated form and set in clear juxtaposition to Maatman's views, Bube was able to emphasize the essence of a view that

¹¹¹Daniel P. Fuller, "The Nature of Biblical Inerrancy," *JASA* 24, no. 2 (June 1972): 47-50.

¹¹²Russell W. Maatman and Richard H. Bube, "Inerrancy, Revelation and Evolution," *JASA* 24, no. 2 (June 1972): 80-88.

¹¹³Russell W. Maatman and Richard H. Bube, "Inerrancy, Revelation and Evolution," *JASA* 24, no. 2 (June 1972): 80.

¹¹⁴Russell W. Maatman and Richard H. Bube, "Inerrancy, Revelation and Evolution," *JASA* 24, no. 2 (June 1972): 80.

he was sure could be aligned with modern science. Drawing upon distinctions he had learned from Dan Fuller and the late Fuller Seminary president E. J. Carnell (1919-1967), the only author Bube cited in his article besides himself, he argued that the Word of God “was written in the words of men who were guided by the Holy Spirit so that they faithfully conveyed the purpose of God’s revelation to man. Thus, when we inquire as to the content of the Biblical revelation in terms of the purpose for which it was written, we are assured of a completely authoritative and trustworthy Word.”¹¹⁵ The purpose of the Bible was to reveal Jesus Christ as Lord and Savior and God as Redeemer, to confirm and strengthen the faith of believers, and to provide a guide for Christian living. Only if the Bible failed to attain these goals, he insisted, could it be said to be in error:

To insist that every passage of the Biblical revelation that seems to present a scientific mechanism must do so with absolute authority and finality, that the Bible must be literally and completely true whenever a scientific matter is apparently mentioned in the text, may well be to miss the kind of book the Bible is. In a misguided effort to preserve and defend a ‘high view of inspiration,’ the very spirit of the book and its purpose is misrepresented.¹¹⁶

Bube thus came to the heart of the matter. The desire to defend every apparent historical and scientific claim in the Bible missed the point the biblical authors were trying to make. Bube went on to affirm his high view of science and insisted that since extra-biblical data was required for biblical interpretation, “interpretations of the Bible cannot ultimately contradict interpretations of the natural world.”¹¹⁷ To make the point, Bube grounded his argument in the most obvious issue at hand. “We do not know how much of Genesis 1-3

¹¹⁵Russell W. Maatman and Richard H. Bube, “Inerrancy, Revelation and Evolution” *JASA* 24, no. 2 (June 1972):81.

¹¹⁶Russell W. Maatman and Richard H. Bube, “Inerrancy, Revelation and Evolution,” *JASA* 24, no. 2 (June 1972): 83.

¹¹⁷Russell W. Maatman and Richard H. Bube, “Inerrancy, Revelation and Evolution,” *JASA* 24, no. 2 (June 1972): 83.

should be taken as literal historical fact;” he wrote, “we must be open, however, at least to the possibility that the principal purpose of these chapters lies elsewhere.”¹¹⁸

Throughout the remainder of the decade the *JASA* carried articles, responses, and rejoinders that further hashed out the issues.

It would be an overstatement to claim that the ensuing actions of Lindsell and the International Council on Biblical Inerrancy, the organization that produced the Chicago Statements, were in direct response to the ideas developing in the ASA. Nevertheless, in *Battle for the Bible*, Lindsell named Bube and the ASA as evidence that the “disease with which we are dealing [the denial of strict inerrancy] . . . has spread into parachurch organizations.”¹¹⁹ The first two Chicago Statements countered the specific arguments made by Fuller and Bube, as well as those by liberals and the neo-orthodox, and made clear reference to the science issues discussed in the ASA. The Chicago Statement on Biblical Inerrancy (1978) insisted that the Bible was accurate on “all matters which the Biblical authors were moved to speak and write” (Article IX) and denied that inerrancy was “limited to spiritual, religious, or redemptive themes, exclusive of assertions in the fields of history and science” (Article XII).¹²⁰ The statement denied further “that scientific hypotheses about earth history may properly be used to overturn the teaching of Scripture on creation and the flood” (Article XII).¹²¹ The Chicago Statement on Biblical

¹¹⁸Russell W. Maatman and Richard H. Bube, “Inerrancy, Revelation and Evolution,” *JASA* 24, no. 2 (June 1972): 83.

¹¹⁹Harold Lindsell, *Battle for the Bible* (Grand Rapids, MI: Zondervan Publishing House, 1976), 128-131.

¹²⁰“The Chicago Statements on Biblical Inerrancy,” *Journal of the Evangelical Theological Society* 21, no. 4 (December 1978): 291.

¹²¹“The Chicago Statements on Biblical Inerrancy,” *Journal of the Evangelical Theological Society* 21, no. 4 (December 1978): 292.

Hermeneutics (1982) went even further, affirming “that Genesis 1-11 is factual, as is the rest of the book” and denying the chapters as “mythical and that scientific hypotheses about earth history or the origin of humanity may be invoked to overthrow what Scripture teaches about creation” (Article XXII).¹²² Just in case there was any confusion, Norman Geisler, who chaired the ICBI, explained:

Since the historicity and the scientific accuracy of the early chapters of the Bible have come under severe attack, it is important to apply the “literal” hermeneutic espoused [in Article XV] to this question. The result was a recognition of the factual nature of the account of the creation of the universe, all living things, the special creation of man, the Fall, and the Flood. These accounts are all factual, that is, they are about space-time events which actually happened as reported in the book of Genesis.¹²³

Although this statement left the possibility of accepting an ancient earth, Geisler continued, it excluded “the belief in macro-evolution, whether of the atheistic or theistic varieties.”¹²⁴

The ASA’s unofficial endorsement of Bube’s views came in 1979, one year after the first Chicago Statement. The June issue of the *Journal* was again dedicated to the topic of inerrancy. Three articles were offered. All three affirmed views compatible with Bube’s.¹²⁵ Of course, not all ASA members accepted silently such modern views. Soon after the summer issue came out, Hartzler wrote to Bube expressing his disappointment

¹²²“The Chicago Statement on Biblical Inerrancy,” *Journal of the Evangelical Theological Society* 25, no. 4 (December 1982): 401.

¹²³Norman L. Geisler, *Explaining Hermeneutics: A Commentary* (Oakland, CA: International Council on Biblical Inerrancy, 1983), 17.

¹²⁴Norman L. Geisler, *Explaining Hermeneutics: A Commentary* (Oakland, CA: International Council on Biblical Inerrancy, 1983), 17.

¹²⁵Clark H. Pinnock, “The Ongoing Struggle Over Biblical Inerrancy,” *JASA* 31, no. 2 (June 1979): 69-74; Richard J. Coleman, “Another View: The Battle for the Bible,” *JASA* 31, no. 2 (June 1979): 72-79; Timothy R. Phillips, “The Argument for Inerrancy: An Analysis,” *JASA* 31, no. 2 (June 1979): 80-88.

with the emerging consensus within the ASA.¹²⁶ Bube responded with due deference by clearly affirming his fidelity to inerrancy while narrowly defining the question at hand: “The question raised by myself and the authors of the June issue is not the question of whether the Bible is inerrant, but what does it mean to assert that the Bible is inerrant.”¹²⁷ The December 1979 issue of the *JASA* carried criticism that accused those who denied inerrancy of forsaking the ASA’s statement of faith.¹²⁸ In March 1980, Geisler published a three-part critique of the June 1979 articles. Still, others voiced strong agreement with the published views. Sisterson affirmed the thrust of Bube’s argument. He also suggested that the ASA’s willingness to take such a public stand on the inerrancy issue stemmed in part from its increasing desire to defend anti-creationist views:

We believe in the full authority of the Scripture and that science is a reliable approach to the truth. We try to maintain integrity to both science and theology. . . . We receive quite a bit of pressure from both sides wanting us to fit the Bible into science or to fit science into the Bible and we try to resist that as much as possible. . . . [W]e go only as far as the Bible goes. We don’t make truth claims that the Bible does not make for itself. We believe this to be more Biblical and consistent than the position of some others.¹²⁹

By summer 1980, the consensus among the ASA leaders had become so strong that Sisterson admitted that the group had come “very close to taking the position that a literal interpretation is impossible.”¹³⁰

Thus, while evolution may have seemed the chief concern of the ASA, The question of origins only led the organization to examine more closely its views of the

¹²⁶H. Harold Hartzler to F. Alton Everest, August 20, 1979, ASA Papers, Box 17.

¹²⁷Richard H. Bube to H. Harold Hartzler, August 25, 1979, ASA Papers, Box 17.

¹²⁸“Letters: Some were pleased . . . Others were not,” *JASA* 31, no. 4 (December 1974) 223-224.

¹²⁹William D. Sisterson to Ed Grim, June 4, 1980, ASA Papers, Box 17.

¹³⁰Bill Sisterson to Peter R. Powell, August 21, 1980, ASA Papers, Box 17.

nature of the Bible and the relationship between Scripture and science. No other issues were as hotly contested. No other issues had as far-reaching consequences.

Conclusion

If the story of the ASA before 1965 was one of transition, afterwards it was one of maturity and resolve. Having chosen against antievolutionism in the early part of the decade, leaders now struggled to defend their position against the swelling tide of creationism. Soon the organization, which always claimed an open position on controversial issues, recognized the need for a prominent defense of evolutionary science. Creationism would not be allowed to claim the evangelical view of science. As time progressed the ASA tried to put the evolution controversies aside in order to focus on more important and pressing issues. Yet the group could not escape its context and was forced to return to the most contentious issues: first evolution, then inerrancy. Key for its success was the ability to build upon the level of professionalism it had achieved earlier in its history. Most prominent during this period was Stanford professor Richard H. Bube. First as president and then as editor of the *JASA*, Bube's guiding hand helped steady the ASA as it charted its course through hostile waters. For those willing to take notice, the ASA demonstrated that from Harvard to Stanford there were scientists of the highest caliber struggling to draw connections between the fundamentals of conservative evangelicalism and the most important issues in contemporary science.

CHAPTER SIX

The Research Scientists' Christian Fellowship: 1965 – 1985

“It is now many years since I first read that the issues of ‘Science and Religion’ had been beaten to death In principle, it may be true that the issue is dead; but in practice it stubbornly refuses to lie down.”

- Donald M. MacKay, 1973¹

The UK experienced its own cultural changes during the 1960s. Responses to national and international events highlighted growing differences between British youth and their elders. Emerging forms of entertainment and media, rock-n-roll and television, helped undermine traditional religious and social practices. Medical advances fostered the sexual revolution, which propelled dramatic changes in traditional social piety. Plummeting numbers in attendance signaled a crisis within the churches. The culmination of these events, so argues historian Callum G. Brown, brought about “the death of Christian Britain,” the end of Britain’s Christian identity.² In the following decade, many of these changes grew more salient as the erstwhile scientific and medical advances became more common in daily life. The growing concerns of environmentalism during the 1970s, the availability of the pill through the National Health Service in 1975, and the arrival of the first “test-tube” baby in 1979 brought new and previously unimagined ethical challenges.³ Meanwhile, British higher education

¹From DMM, “Apologetics Today,” (paper presented at the RSCF annual conference, Bedford College, London, September 29, 1973).

²Callum G. Brown, *The Death of Christian Britain* (London and New York: Routledge, 2001); see also, Adrian Hastings, *A History of English Christianity, 1920-2000* (London: SCM Press, 2001), 580-586.

³Arthur Marwick, *British Society Since 1945*, new edition (London: Penguin Books, 2003), 216-216.

experienced a rapid transformation. The Robbins Report of 1963 prompted considerable growth in the number of universities. New institutions were founded. Existing colleges and technical schools were granted university charters. In response came a deluge of new students. In 1954, Britain was home to roughly 122,000 fulltime students of higher education. By 1970, the number had grown to 457,000.⁴

These developments both tested and enriched the Research Scientists' Christian Fellowship. The environmental and social concerns brought new challenges to the scientific enterprise overall. The surge in the numbers of those attending university provided an incubator for the social changes that transformed the next generation.⁵ It also fostered considerable growth in RSCF membership. By 1982 the group boasted between 700 and 800 members.⁶ With larger membership came a greater diversity of views and, perhaps surprisingly, an increasingly prominent conservatism compared with the earlier years. The RSCF was never a univocal group, but this period saw a marked proliferation of voices that echoed many of the arguments of American-style creationism and fundamentalism, a phenomenon some linked with the anti-science aspect of the 1960's social revolution. As a result, the RSCF was compelled to return to issues of the past in order to help bring along a new generation as it looked to the challenges ahead.

⁴A. H. Halsey, "Further and Higher Education," in *Twentieth-Century British Social Trends*, eds. A. H. Halsey and Josephine Webb (New York: St. Martin's Press, Inc, 2000), 225-232.

⁵Bernice Martin, *A Sociology of Contemporary Cultural Change* (Oxford: Blackwell, 1981).

⁶RJ Berry to RSCF Members, June 1982, archived in RSCF committee minutes, September 6, 1982.

Membership

The RSCF became noticeably more diverse after 1965. Although membership was officially limited to “research scientists,” increased numbers brought a greater array of professions and a diversity of theological and scientific views. Chemists (20%), physicists (20%), and biologists (14%), continued to make up the majority of the group, with another 15% coming from the combined sciences. Men remained the majority (94%) of the membership. Roughly 10% of the members were non-scientists, mostly theologians, clergy, or historians. Yet by 1985, noticeable changes had occurred. As will be seen throughout this chapter, increased conservatism within the ranks of the RSCF posed a preoccupying problem for the senior figures who remained united in their views and committed to the ideas forged during the previous decades.

Oliver R. Barclay, the enduring secretary and heartbeat of the group, retained his post throughout this period. He was increasingly driven by a keen awareness for the broad range of issues university students faced and the diverse challenges confronting evangelicalism. Publications such as *Whose World?* (1970) and *Salt to the World* (1978), both written under his pseudonym A. N. Triton, evince his deep concern for social issues ranging from stewardship of natural resources to Christian views of education and finances. His *Guidance: Some Biblical Principles* (1966) reveals his practical and pastoral concerns. As General Secretary of UCCF, he drew attention to an array of contemporary issues Christians were facing and the need for a strategic vision that looked beyond the walls of the church.⁷ Always an enemy of complacency, by the 1980s he was warning against stagnation in vision or strategy as Tyndale House sought to engage the contemporary world. “It is unfortunate,” he lamented in 1983, “that the Evangelicals

⁷Noble, *Tyndale House and Fellowship*, 194.

have become the new bastions of much irrelevant scholarship.”⁸ Yet he was perhaps most comfortable when dealing with scientific questions and the potential conflict with Christian faith, as demonstrated by his lucid and insightful *Reasons for Faith* (1974).

The most important new figure was Dr. (later Professor) R. J. Berry. Berry (b. 1934), known to his friends as Sam, studied biology at Cambridge when R. A. Fisher was head of the department and began his post-graduate research at University College London when J. B. S. Haldane held the chair of biometry. He earned his PhD in genetics in 1974 and remained at UCL as a faculty member until his retirement in 2000. In 1981, Berry became a Fellow of the Royal Society of Edinburgh. He has served as president of the Linnean Society (1982 to 1985) and the British Ecological Society (1987 to 1989). He received a Templeton UK Individual Award in 1996 for his “sustained advocacy of the Christian faith in the world of science” and delivered the 1997-98 Gifford Lectures. Throughout his career, he remained an active member of the Church of England.⁹ In October 1967, the RSCF committee elected him to succeed Alan J. Weir as chair for a three-year term, a position he held until 1988.¹⁰

With the exception of Barclay and Berry the committee continued to consist primarily of junior members. As Barclay described in response to a letter of inquiry from the ASA, “We leave our elder statesmen like Professor Donald MacKay . . . to spend their energies not so much in planning committees as in speaking and writing.”¹¹ The

⁸Barclay, “Tyndale House Policy: Some Questions,” a paper delivered at the Tyndale House Council Meeting, January 1983, quoted in Noble, *Tyndale House and Fellowship*, 194.

⁹R. J. Berry, *God and the Biologist: Faith at the Frontiers of Science* (Leicester, England: Apollos, 1996), 4-6; R. J. Berry, interview by author, July 31, 2008, Sevenoaks, England.

¹⁰RSCF committee minutes, October 19, 1967, RSCF Papers.

¹¹Barclay to Hazel Fetherhuff, September 8, 1969, in ASA Papers, Box 15.

elder statesmen also included historian R. Hooykaas, psychologist Malcolm Jeeves, space scientists Sir Robert Boyd, biologist D. Gareth Jones, and biophysicist Douglas Spanner. Thus, both the vision and public image of the RSCF remained consistent in the two decades following 1965.

The Task at Hand

Within a decade of its founding the RSCF had defined itself as an apologetic body intended to explore Christian views of science for the benefit of both the church and scientific community. For the former, the group sought to provide thoughtful reflection upon issues that touched the church's theology and mission. For the latter, it sought to demonstrate the compatibility of Christian faith and modern science by explaining the complementary nature of the Christian and scientific views. By the early 1970s, the RSCF began to reexamine and reaffirm these goals.

The most important question the RSCF dealt with in this regard was one of purpose: How did the RSCF fit into the larger work of the church? The 1973 annual conference on the "Scope and Limits of Apologetics" helped provide an answer by attempting to define the appropriate place for intellectual argument within evangelism. The conference began with a Keele RSCF group questioning the overall value of apologetics. The power of the gospel, they argued, comes not from reasoning but from preaching the death of Christ and the consequences of sin. Intellectual arguments should merely clarify the Christian message to prevent unbelievers from confusing the essence of the gospel with inconsequential or incorrect ideas.¹² A St. Andrews group took a more

¹²A Keele RSCF Group, "The Biblical Approach to Apologetics: What place in evangelism has reasoning from other than a Biblical basis?," (paper presented at the RSCF annual conference, Bedford College, London, September 29, 1973).

positive view, arguing that the appropriate task of apologetics was to remove genuine intellectual obstacles that kept some from the faith.¹³ A Manchester group argued in the other direction, seeing the role as demonstrating the weakness of secularism rather than the validity of Christianity.¹⁴ In all, these groups asserted a limited place for apologetics by attempting to distinguish real obstacles to faith from illusionary ones. Claimed intellectual hindrances were regarded as little more than smokescreens obscuring the true issues of will and pride. But two other papers offered a positive view that best served the goals of the RSCF. The first was a contribution by an Oxford RSCF group, later published in the *Christian Graduate*. The second was a personal contribution by Donald MacKay.

The Oxford group recognized past mistakes that had occurred when Christians, in an effort to present the faith as compatible with contemporary culture, went too far in assimilating theology with the then dominant worldview. Augustine, Thomas Aquinas, and Friedrich Schleiermacher were seen as guilty of this error. Their attempts to make Christian faith appealing to their contemporaries allowed unbiblical ideas to creep into their theology: “the common factor in all of these apologetic disasters seems to have been that instead of presenting Christianity as a viable alternative to the current ideologies, the apologists have effected a wholesale synthesis of the two.”¹⁵ In contrast, the group argued, the church should attempt to demonstrate how the Christian worldview makes

¹³A St. Andrews Group, “Apologetics in the Light of the Fall,” (paper presented at the RSCF annual conference, Bedford College, London, September 29, 1973).

¹⁴A Manchester Group, “Contrast in Apologetic Strategy Today,” (paper presented at the RSCF annual conference, Bedford College, London, September 29, 1973).

¹⁵An Oxford RSCF Group, “Apologetics,” (paper presented at the RSCF annual conference, Bedford College, London, September 29, 1973).

sense of the knowledge, problems, and potential of the modern world without denying the uniqueness of Christianity. Whether the writings of figures such as Thomas Aquinas and Augustine deserved to be deemed disasters, the point was well taken. RSCF efforts must not result in a mere Christian gloss of prevailing cultural views.

MacKay argued that the primary purpose of apologetics was to remove intellectual obstacles even if, as the Keele group argued, the true obstacles to faith were spiritual and moral. MacKay saw three questions about the faith that needed answering: Is it possible? Is it meaningful? Is it true? In the past, he suggested, the primary question might have been the first, but in the mid-twentieth century it was more often the latter. MacKay further recognized the problems experienced by scientifically minded people used to dealing with evidence and experiments rather than faith and authority. Reaching such people, he argued, was not a matter of reminding them of the faith that functioned in their everyday lives, a popular evangelical tactic. Instead, two approaches should be taken. First, they must be reminded of the fundamental questions scientists are trained to ask: If X were true, what ought to be the case? And how does one discover whether this is the case? These questions could be legitimately asked of Christian claims. Second, scientists must be reminded of the difference between methodological reductionism (a fundamental principle of modern science) and metaphysical reductionism (the trap of ‘nothing buttery’). This kind of apologetics, MacKay urged, was both a service to God and “a most natural and urgently needed expression of compassion for our spiritually starving world.”¹⁶

¹⁶Donald M. MacKay, “Apologetics Today,” (paper presented at the RSCF annual conference, Bedford College, London, September 29, 1973), 34.

Such episodes of self-examination led the group to reconsider and clarify its aims and purposes. In 1981, the RSCF affirmed its previous statements and added an overarching goal that was borrowed from the international conference in 1965: “to change the whole climate of thought about Science and Faith so that it becomes generally known that there is no conflict but rather harmony and a positive relationship between the two.”¹⁷ This noble, if somewhat Quixotic, cause motivated the work of the RSCF. No one, the leaders argued, should be able to hide behind science as an excuse for unbelief. In a letter to RSCF members in 1982, Berry elaborated, stating that they sought to remove ill informed criticisms of Christianity stemming from science, to promote a proper attitude towards God’s world, to reach the scientifically minded through other scientists who were Christians, and to stand up for science as a God-given but limited activity. Accomplishing these objectives, he wrote, brought a “major task of apologetics and considerable opportunity for evangelism.”¹⁸

Publications and annual meetings remained the primary means by which the RSCF sought to fulfill their goals. The committee consistently encouraged the publication of helpful literature on the topics ranging from ecology to technology to evolution, but events beyond their control often frustrated their efforts. In 1969, Barclay boasted that since the RSCF used the *Christian Graduate* as its journal, which had a circulation of approximately 10,000, their material reached a readership roughly ten-times greater than the number of its members.¹⁹ Despite this exposure, however, the

¹⁷RSCF committee minutes, May 18, 1981, RSCF Papers.

¹⁸R. J. Berry to RSCF Members, June 1982, RSCF Papers.

¹⁹ Barclay to Hazel Fetherhuff, September 8, 1969, in ASA Papers, Box 15.

committee often felt frustrated by the limited space afforded to them.²⁰ Both the *Journal of the American Scientific Affiliation* and *Faith and Thought*, the journal of the Victoria Institute, were considered as outlets for papers and articles.²¹ Inflation during the 1970s hindered their own publication efforts as publishers, including IVF, became more cautious.²² The committee was disappointed to learn that MacKay's *Christianity in a Mechanistic Universe* would be allowed to go out of print and tried on numerous occasions to encourage its republication or replacement.²³ In 1977, they began plans to replace *Scientific Enterprise and Christian Faith*, the published report of the 1965 Oxford Conference, with an up-to-date collection of papers from a "heavyweight symposium" on science and religion.²⁴ Throughout this period, local and annual conferences remained the primary forums for hammering out their views and addressing the challenges that arose.

The range of subjects dealt with in annual conferences and the *Christian Graduate* reveals the diverse interests of the group and the issues it saw as most important. Between 1965 and 1985, conference topics included population, world hunger, and the exploitation of nature (1965), human knowledge (1966), science and ethics (1968, 1978, 1985), environmentalism (1972), and human engineering (1976). Yet the most important issues the group addressed were more basic. Three of them –

²⁰RSCF committee minutes, November 17, 1980.

²¹RSCF committee minutes, May 5, 1969, RSCF Papers; RSCF committee minutes, September 6, 1982, RSCF Papers.

²²Ronald Inchley, in Douglas Johnson, *Contending for the Faith*, 319; cf. Marwick, 216-217.

²³RSCF committee minutes, April 30, 1973, RSCF Papers; RSCF committee minutes, October 15, 1979, RSCF Papers; RSCF committee minutes, March 27, 1981, RSCF Papers.

²⁴RSCF committee minutes, May 9, 1977, RSCF Papers.

questions regarding the nature of the Bible, the validity of miracles, and the question of evolution – were largely exercises in confirming previously established views for a younger generation. A fourth stemmed from critical cultural reactions to science and prompted the RSCF to become advocates for the scientific enterprise more broadly.

Miracles

In order to reduce the perception of conflict between science and Christianity, the RSCF leaders had to readdress the question of miracles. Ever since David Hume's eighteenth-century critique many had come to see miracles as a holdover from a more primitive age, inconsistent with modern knowledge and disproven by advanced science. The RSCF had taken this issue seriously from the beginning. As conservative evangelicals, RSCF members saw miracles as the foundation of Christian faith. As Gareth Jones stated in 1966, "Miracles bring us face to face with Christianity. When miracles are on trial, so is Christianity."²⁵

By 1965, the RSCF had clarified two fundamental convictions: miracles did not require breaks in natural laws, and even when such laws were broken, the events were not incompatible with a modern scientific view of the world. R. Hooykaas's argument that divine activity and natural causes were not mutually exclusive categories continued to inform this line of thought, which was confirmed by Clark Pinnock at the international conference in Oxford. Although miracles were events that would be otherwise unusual given normal observations and expectations, they did not necessarily imply a lack of natural causes.²⁶ "Miracles" Pinnock argued, "are not precisely 'invasions' in a deistic

²⁵Jones, "The Challenge of Miracles" *Christian Graduate* 19, no. 2 (June 1966): 11.

²⁶Noted in Jeeves, *Scientific Enterprise and Christian Faith*, 29-30.

sense (for God was ‘there’ already) nor perfectly ‘natural’ in a monistic sense (for God stands above His world too) – they are rather special acts of God using whatever secondary means he may, which direct the mind to His word.”²⁷ The following year Gareth Jones concurred, arguing that while nature was distinct from God, its existence relied on him. Nature is not a closed system, does not have a reality of its own, and does not have laws opposed to God’s design: “there is no antithesis between the activity of God and a self-contained world.”²⁸ “This conclusion is of inestimable importance,” he continued, “as it dispenses with the idea that a miracle is an arbitrary interference with the normal running of nature.”²⁹ Jones went on to define a miracle as “an unusual event in the external world, having a redemptive purpose, and resulting from what appears to man to be a temporary change of direction in God’s detailed upholding of nature.”³⁰ In 1971, a Cambridge RSCF group agreed with this overall view, defining a biblical miracle as “an extraordinary and striking event, which the writer takes as a special disclosure of God’s activity.”³¹

Conservative critiques, however, were growing in prominence. In 1980, Edgar H. Andrews, Professor of Material Science at Queen Mary College London, published *God, Science and Evolution* in which he defined a miracle as “an event consequent upon a localized change in the laws of nature” – events explainable by natural causes were not

²⁷Clark E. Pinnock, “On Miracles” (paper presented at the International Conference on Science and Christian Faith, Regent’s Park College, Oxford, July 16 to July 26, 1965), Moberg Papers.

²⁸Jones, “The Challenge of Miracles,” *Christian Graduate*, 9.

²⁹Jones, “The Challenge of Miracles,” *Christian Graduate*, 9

³⁰Jones, “The Challenge of Miracles” *Christian Graduate*, 10.

³¹A Cambridge Group, “Biblical Miracles” (paper presented at the annual conference of the Research Scientists’ Christian Fellowship, Bedford College, London, September 25, 1971), 2.

miraculous. The Old Testament account of the Israelites crossing the Red Sea, for example, may have been an impressive act of God, but it was not a miracle because natural forces could explain the sea's actions. He then employed this definition to counter those who accepted evolution as God's method for creation.³² If God was merely using natural forces, the creation was no longer a miracle. Andrews accused theistic evolution of being a tool employed by those who were embarrassed by the biblical account of the miracle of Creation.³³

Yet more than conservative commentary aroused the attention of the RSCF. In the 1960s, evangelical leaders feared the rise of a new, more radical liberalism signaled by the publication and rapid sales of John A. T. Robinson's *Honest to God* (1963). Robinson conveyed in popular style ideas continental theologians such as Paul Tillich (1886-1965) and Rudolf Bultmann (1884-1976) had been writing about for decades, and his writings represented radical theological trends popular in the mid 1960s. Although the radicalism of the sixties was not enduring, the threat that such views might gain wide cultural influence prompted great concern among evangelicals, including the RSCF. While RSCF leaders were willing to reinterpret biblical accounts of creation, they were unwilling to forgo orthodox claims about God and Christ, sin and death, or cross and resurrection.³⁴

³²E. J. Andrews, "God in miracle and providence" (paper presented at the annual conference of the Research Scientists' Christian Fellowship, Bedford College, Regent's Park, London, September 29, 1984), also published in *God, Science, and Evolution*, chapter 3, quote from 47.

³³ E. J. Andrews, "God in miracle and providence," 47-52.

³⁴ Hastings, *A History of English Christianity*, 536-547; Keith Robbins, *England, Ireland, Scotland, Wales: The Christian Church 1900-2000* (Oxford and New York: Oxford University Press, 2008), 376-379.

The question of miracles became a spectacle in 1984 after a BBC interview on April 24 with David E. Jenkins, the Bishop-designate of Durham. Jenkins was a theologian who believed that modern, educated people could not accept miracles as described in the Bible. During the interview he described many of the Gospel miracles as myths and denied the historicity of the resurrection.³⁵ A controversy erupted when the interview aired a few days later. On July 13, *The Times* published a brief letter of response signed by key RSCF leaders – including Berry, Sir Robert Boyd, Malcolm Jeeves, Colin Russell, and Douglas Spanner – that argued that it was illogical to claim that science had disproven the reality of miracles. “Whatever the current fashions in philosophy or the revelations of opinion polls may suggest,” they wrote, “it is important to affirm that science (based as it is upon the observation of precedents) can have nothing to say on the subject.”³⁶ After continued controversy Berry was invited by the journal *Nature* to produce a longer article on the subject, which was published in July 1986 under the title “What to believe about miracles.”³⁷ If the hope was that a longer essay by a leading scientist would assuage the controversy, it was unfulfilled. Public and private responses continued, including a letter to Berry from a leading American biologist who wrote that to him the only miracle was “that *Nature* would publish such dreary bullshit.”³⁸

Auspiciously, the committee had decided before the Jenkins interview that the topic for the 1984 annual meeting would be miracles. The lead paper was offered by the

³⁵David E. Jenkins, *The Calling of a cuckoo: not quite an autobiography* (London and New York: Continuum, 2002), 27-30.

³⁶Berry, et al, “Science and belief in miracles” Letters to the Editor *The Times* (July 13, 1984): 15.

³⁷R. J. Berry, “What to believe about miracles” *Nature* 322 (July 24, 1986): 321-322.

³⁸R. J. Berry, “Divine Action: Expected and Unexpected” *Zygon* 37, no. 3 (September 2002): 720.

Reverend Dr. Ernest C. Lucas, leader of the RSCF miracles study group. That such a group existed testifies to the importance of the issue for the RSCF. Lucas's paper defended both aspects of the RSCF 'official' understanding of miracles. In contrast to the claims made by modernists such as Jenkins, Lucas argued that with the passing of the Newtonian world natural laws were no longer accepted as entities controlling the universe.³⁹ Thanks to the rise of quantum theory and the theory of relativity, he argued, "the universe is a much more mysterious place to the modern scientist than it was to the scientists of a century or more ago."⁴⁰ What did this mean? he asked. It meant that "natural laws are no more or less than provisional descriptions of observed uniformities. There are no grounds for giving them a metaphysical status and using them as an a priori ground for dismissing miracles as impossible."⁴¹ Lucas went on to employ Hume's arguments against the principle of uniformity to argue that there was room in the scientific worldview for miracles. He then drew from C. S. Lewis's critique of Hume to reveal the circular reasoning, predispositions, and inconsistencies the Scotsman displayed in denying the possibility of miracles. "Once again," he insisted, "we come to the conclusion that there are no a priori grounds for dismissing miracles."⁴² In contrast to the claims made by conservatives such as Andrews (which he addressed only briefly) Lucas affirmed that biblical miracles did not necessitate breaks in the natural laws. "The important thing for the biblical writers," he argued, "is not whether or not there is a

³⁹E. C. Lucas, "Miracles and Natural Laws" (paper presented at the annual conference of the Research Scientists' Christian Fellowship, Bedford College, Regent's Park, London, September 29, 1984), 1.

⁴⁰ E. C. Lucas, "Miracles and Natural Laws," 1.

⁴¹ E. C. Lucas, "Miracles and Natural Laws" 2.

⁴²E. C. Lucas, "Miracles and Natural Laws," 3.

departure from natural law, but the religious significance of the event. This is why the commonest term for such events is ‘sign.’”⁴³ Miracles in the biblical sense were events that pointed as a sign to God and his purposes.

Of the other papers offered for the 1984 conference, only one, a reprint of the miracles chapter from Andrews’s *God, Science and Evolution*, disagreed significantly with Lucas’s contribution. The RSCF was unmoved from its affirmation of miracles as one aspect of God’s providence and normal interaction with the natural world. But questions of miracles were not the only issues where the RSCF was challenged to maintain a centrist position of affirming conservative evangelical theology and modern scientific views of the world. As Andrews’s arguments rightly implied, all of the background issues involved in the questions of miracles came to a head when dealing with evolution.

Evolution

By 1965 the guiding figures of the RSCF had unapologetically fixed their understanding of the relationship between evolutionary science and conservative evangelical theology. Evolution – defined as the derivation of all species, including humanity, from different pre-existing species through a process of descent with modification – was recognized as the valid scientific explanation for the creation of the natural world. Against those who argued that evolution occurred only within a family or order, they were clear that “all forms of life are related by descent.”⁴⁴ They rejected antievolutionary arguments as unscientific – especially those that assumed that an

⁴³ E. C. Lucas, “Miracles and Natural Laws,” 4.

⁴⁴ Jeeves, *Scientific Enterprise and Christian Faith*, 98.

“almost impossible level of proof” was required to establish the validity of evolution – and recognized natural selection as the best available mechanism for understanding how transmutation occurred. The RSCF also acknowledged that evolutionary theory remained open to future scientific challenges that one day might undermine its validity. As Malcolm Jeeves wrote in his report of the 1965 international meeting, *The Scientific Enterprise and Christian Faith* (1969), “For all its explanatory power and potential we must be careful, however, not to suggest that evolutionary theory has any more permanence or ultimate validity than any other scientific theory. Theories by their nature are expendable; but at the present time the neo-Darwinian theory . . . accounts best for the data and does so with greater economy and greater elegance than any other.”⁴⁵

Regarding the relationship between evolution and Christianity, the RSCF was equally clear; evolution and natural selection threatened neither the Bible nor Christianity because scientific explanations and religious faith were categorically removed from one another. It was impossible for science to refute or validate the most basic Christian claims, and Christianity had little if any immediate effect on the fundamental principles of scientific investigation. As Jeeves wrote:

God, to the theist, while being the cause of everything, is in the scientific sense the explanation of nothing. Scientific knowledge in itself no more proves the existence of God than it disproves it. Thus . . . there is *in principle* no conflict between Christian faith in general and the discovering of a scientific mechanism for creation. When people (both atheists and theists) say that evolution (as a scientific theory) undermines faith they are quite wrong. In principle it cannot do so. This piece of scientific explanation is in principle no more contrary to Christian theism than any other piece of scientific explanation.⁴⁶

⁴⁵Jeeves, *Scientific Enterprise and Christian Faith*, 99.

⁴⁶Jeeves, *Scientific Enterprise and Christian Faith*, 103.

In other words, because of fundamental differences between science and faith, God should not be relied upon to construct scientific explanations about the natural world, modern science was incapable of proving or disproving God's existence, and a commitment to the Genesis account of creation should not preclude one from accepting evolutionary theory, and vice versa. These views prevailed among the most prominent members of the RSCF. In the decades following 1965, however, they were challenged by voices from the left and right. In each case, the RSCF strived to defend its fidelity to both modern science and conservative evangelical theology, and in doing so helped smooth a middle way between liberal accommodation to science and fundamentalist rejection.

The Phenomenon of Man

By the time of the 1965 Oxford conference, the group's attention was already drawn to a French scientist and theologian whose writings about evolution and Christianity gained considerable attention in the second half of the century. Pierre Teilhard de Chardin (1881-1955) was a paleontologist and Jesuit priest whose views became widely known after the posthumous publication of his *Phénomène Humain* in 1955. When the *Phenomenon of Man* was translated into English in 1959, it included an introduction by the avowed humanist Sir Julian Huxley, who wrote that because of Teilhard's work "the religiously-minded can no longer turn their backs upon the natural world . . . nor can the materialistically-minded deny importance to spiritual experience and religious feeling."⁴⁷ *The Phenomenon of Man* was quickly recognized as a significant contribution to the ongoing science-faith dialogue, though not everyone

⁴⁷Huxley, Introduction in Teilhard de Chardin, *The Phenomenon of Man* (New York: Harper and Row: 1959), 26.

agreed about its overall effect. One reviewer hailed it as “a remarkable integration of evolutionary data with religious principles,” while another regarded it as “more of a ‘hit’ than it deserves” and evidence that some religious people will go to any length to assure themselves that science had not banished God.⁴⁸ Regardless of criticism, with his scientific and theological credentials, Teilhard could not be easily ignored. For many, as George Carey noted in 1977 as Vicar of St. Nicholas’ Parish Church in Durham, England, the significance of his work was the prominence it gave to the unity of the natural order and to the possibility of seeing it from a theistic point of view.⁴⁹

At the heart of Teilhard’s thought was the idea that evolution was the purposeful process by which all of reality was moving toward its final goal, a point he termed the Omega.⁵⁰ The central evolutionary event was the arrival of humanity, which occurred when self-consciousness and self-reflection became possible. As such, human consciousness and experience formed the basis for understanding the world. He summarized his work as “an attempt *to see* and *to make others see* what happens to man . . . when he is placed fairly and squarely within the framework of phenomenon and appearance.”⁵¹ He continued: “Man, the centre of perspective, is at the same time the *centre of construction* of the universe. And by expedience no less than by necessity, all science must be referred back to him. If to see is really to become more, if vision is really fuller being, then we should look closely at man in order to increase our capacity to

⁴⁸G. Nicholas, F.S.C., “Review of *The Phenomenon of Man*” *American Midland Naturalist*, 63, no. 1 (January 1960): 256; Alan L. Stuart, “The Sciences and Deity” [a review of *The Phenomenon of Man*] *The British Journal for the Philosophy of Science* 12, no. 47 (November 1961): 244-245.

⁴⁹George Carey, *I Believe in Man* (Grand Rapids, Michigan: Wm. B. Eerdmans Publishing Company, 1977), 17.

⁵⁰Teilhard de Chardin, *Phenomenon*, 259.

⁵¹ Teilhard de Chardin, *Phenomenon*, 31

live.”⁵² In other words, humans, because they were the first self-conscious beings in the physical universe, had the fundamental perspective from which to understand the world.

In 1969, D. Gareth Jones, encouraged by the RSCF committee, published a review and critique of Teilhard’s views. Jones commended the seriousness with which the father took both the modern world and his Christian faith, but criticized his willingness to jettison the Bible as the basis for understanding the Christian message and rejected Teilhard’s idea that the starting point for understanding the world is human consciousness and experience.⁵³

Although man is of cardinal importance in the world as we know it, this does not justify making him the final criterion of the world, especially against the background of an impersonal, mechanistic, evolutionary philosophy. Man as the central pivot and irresistible focal point of the universe is not a fact of nature. This is a presupposition based upon belief in man and in his powers to dominate nature and himself.⁵⁴

In other words, humanity’s privileged place of knowledge was neither self-evident nor justified. Instead, Jones argued, humanity was only fully known by approaching him from the outside. The starting point for understanding was not an inward, mystical journey but was God and his revelation given through the Bible. To claim otherwise, Jones insisted, endangered not only one’s understanding of the world but also one’s understanding of God and Christ – and it was here that Jones found the real threat of Teilhard’s views:

Herein lies the danger of Teilhardism. Its emphasis on the incarnational and cosmic Christ, to the detriment of the redeeming Christ, can only lead to worship of a generalized nature-deity with consequent neglect of the transcendent triune

⁵² Teilhard de Chardin, *Phenomenon*, 33.

⁵³ D. Gareth Jones, *Teilhard de Chardin: an analysis and assessment* (Downers Grove, Illinois: Intervarsity Press, 1969), 64.

⁵⁴ Jones, *Teilhard de Chardin*, 67.

God revealed in the Scriptures. . . . In gaining the cosmic Christ Teilhard lost the Christ of the Scriptures. Having based his world-view on man and the world, this was inevitable.⁵⁵

Thus, in Jones's view Teilhard's willingness to abandon Scripture as the starting point for addressing questions about God and creation caused him to abandon the fundamental aspects of Christianity. This move produced unstable conclusions about God, humanity, and the world.⁵⁶ Science was cautioned against naturalism, but the Bible was deprived of its rightful principal place. *Phenomenon* was little more than thinly veiled modernism. It accepted too much from science and too little from the Bible. Jones's critique of Teilhard de Chardin's work was echoed by numerous members of the RSCF over the following years.

Confronting Creationism

The resurgence of creationism in America in the last third of the twentieth century had noteworthy effects among some conservative evangelicals in the UK. Although the movement never achieved the cultural support in Britain that it did in America, the UK experienced the full variety of creationist ideas.⁵⁷ As noted in chapter four, the RSCF received some amount of conservative resistance when its acceptance of evolution became known. Antievolution was prevalent enough in the UK that the IVF reminded

⁵⁵Jones, *Teilhard de Chardin*, 65.

⁵⁶Jones, *Teilhard de Chardin*, 64-71.

⁵⁷David Knight, "The Context of Creationism in Darwin's England" and Simon Locke, "Creationist Discourse and the Management of Political-legal Argumentation: Comparing Britain and the USA" in *The Cultures of Creationism: Anti-Evolutionism in English-Speaking Countries*, eds. Simon Coleman and Leslie Carlin (Aldershot, England: Ashgate Publishing Limited, 2004), chapters 1 and 2; Eileen Barker, "In The Beginning: The Battle of Creation Science Against Evolutionism," in *On the Margins of Science: The Social Construction of Rejected Knowledge*, ed. Roy Wallis (Keele: University of Keele, 1979, printed by J. H. Brooks, Ltd.), 188-189.

RSCF leaders to allow those who opposed evolution to be heard.⁵⁸ After 1965 resistance became more prominent. In 1973, Henry Morris, of the Creation Research Society, inspired Edgar C. Powell, a Reformed Baptist secondary school geography and geology teacher, to organize a British antievolutionary group called the Newton Scientific Association.⁵⁹ The ephemeral NSA affirmed the statement of faith of the Evangelical Alliance and like the CRS in America sought to undermine evolutionary theory with scientific data rather than overt references to the Bible. In 1977, the Biblical Creation Society was formed. It was similarly inspired by the CRS as well as by the prominent evangelical leaders Francis Schaeffer and D. Martyn Lloyd-Jones. Following the publications of *Genesis in Space and Time* (1972) and *No Final Conflict* (1975), Schaeffer's antievolutionary views were already well established.⁶⁰ Lloyd-Jones's views demonstrate that although the UK did not experience the antievolution movement that swept the US, prominent British evangelicals were not unwilling to denounce evolution. In lectures given at the International Fellowship of Evangelical Students conference in Schloss Mittersill, Austria, in 1971, Lloyd-Jones declared all of Genesis 1-3 to be history, affirmed the historicity of the fall to be theologically necessary, and chastised those willing to alter interpretations of Scripture in light of science:

Because the Spirit has borne witness within us to the truth of the Scripture, we do believe whatever is asserted in the Scripture about creation, about the whole cosmos, is true because God has said it, and though Scripture may appear to conflict with certain discoveries of science at the present time, we exhort people to be patient, assuring them that ultimately the scientists will discover that they

⁵⁸Oliver R. Barclay to author, October 1, 2008.

⁵⁹ASA Newsletter, Vol 16, no. 1, Feb 1974.

⁶⁰Barry Hankins, *Francis Schaeffer and the Shaping of Evangelical America* (Grand Rapids, MI and Cambridge: William B. Eerdmans Publishing Co., 2008), 149-152.

have been in error at some point or other, and will eventually come to see that the statements of Scripture are true.⁶¹

Although Lloyd-Jones's critique of evolution was notably less vitriolic than that of his American counterparts, the title of his speech, "Creation, Not Evolution," left little ambiguity about his views. The Biblical Creation Society was founded by the Scottish minister Nigel M. de S. Cameron and led by Andrews, the enduring head of the department of materials at Queen Mary College, University of London, as its president and David C. Watts, a senior lecturer in bio-materials science at the University of Manchester. As the name implies, the group did not attempt to disassociate its antievolutionism from the Bible. Neither were its members staunch flood geologists.⁶² Both Andrews and Watts were members of the RSCF. In 1980, the half-century old Evolution Protest Movement became the Creation Science Movement and shortly thereafter officially declared itself in support of flood geology.⁶³ Thus the seventies saw a notable spike in British antievolution activities, but perhaps the clearest signal of the growing popularity of creationism within the UK was its increasing prevalence within the RSCF and the attention it earned from RSCF leaders. In March 1980, Robert C. J. Carling, a later RSCF committee member, sent a letter to the ASA reporting the growth and momentum of antievolutionism in the UK. Clashes between creationism and evolution, he informed, were now occurring on "both sides of the Atlantic."⁶⁴

⁶¹D. M. Lloyd-Jones, "Creation, not Evolution," in *What is an Evangelical?* (Edinburgh: Banner of Truth Trust, 1992), 78.

⁶²Numbers, *Creationists*, 357-358.

⁶³Ronald L. Numbers, *The Creationists: From Scientific Creationism to Intelligent Design, Expanded Edition* (Cambridge, Massachusetts and London: Harvard University Press, 2006), 355-362; Eileen Barker, "In the Beginning," 187-188.

⁶⁴Robert C. J. Carling to Bill [Sisterson], [March 1980], ASA Papers, Box 17.

The first clear sign of antievolutionary resurgence within the RSCF came in 1970. In June of this year the RSCF section of the *Christian Graduate* published two articles that argued “a case against evolution and are critical of ‘complementarity.’”⁶⁵ The articles, entitled “Evolution v Creation – Why Does the Conflict Persist?” were written by Arthur Jones, a research zoologist at the University of Birmingham who claimed to suffer from the anti-creationism of British universities later in his career.⁶⁶ Jones was one of the most prominent creationists within the RSCF and brought what he considered undeniable scientific and biblical critiques of the theory of evolution from a conservative evangelical point of view. Somewhat reminiscent of the Packer ordeal, Jones argued that biblical interpretation must derive solely from biblical exegesis regardless of scientific knowledge: “If a scientific theory does contradict Genesis we must reject that theory and seek to formulate an alternative which is consistent with both the relevant scientific data *and* the scriptural framework.”⁶⁷ Unlike Packer, Jones’s critiques included a logic and motivation drawn from the writings of prominent American creationists. Addressing explicitly the work of figures including Donald MacKay, Douglas Spanner, and Malcolm Jeeves (and views of Old Testament scholars including F. Derek Kidner and R. K. Harrison), Jones applied what he termed a “common sense” exegetical method and arguments from the Creation Research Society in order to show that the Bible’s infallibility required Christians to resist evolution: “A lot of ink has flowed in the attempt to reconcile evolution and biblical Christianity, but this attempt is quite futile. *There can*

⁶⁵ A. Jones, “Evolution v Creation – Why does the Conflict Persist, part two: Biological origins and Scripture” *Christian Graduate* 23, no. 3 (September 1970): 58.

⁶⁶Numbers, *Creationists*, 300.

⁶⁷A. Jones, “Evolution v Creation,” 89.

be no synthesis.”⁶⁸ That all people were descended from the first pair, that death came through humanity (not humanity through death), and that living things were created each after their own kind were all part of the clear biblical testimony, he insisted, and as such creation and evolution were incompatible.

Antievolutionary views were also expressed by a Cambridge RSCF group at the 1974 annual conference. Combining literary, exegetical, and historical analysis, the group argued that evolution contradicted clear biblical testimony and that attempts to conflate evolution and creation required one to accept errors in the “intention and opinion of Scripture.” They argued further that natural selection undermined “the theological accuracy of Genesis 1 which asserts that the creation was originally perfectly good, and subject to corruption only after the fall of Adam and Eve.”⁶⁹ Antievolutionary views were also held by some members of a Bristol group, who argued that “the Biblical account in the early chapters of Genesis is as exact and literal as any other part of Scripture. Present scientific evidence of the evolutionary character of the earth and living things is misleading or wrong.”⁷⁰

Although such views remained a minority within the RSCF, the group’s leaders never attempted to silence dissenting voices. It is noteworthy that Arthur Jones’s 1970 articles were published within the RSCF section of the *Christian Graduate* in order to promote discussion about evolution. Likewise, efforts were made to expound the

⁶⁸A. Jones, “Evolution v Creation,” 89.

⁶⁹Cambridge RSCF Group, “Evolution: The Biblical Data” (paper presented at the RSCF annual conference, Bedford College, Regent’s Park, London, September 28, 1974), 7.

⁷⁰Bristol Group RSCF Group, “God and Evolution” (paper presented at the RSCF annual conference, Bedford College, Regent’s Park, London, September 28, 1974), 21.

creationist views held by those within the Bristol RSCF group in 1974.⁷¹ Much of this attitude of generosity seems to have come from Oliver Barclay, who, although sharply critical of antievolutionary ideas, welcomed disagreement between otherwise likeminded Christians. When the Cambridge group offered its antievolutionary paper to the 1974 annual meeting, Barclay disagreed with nearly every argument used to undermine the Bible's compatibility with evolution.⁷² Yet when he produced one of his many lists of recommended books on the topic, he included numerous antievolutionary works, including Whitcomb and Morris's *Genesis Flood*, E. H. Andrew's *From Nothing to Nature*, and Nigel M. de S. Cameron's *Evolution and the Authority of the Bible*.⁷³ Barclay unquestionably rejected creationism, but he also rejected the temptation to censor reasonable Christian voices from the conversation. This characteristic seems to have stemmed in part from an innate desire for open dialogue about new ideas. His concern for stagnation and his progressive vision were balanced by his understanding that evangelicalism included a great variety of people who were unequally prepared for the theological challenges progress implied. His generous spirit stemmed also from his role as General Secretary of the IVF. Though he encouraged lively debate over key topics, he exercised considerable caution when addressing potentially controversial issues. He frequently wrote under pseudonyms (e.g., A. N. Triton, as he did for his 1969 review of *Genesis Flood*) in order to keep his own views from coming across as official statements

⁷¹A Bristol RSCF group, "God and Evolution" (paper presented at the RSCF annual conference, Bedford College, Regent's Park, London, September 28, 1974).

⁷²Marginalia of Oliver R. Barclay's copy of "Evolution: The Biblical Data" by a Cambridge Group, (paper presented at the RSCF annual conference, Location, September 28, 1974), original in possession of author.

⁷³List provided to author in a letter from Bennet McInnes to author August 12, 2008.

of the IVF. The rest of the RSCF leaders followed Barclay's lead and at times found themselves defending those with whom they strongly disagreed.

In 1976, David C. C. Watson (1920-2004), a religious education teacher and member of the Evolution Protest Movement, was dismissed from his teaching post at a state-run school for, according to some accounts, refusing to teach Genesis as myth.⁷⁴ The RSCF committee took great interest in the case, keeping up with the events as they unfolded and with the outcome of Watson's appeal before the Industrial Tribunal the following year.⁷⁵ The claims that Watson was fired for his conservative religious views prompted great concern. Fearing that the events represented a move towards censorship and an anti-evangelical bias in secondary education, the committee published a short article in a number of journals that argued for the legitimate place of conservative views of the Bible in religious education courses. Although the authors (Barclay and Berry) disagreed with Watson's ideas, they described the actions against him as "a kind of theological dictatorship by educational authorities that could become a basis for very wide discrimination."⁷⁶ There was little justification, they argued, for making liberalism the benchmark for acceptable religious education.

Watson eventually moved to the USA in order to direct the Midwest Institute of Creation Research before returning in retirement to Cambridge.⁷⁷ His publications included *The Great Brain Robbery* (1975), *Myths and Miracles* (1976), and *Fact or*

⁷⁴See Numbers, *Creationists*, 300-01.

⁷⁵RSCF committee minutes, May 9, 1977; RSCF committee minutes, Oct 24, 1977.

⁷⁶Oliver R. Barclay, "The 'Teaching of Evolution' Controversy" *The Christian Graduate* 30, no. 3 (September 1977): 94-95.

⁷⁷"David C. C. Watson," in *Creation: the Journal of the Creation Science Movement*, Vol. 14, No. 3 (March, 2004), www.csm.org.uk/journals, (accessed on March 21, 2008).

Fantasy (1980). He considered himself deeply indebted to the creationist teachings of Morris and Whitcomb. “I believe,” he wrote in 1975, “that one day the whole Church will recognise the debt we owe to them for their immense industry, zeal and wisdom in the cause of Christ.”⁷⁸

Thus, as antievolution voices grew louder in the UK, RSCF leaders made sure to include them in science and faith dialogue. However, in doing so the RSCF risked the possibility of losing ground in its goal of removing the perception of conflict between science and Christianity. As a result, leaders were forced to walk a fine line between allowing dissenting voices to speak and arguing a clear case against those same voices. In May 1970, for example, the committee asked D. Gareth Jones and Douglas C. Spanner to respond to Arthur Jones’s critique of evolution published in the *Christian Graduate*.⁷⁹ Dissenting voices were welcome, but they could not go unchallenged.

The chief issue that prevented creationists from accepting modern biological views, as the RSCF leaders saw it, was misguided views of the nature of the Bible. In June 1966, MacKay published an article in the *Christian Graduate* reminding evangelicals to remain open-minded when interpreting Scripture. Contrary to popular opinions, he argued, evangelicals were rarely guilty of the kind of closed-mindedness that led some to follow blindly their preconceived ideas of right and wrong; they were more often guilty of disregarding knowledge that originated outside of the Bible and thus ignoring its usefulness for interpretation. Whether coming from discoveries in science or

⁷⁸Watson, “Acknowledgements” of *The Great Brain Robbery* (Worthing: Henry E. Walter, Ltd., 1975), no page number.

⁷⁹RSCF committee minutes, 15 May 1970, RSCF Papers.

higher criticism, he argued, all truth is God's and must be taken into account when interpreting his word.⁸⁰

MacKay's views were quickly challenged. The following edition of the journal included a response that compared his description of open-mindedness to "the great evil of the Fall: a complete rejection of God's authority."⁸¹ The respondent described the Bible as the infallible, inerrant gift of God by which all other claims of truth are measured. MacKay's assertion that the Bible was authoritative in matters of doctrine, conduct, and righteousness was, the author insisted, too limiting: "The Bible is authoritative on everything of which it speaks, and it speaks of everything."⁸² To believe otherwise was less than Christian. "Neither the Bible, nor the world," he wrote, "is to be viewed with an 'open mind.'"⁸³ Such a response highlighted what the RSCF saw as the fundamental questions of biblical interpretation. What is the nature of the Bible? What is its purpose? How should one move toward interpretation in the light of modern scientific knowledge? Since the Packer ordeal of the late 1950s, the RSCF leaders were keenly aware of the need for clarity in each of these areas, especially their understanding of the role of extra-biblical knowledge. Their responses never varied significantly.

In October 1971, the role of extra-biblical data in biblical interpretation took center stage at a "Science and the Bible" conference cosponsored by the Christian

⁸⁰Donald M. MacKay, "The Open Mind – An Evangelical approach to the Bible, *Christian Graduate* 19, no. 2 (June 1966): 1-4.

⁸¹Geoff Thomas, "Correspondence: Can a Christian Be Open Minded? An Answer to D. M. MacKay" *Christian Graduate* 19, no. 3 (September 1966): 24-25.

⁸²Geoff Thomas, "Correspondence": 25.

⁸³Geoff Thomas, "Correspondence": 25.

Education Fellowship, another IVF graduate group.⁸⁴ In the opening paper, “The Interpretation of the Bible and extra biblical knowledge,” a London RSCF group argued that although one might successfully “approach the Bible as a child” (a theme not uncommon in some evangelical literature) and get at the central message of salvation, one could not assume such an antirational attitude and hope to arrive successfully at the fullness of the Bible’s teachings. Readers had to address the Bible as an ancient document concerned with particular problems at a particular time and place. Although the lessons for faith were timeless, the authors argued, they were also “embodied,” requiring one to seek the meaning of the passages in light of their historical and cultural context. This did not mean arbitrarily discarding passages because they defied modern assumptions. It did mean remembering that the Bible could not answer many of the distinctly modern questions often brought to it.⁸⁵ To those who ignored biblical views of the natural world as primitive, the RSCF defended the whole Bible as the unique and inspired revelation of God. To those who unduly exalted the Bible as exhaustively authoritative in all areas, the RSCF reminded that the Bible was not the only source of revelation and truth.

As the decade progressed, the problem became more acute. In October 1975, there was considerable discussion among the RSCF leaders concerning the resurgence of creationism and the need for a critical response and further education of the principles of biblical interpretation.⁸⁶ By the early 1980s, the RSCF was taking steps to expound more

⁸⁴RSCF committee minutes, 30 October 1970.

⁸⁵London RSCF Group, “The Interpretation of the Bible in the light of Extra-Biblical Knowledge” (paper presented at the annual conference of the Research Scientists’ Christian Fellowship, Bedford College, London, September 25, 1971) 1-8.

⁸⁶RSCF committee minutes, 20 October 1975.

explicitly its views in light of creationists' challenges. Key events in these efforts were a proposed meeting with the most significant creationist organization in the UK, the Biblical Creation Society, and the publication of monographs to disseminate its views of creation and science.

On April 30, 1983, select members of the RSCF and the BCS met at St. Paul's Church, Robert Adam Street, London to discuss their differing views about evolution and Christianity. The event, which was almost two years in the planning, was intended "to help both sides to be more critical of what they say, and to ensure that from both standpoints the arguments put forward are honouring to God in their biblical base, soundness of reasoning and respect for such evidence as God has been pleased to give us. We are all concerned lest good and biblical positions are spoiled by bad arguments."⁸⁷ In order to help guide the discussion, papers, largely in the form of questions, were to be prepared by both sides and circulated among the participants ahead of the meeting. Replies were to be similarly offered, if possible. Although few papers were produced, enough were distributed to provide a starting place for discussion.

O. Raymond Johnston (1927-1985), Director of the Nationwide Festival of Light (a grassroots organization that protested changes in British sexual and social morality), served as the meeting's chair.⁸⁸ In his preamble he identified eight central issues contained in the precirculated papers: the age of the earth, the six days of creation, the fixity of species, the origin of life, questions regarding natural selection, the distinction between miracles and providence, death and 'the curse,' and the order of creation. Soon

⁸⁷R. C. J. Carling, "Report of discussion Meeting between RSCF and BCS" (produced May 30, 1983; provided to author by R. C. J. Carling).

⁸⁸David Holloway, *A Call for Christian Thinking and Action: The Life of Raymond Johnston* (Newcastle upon Tyne: The Christian Institute, 2004), 5-6.

after the opening remarks, however, the morning conversation floundered in discussion over what Barclay described as “the biblical a priori’s” that should guide evangelical views of the issues – the limitations of science, the completion of God’s work, and the goodness of creation. According to the BCS, science was limited not only by its intrinsic inadequacies but also by revelation, creation was completed before God rested from his work on the seventh day, and the original ‘goodness’ of creation meant that death and disaster were products of human sin. For the RSCF, there was qualified agreement with the first point, but significant debate about the necessity of the second and third. RSCF members asked whether the BCS’s interpretation of goodness was based on biblical testimony or extra-biblical ideologies. Since even the creationists recognized so-called micro-evolution, Barclay asked, in what sense was creation complete?⁸⁹

The question of miracles dominated the afternoon discussion. Based largely on the arguments of Andrews, the BCS insisted that since miracles were events that could not be explained by natural processes, and since the creation narrative was a series of miracles, the biblical view of creation was of events that were without natural explanations. Evolution was thus unbiblical. The RSCF clearly rejected this line of reasoning and called upon three decades’ worth of arguments to expound their views. Michael Poole noted the incoherency of contrasting divine action and natural processes. Barclay agreed, arguing that the BCS view of miracles was too narrow, ignoring a host of events the biblical writers described as ‘signs and wonders.’⁹⁰

⁸⁹R. C. J. Carling, “Report of discussion Meeting between RSCF and BCS” (produced May 30, 1983; provided to author by R. C. J. Carling).

⁹⁰R. C. J. Carling, “Report of discussion Meeting between RSCF and BCS” (produced May 30, 1983; provided to author by R. C. J. Carling).

The RSCF was disappointed by the meeting's failure to address what it saw as the most important questions, later reporting that "issues were so confused" that there would be little value in making the proceedings public.⁹¹ Of chief disappointment was the surprising lack of attention to science. Discussions of the age of the earth, speciation, and natural selection suffered from the protracted examination of theology and exegesis. Barclay's frustration stemmed further from the BCS members' apparent success in swaying Johnston, an Oxford graduate, to their side.⁹² The RSCF attempted to arrange a second meeting to continue the dialogue, but plans failed when the BCS withdrew from the talks.⁹³ Still, the meeting served to highlight some key similarities and differences between the two groups. Both groups insisted upon creation *ex nihilo*, a clear distinction between creator and creation, and a denial of the deistic view of the world. They also agreed that the sin of Adam and Eve was a historical event that produced both physical and spiritual effects. The groups differed in their understanding of the extent to which the world was completed at the end of the creation narrative, in their understanding of miracles, and in their view of the physical effects of the fall.⁹⁴

The RSCF hoped that the meeting might lead to a joint publication on the crucial scientific issues in which each side presented its views, but with its failure, the RSCF decided to publish its views alone. The most direct response came from RSCF Chairman, R. J. (Sam) Berry.

⁹¹ Oliver R. Barclay to BCS, August 9, 1983 (provided to author by R. C. J. Carling); RSCF committee minutes, July 5, 1983.

⁹² Barclay to author, September 2008.

⁹³ RSCF committee minutes, October, 22, 1984.

⁹⁴ R. C. J. Carling, "Report of discussion Meeting between RSCF and BCS" (produced May 30, 1983; provided to author by R. C. J. Carling).

In 1975, Berry published a defense of evolution provocatively entitled *Adam and the Ape* in which he sought to clarify the issues in the evolution debate. Following the BCS meeting, Berry revised the text under the title *God and Evolution* and published it as a direct response to the increasing spread of creationist ideas in the UK. Motivated by a pastoral concern for those who regarded creationist readings of Genesis as a stumbling block to faith—a fear that has been subsequently substantiated by educational researchers⁹⁵—Berry combined historical analysis, biblical exegesis, and scientific reasoning to bring a brief but penetrating critique of creationist arguments and logic.⁹⁶ In Chapter 6, “‘Creationism’ and Science,” Berry addressed the most common arguments creationists brought against the theory of evolution—including gaps in the fossil record, accused inadequacies in dating techniques, and the implications of entropy and the Second Law of Thermodynamics—and argued that in each case creationists misrepresented or ignored scientific evidence. He concluded,

The honest truth is that wherever one reviews the anti-evolutionary evidence produced by ‘creationists’ or examines their criticisms of orthodox evolutionary theory, one finds gaps and errors. The ‘creationist’ case does not stand up. Even worse, it is easy to find examples where arguments have been used dishonestly or annotations distorted.⁹⁷

⁹⁵Peter Fulljames, Harry M. Gibson, and Leslie J. Francis, “Creationism, Scientism, Christianity and Science: a study in adolescent attitudes” *British Education Research Journal* 17, no. 2 (1991): 171-190. The authors found a negative correlation between the attitudes of Christianity and an interest in science, if Christianity was thought to require creationism and science was thought to require scientism.

⁹⁶R. J. Berry, *God and Evolution* (London, Sydney, Auckland, Toronto: Hodder and Stoughton, 1988), 9.

⁹⁷R. J. Berry, *God and Evolution* (London, Sydney, Auckland, Toronto: Hodder and Stoughton, 1988), 125.

Berry went on to offer a historical evaluation of creationism, arguing that anti-evolutionism was a form of anti-intellectualism that fostered “a schizophrenic approach to the empirical world.”⁹⁸

Still, despite their antipathy for creationism, the RSCF leadership would not allow any single issue to dominate its work. The use of individual publications to deal with relevant issues and the private, though failed, meetings with the BCS meant that the RSCF avoided turning its full public attention to the questions surrounding evolution. Though such questions were frequently addressed at conferences—the RSCF was after all a scientific organization and evolution had become a fundamental theory affecting nearly all the sciences—between 1965 and 1985 only one annual conference was dedicated to the subject. Evolution was taken up at the joint conference in 1985, but it was hardly a key concern. In MacKay’s closing address he listed what he perceived as the primary issues facing Christians in science. The audience listened as he identified challenges brought by advances in neuroscience and artificial intelligence as well as the threats from nuclear war, the population explosion, and pollution. Evolution was conspicuously ignored. He merely proclaimed the need to avoid dogmatic assertions about views that were inconclusive based on the data, biblical and scientific, that was available.⁹⁹

Thus, RSCF dealings with evolution reveal key characteristics of the group. First, the leadership and majority of members favored the modern scientific understanding of

⁹⁸R. J. Berry, *God and Evolution* (London, Sydney, Auckland, Toronto: Hodder and Stoughton, 1988), 148.

⁹⁹D. M. MacKay, “Oxford 1985 ASA/RSCF Conference: Summing Up” *Science and Faith* 5 (November, 1985): 5-17.

evolution. Second, the RSCF leadership was determined to defend a Christian understanding and acceptance of Darwinian evolution against Creationism and to defend the primacy of Scripture against more liberal theological trends. For those who might misconstrue the group as drifting toward theological modernism, the critiques of Teilhard de Chardin allowed the RSCF to affirm its fidelity to the Bible and its willingness to subordinate both science and philosophy to biblical doctrines when it comes to fundamental convictions about God and the world. Third, they were equally determined to avoid being defined by any single issue, including evolution. The leaders were in agreement about their views, but all views were welcome in the group. The vision for the RSCF was larger than any single issue. They were united not by their view of evolution but by their common faith in and appreciation for the scientific enterprise overall. And it was here that they put their greatest effort. Fourth, despite their convictions, they remained willing to give a hearing to antievolutionists.

Apologetics for Science

The rise of creationism was seen by the RSCF as more than a condemnation of theistic evolution. Its account of modern scientific methodologies symbolized the conflict between science and Christianity that the RSCF had struggled to overcome. In his contribution to the 1985 Conference on Christian Faith and Science, V. Paul Marston, of the science faculty at Lancashire Polytechnic, examined the relationship between creationism and the scientific community and concluded:

No one need doubt the sincerity or spirituality of modern Creationists. Their system, however, whether it is in point of fact right or wrong, challenges not merely a significant 'package' of 'mainstream' scientific paradigms which have historical roots over many decades of study, but the actual ideology of Baconian science as it has developed in our culture. For this reason Creationism must be

taken as . . . a radical critique of science as an institution, and of the scientific community in its historical dimension.¹⁰⁰

Creationism was, in essence, a critique of the modern scientific enterprise as a whole. This kind of accusation had become a key issue in RSCF thought over the previous decades.

By 1960, the RSCF had become fully aware of the need for defenders of science within evangelical circles. Spurred largely by the Packer ordeal of the late 1950s, the fellowship sought to bolster the church's appreciation of science. Over the course of the next decade, larger cultural events created a greater need for such efforts. In 1970, Oliver Barclay argued that the perceived conflict between science and religion continued to rob science of its proper place in Christian thought, and he called on Christians to "speak up in favour of science and technology."¹⁰¹ There had been true conflict arising from "various forms of idolatry of science," he noted, but so too had there been unjustified pride and dogmatism on the part of some theologians.¹⁰²

In 1968, the distinguished chemist and university administrator Frederick Dainton, Fellow of the Royal Society, published an "Enquiry into the Flow of Candidates in Science and Technology into Higher Education" in which he examined a trend of decreasing numbers of undergraduate students pursuing advanced degrees in the sciences.¹⁰³ The report identified numerous reasons for this so-called "swing from science." A shortage of science teachers and a decline in the overall quality of science

¹⁰⁰V. Paul Marston, "Creationism and the Scientific Community" (paper presented the RSCF and ASA Conference on Christian Faith and Science in Society, Oxford, July 26 to July 29, 1985).

¹⁰¹A. N. Triton, *Whose World?* 149.

¹⁰²*Ibid.*, 152.

¹⁰³Council for Scientific Policy, Cmnd 3541 (H.M.S.O. 1968).

instruction at the secondary level meant that fewer students were prepared for undergraduate courses. A growing perception that scientific disciplines were too difficult for average students and a lengthening in the time required to finish advanced degrees acted as a deterrent against potential undergraduates. And a growing popular reaction against various misuses of science caused some to rebuff the field as a whole.¹⁰⁴ In 1975, an article in the *Times Higher Educational Supplement* further linked the swing with the anti-structural, anti-hierarchical aspects of the counter-culture movement of the 1960s.¹⁰⁵ Although by 1960 pure science had become the most popular faculty position for men in Britain, these reports pointed to a dramatic and largely unforeseen decrease in the number of students pursuing scientific degrees.¹⁰⁶

By 1974, the swing had earned the attention of the RSCF committee, and in October of that year it agreed that the next annual conference should explicitly address the issue under the title “In Defence of Science.”¹⁰⁷ The ensuing conference explored various reasons why the Church ought to be concerned about the recent trends and why Christians should be involved in advanced scientific research. Several overarching themes ran through the RSCF’s arguments. First, various RSCF members argued that participating in science was necessary if the church was to obey the fullness of the biblical mandate. In the conference’s opening paper Michael Poole argued that the Christian responsibility to care for one’s neighbor implied a general concern for society

¹⁰⁴Note the protests that occurred at the 1970 BA meeting in Durham, “Bishop’s plea on religion and science,” in *The Times* (7 September 1970), 2.

¹⁰⁵Bernice Martin, “The Mining of the Ivory Tower,” *Times Higher Educational Supplement* April 25, 1975.

¹⁰⁶Halsey, “Further and Higher Education” 237.

¹⁰⁷RSCF Minutes, October 21, 1974.

that ought to compel the church to provide workers in areas upon which society had come to depend so strongly. Since science and technology were integral to modern life, Christians were required to help fulfill this social need. This concern was all the greater because scientific advances often involved questions of morality. “Many of the issues raised are complex,” Poole noted, “but the Christian should be one who encourages a thoughtful interchange of ideas, while stressing accountability rather than expediency.”¹⁰⁸

Other RSCF members pointed to the biblical mandate to subdue and have dominion over the earth and the implications this had for scientific research. As a Birmingham RSCF group noted, “Man is commanded to fill the earth and subdue it, and to have dominion over the fish of the sea, the birds of the air, and every living thing that moves upon the earth (Gen. 1:28): the command entails the acquisition of legitimate knowledge, and that acquisition entails Science and the scientific method.”¹⁰⁹ This line of thinking could be found as early as 1965, when Malcolm Jeeves noted that Christian faith engendered the conviction that the capacity for empirical investigation of the natural world was given in order to accomplish the biblical command. “On this view,” he wrote, “man in his scientific activity is engaged in actualizing this knowledge relation, which is potentially given by the creation, and therefore whether he recognizes it or not he is engaged in fulfilling his cultural charge.”¹¹⁰ Yet, this theme became prominent within RSCF literature only after 1970, when many within the RSCF began to affirm scientists as crucial members of the body of Christ, no less important than pastors and teachers. If

¹⁰⁸Michael Poole, “The Drift from Science” (paper presented at the RSCF annual conference, The Polytechnic of Central London, September 25, 1975), 7.

¹⁰⁹Birmingham RSCF Group, “Christian and General Reasons for Engaging in Pure or Applied Science Today” (paper presented at the RSCF annual conference, The Polytechnic of Central London, September 25, 1975), 27.

¹¹⁰Jeeves, *Scientific Enterprise*, 58.

the church was to accomplish the fullness of its cultural charge, science and technology were required. “It is essential . . .,” a Glasgow group wrote in 1970, “that within the Church there should be scientists who are willing to help the Church think through the problems raised by scientific research.”¹¹¹

A second theme was that Christians should be involved in science because of their overarching love for truth and the biblical value of the life of the mind. The goal of enhancing the intellectual life of British evangelicals was clear from the time Douglas Johnson founded the IVF during the interwar period. As the Reverend John R. W. Stott’s 1972 Presidential Address demonstrated, the next generation of leaders was no less committed to this aspect of faith. “Faith and thought belong together,” he proclaimed, “and believing is impossible without thinking.”¹¹² The RSCF was fully convinced of this principle. “Every part of us,” Poole noted in 1975, “is divinely created and a potential vehicle for God’s glory. It is a matter of extreme regret that there are still preachers who decry any form of intellectual activity.”¹¹³ The RSCF was further convinced that Christian participation in science was integral to fulfill this aspect of the Christian life. Curiosity about the natural world evinced both a love of truth and a commitment to the mind. As the Glasgow RSCF group noted in 1970, “it is right and appropriate that the Christian should be interested in the world which God has created, simply because it is

¹¹¹A Glasgow RSCF group, “Why is Science Worthwhile for the Christian? – Its Relationship to Christian Responsibilities, e.g. Evangelism” (paper presented at the RSCF annual conference, Bedford College, London, September 26, 1970), 27.

¹¹²John R. W. Stott, *Your Mind Matters* (Downers Grove, IL: InterVarsity Press, 1972), 37.

¹¹³Poole, “Drift from Science,” 8.

God's creation."¹¹⁴ A Birmingham group concurred. Humanity was expected to grow in knowledge of all types, and knowledge comes only by enquiry – “to enquire,” they wrote, “is human, to know Godlike.”¹¹⁵ Further, Christians had a responsibility to ensure through scientific investigation that science was on the right track. By doing so, Poole noted, Christians would be able to both “repudiate the exaggerated claims made for science and restore it to its rightful place as a subject ‘fit for a Sabbath’s Day.’”¹¹⁶

Third, but perhaps most important, was the way in which the RSCF associated scientific investigation with their theological heritage. It is difficult to overstate R. Hooykaas's influence on the members of the RSCF in this area. For historians of science, Hooykaas represents a historiographical school that emphasizes (or over emphasizes) the importance of the Christian context within which modern science developed.¹¹⁷ For the RSCF, Hooykaas offered a perspective from which to understand and celebrate its own participation in the scientific enterprise.¹¹⁸

Hooykaas was convinced that Christianity was not merely compatible with science; it was instrumental in propelling its advance. In his *Christian Faith and the Freedom of Science* (1957) he argued that “the inner freedom necessary to scientific work

¹¹⁴A Glasgow RSCF Group, “Why is Science Worthwhile for the Christian – Its Relationship to Christian Responsibilities, e.g. Evangelism,” (paper presented at the RSCF annual conference, Bedford College London, September 26, 1970), 1.

¹¹⁵A Birmingham RSCF Group, “Christian and General Reasons for Engaging in Pure or Applied Science Today” (paper presented at the RSCF annual conference, The Polytechnic of Central London, September 27, 1975), 27.

¹¹⁶Poole, “The Drift from Science,” 7.

¹¹⁷John Hedley Brooke, *Science and Religion: Some Historical Perspectives* (Cambridge and New York: Cambridge University Press, 1991), 350. Colin A. Russell is also listed among this group.

¹¹⁸For a passionate defense of Hooykaas work see, Donald M. MacKay, “Religion and the Rise of Modern Science: A Review Reviewed,” *JASA* 27 (September 1975): 141.

is fully *guaranteed* by a biblical religion.”¹¹⁹ This meant that “no realm of nature, not even her inmost secrets, was forbidden ground to human investigation.”¹²⁰ His *Religion and the Rise of Modern Science* (1972) expounded his conviction that Protestant theology, specifically Reformed theology, was essential for the intellectual mood that propelled the rapid advances in science during the sixteenth and seventeenth centuries.¹²¹

Hooykaas’s ideas about the relationship between Christianity and the advancement of science resonated strongly with RSCF leaders. Fellow historian of science and RSCF member Colin Russell echoed these themes, arguing that “only in the most limited sense had Biblical exegesis in the preceding centuries imposed a limit on science.”¹²² In defending the Christian’s scientific pursuits, Barclay relied on Hooykaas to claim that the field itself was “the product of a Christianized society.”¹²³ “Science as a matter of history, grew up in Christian soil,” he proclaimed.¹²⁴ At the 1970 annual conference an Oxford RSCF group submitted a paper entitled “The Effect of Christian Belief on Scientific Activity,” which followed Hooykaas’s argument further. It implied that science was fundamental to the Protestant heritage because of its past role in expunging ‘superstitious’ views of the natural world: “The empirical spirit of the Protestant scientists and their fear of deviating from truth by vain speculation was central

¹¹⁹Hooykaas, *Christian Faith and the Freedom of Science*, 9.

¹²⁰Hooykaas, *Christian Faith and the Freedom of Science*, 15.

¹²¹See also Hooykaas, *Principle of Uniformity in Geology, Biology and Theology* (1963).

¹²²Colin A. Russell, “Historical Introduction: The Limits of Science: (paper presented at the RSCF annual conference, Central London YWCA, September 29, 1979), 4; see also, Russell, *Cross-currents: Interactions between Science and Faith* (Grand Rapids, MI: Eerdmans Publishing Co., 1985).

¹²³Triton, *Whose World?*, 147.

¹²⁴Triton, *Whose World?*, 148.

to the progress of science. In their anti-rationalism, the spirit of the Reformation and the spirit of experimental science are in close affinity.”¹²⁵

Hooykaas’s work did more, however, than merely establish a pattern for Christian involvement in science. It also justified the Christian commitment to science as part of the Church’s God-given responsibility. Combining the Protestant idea of the priesthood of all believers and the Copernican view of God’s two books, he argued that the church had as much responsibility for studying the natural world as for studying Scripture.

These ideas “implied the right, and even the duty, for those who had the talents, to study Scripture without depending on the authority of tradition and hierarchy, together with the right and the duty to study the other book written by God, the book of nature.”¹²⁶

Unsurpassed in Hooykaas’ view was the attitude of John Calvin. Calvin, Hooykaas argued, regarded those who ignored nature when studying God the same as those who ignored God when studying nature: “[Calvin] sharply reprov[ed] those ‘phantastic’ opponents of science, who said that this study only made men proud, and who did not recognize that it led to ‘knowledge of God and the conduct of life.’”¹²⁷ For Hooykaas, this Protestant appreciation of the natural world provided the necessary mindset for the scientific advances of the following century. This was especially true of the English

¹²⁵An Oxford RSCF Group “The Effect of Christian Belief on Scientific Activity” (paper presented at the RSCF annual meeting, Bedford College, September 26, 1970); “What Difference Does It Make to a Scientist if He is a Christian?,” 3. For a recent discussion of the Protestant appreciation for naturalistic scientific methodologies see Ronald L. Numbers, “Science without God: Natural Laws and Christian Beliefs,” *When Science and Christianity Meet*, eds. David C. Lindberg and Ronald L. Numbers (Chicago and London: University of Chicago Press, 2003), 268-69.

¹²⁶R. Hooykaas, *Religion and the Rise of Modern Science* (Edinburgh: Scottish Academic Press, 1972; reprint, Vancouver, Canada: Regent College Publishing), 109.

¹²⁷R. Hooykaas, *Religion and the Rise of Modern Science*, 106.

Puritans, whom he credited as being the main support for science in the first half of the seventeenth century and the main catalyst for its future development.¹²⁸

Regardless of their accuracy, such arguments provided the RSCF with a profound self-understanding that helped unify their work and faith. A few rejected this thinking. Arthur Jones, for example, claimed that this elevation of the revelatory value of the natural world was based more on humanistic philosophy than biblical testimony.¹²⁹ But the majority of RSCF members supported Hooykaas's conclusions. At the 1975 annual conference a London RSCF group explicitly followed his views from pre-Christian culture, through the Greeks and Islamic contributions, and ended by glorifying Protestant contributions. "Reformed thought," they concluded, "with its emphasis on the 'glory of God' encouraged the study of nature the more to glorify God, and this was extended through the concept of the priesthood of all believers to encourage everyone—not just the learned—to fulfill this duty to the limit of his ability."¹³⁰ A Birmingham group further noted that seeing "scientific and technological activity in such a light should induce both a considered respect for scientific knowledge and a desirable humility and responsibility in the scientist."¹³¹ As a result, Christians could study science and practice technology "without shame and even without apology."¹³²

¹²⁸Hooykaas, *Religion and the Rise*, 148, quoting *Principle of Uniformity*, 211, 225.

¹²⁹Arthur Jones, "Evolution v Creation: part 2," 88.

¹³⁰A London RSCF Group "The Biblical Mandate to have Dominion over the Created Order," (paper presented at the RSCF annual conference, The Polytechnic of Central London, September 27, 1975), 18.

¹³¹A Birmingham RSCF Group, "Christian and General Reasons for Engaging in Pure or Applied Science Today" by a Birmingham Group, (paper presented at the RSCF annual conference, The Polytechnic of Central London, September 27, 1975), 31.

¹³²Birmingham RSCF Group, "Christian and General Reasons," 31.

This line of reasoning also confirmed the value of science for Christian thought. Just as science benefited from Christian involvement, the church benefited from having professional scientists within its fold. As a Birmingham RSCF group argued in 1975, “Biblical Christianity requires a two-way exchange between scientific ideas and practice and Christian faith and action.”¹³³ In 1981, an Oxford RSCF group further argued that by bringing greater knowledge of the natural world, scientific activity advanced theological views. Since God revealed himself through his Son, through the Bible, and through the natural world, greater knowledge in any one area should bring greater clarity to the others: “Christians should not pursue scientific research only because it increases our understanding of the scientific viewpoint of truth, but also because some scientific [discoveries] increase our theological understanding.”¹³⁴ They continued, “Christians should welcome scientific progress because the correct fitting together of the scientific and theological viewpoints of truth may lead to a deeper theological understanding.”¹³⁵ Scientific knowledge, therefore, could legitimately contribute to the church’s theological views without moving into modernism.

Thus, in their defense of Christian involvement in science the RSCF found that the benefits flowed in multiple directions—it was good for science, good for society, and good for the church. But the benefits were only possible if science and Christianity retained an appropriate humility and willingness to be corrected: “just as scientists need to be ready to admit that some of their theories may be wrong . . . so Christians must

¹³³A Birmingham Group, “Christian and General Reasons for Engaging in Pure or Applied Science Today,” (paper presented at the RSCF annual conference, The Polytechnic of Central London, September 27, 1975), 23.

¹³⁴An Oxford Group, “Progress in Science and Technology,” (paper presented at the RSCF annual conference, Bedford College, September 26, 1981), 4.

¹³⁵*Ibid.*, 11.

realise that some traditional Biblical interpretations may be wrong.”¹³⁶ If the church was to be successful in dealing with the social and environmental consequences of modern technology, in understanding contemporary science, and in expressing Christian doctrines to the modern world, the church must engage in science and its applications.¹³⁷ This line of reasoning did not imply that science should determine theological views; the RSCF as a whole was clear that there was to be “no mere gloss of modernity on our teaching, our evangelism, or our apologetics.”¹³⁸ It did imply that scientific knowledge was increasingly fundamental to the apologetic task. The needs of the world demanded that the church be equipped with modern scientific knowledge.

Conclusion

The two decades following the international meeting in Oxford brought what must have seemed for the RSCF a remarkable combination of events. Prominent church leaders espoused various forms of radicalism that threatened central teachings of the gospel, the scientific profession experienced a cultural backlash unprecedented since the turn of the century, and a growing conservatism increasingly pestered RSCF leaders with American-style creationism. Liberalism compelled the RSCF to defend historically orthodox theology while challenging traditional Christian views of the natural world. The swing from science produced a remarkable reaction as the RSCF shifted directions in its apologetic efforts, unequivocally proclaiming the importance and value of science and technology, defending the scientific enterprise as a powerful tool for glorifying God, and

¹³⁶Ibid., 4.

¹³⁷“Christian and General Reasons for Engaging in Pure or Applied Science Today,” 23-24.

¹³⁸“Christian and General Reasons for Engaging in Pure or Applied Science Today,” 24.

affirming Christian involvement as a continuation of the Protestant tradition. The rise of creationism elicited a measured but firm response from RSCF leaders, who saw antievolutionism as a threat to their attempts to foster profitable dialogue between science and theology. It is worth noting that although opportunities arose and the RSCF had the professional prestige required, the group never attempted to pillory their more conservative brethren. Further, the attention given here to evolution by no means suggests that creationism was a significant issue in the UK—it does suggest that it was a significant issue for the RSCF. Still, looking more broadly one sees a group that consistently desired to move beyond the questions of evolution versus creation and the popular controversies that fueled such passion. In this way one might see the RSCF, like the ASA, as reluctant participants in the most popular science and religion issue of their time.

CHAPTER SEVEN

Conclusion

This dissertation began by drawing attention to the dramatic decline in efforts by evangelicals to reconcile evolution and Christianity during the opening decades of the twentieth century. Between the 1880s and the 1920s, notable scientific and religious leaders strove to overcome the antithesis between science and religion that was claimed by prominent figures during the 1860s and 1870s. Claims that reconciliation required theological liberalism has been contested. While evolution was more readily synthesized with liberal theology, James Orr, B. B. Warfield, and James McCosh represent those who accepted transmutation and maintained orthodox faith. The claims that reconciliation was often based upon a non-Darwinian theory of evolution stands. Although important exceptions can be found, the majority of Christian evolutionists assumed a Lamarckian rather than a Darwinian view of transmutation. In the 1920s and 1930s, however, a resurgence of social and religious conservatism undermined the foregoing efforts. Economic depression, the growing threat of war, and theological responses to liberalism led conservatives to reject the culturally prominent faith in progress and to abandon their efforts to integrate science and theology. At its best, this trend led scientists to ignore religion and compelled theologians to turn their attention towards other more fundamental issues. At its worst, the events triggered a bitter struggle for the right to define reality.

The argument here has been that in the following decades, leading evangelical scientists countered this trend. The founding of the American Scientific Affiliation and the Research Scientists' Christian Fellowship signaled a renewed effort by evangelical scientists to reconcile Christianity and science. Liberal theology and scientific naturalism were still rejected, but Christianity and science were held to be reconcilable as long as one recognized the inherent epistemological limitations of both science and the Bible. Thus, during the same period when antievolutionary creationism became prominent within large sections of conservative evangelicalism, a key group of scientists worked diligently to reconcile Christianity and evolution without forsaking biblical fidelity, orthodox theology, or leading scientific views.

The ASA and RSCF were both founded in response to the scientific challenges confronting Christianity, but the organizations' founders expressed considerably different assumptions about what this entailed. Reflecting the antievolutionary context of American evangelicalism and the fundamentalist background of its founders, the ASA was envisioned as a means for guarding the faith of evangelical college students by offering a scientifically sound defense of the faith. Although the organization never officially opposed evolution, the founders saw the theory as contrary to the Bible and inconsistent with clear scientific evidence. Soon, however, the story of the ASA became one of transition. Although the organization consistently promoted its neutrality in the antievolution debates, by 1960 many of the group's leaders accepted modern biology and defended the evangelical acceptance of evolution. The RSCF also recognized the potential challenges of evolution, but it was more concerned with the evangelistic vacuum within the professional scientific community and considered naturalistic

assumptions more important than specific theories. By the early 1960s, both groups were insisting on the need to differentiate between the naturalistic methodologies of modern science and the materialistic philosophies that sometimes followed. In this way, the ASA and RSCF could be seen as attempting to prevent the fusion of science and materialism that was apparent nearly a century earlier. Meanwhile, both groups became staunch advocates for the value of scientific knowledge in theological discussion and apologists for the importance of the scientific enterprise more broadly. The former was most evident in the groups' insistence that science be considered when attempting to interpret biblical statements about the natural world. The latter was demonstrated by the RSCF's response to the 'swing from science' of the 1960s and the ASA's support of recombinant DNA research in the 1970s.

By 1985, the ASA and RSCF had endured a series of challenges from conservative antagonists who rejected either the synthesis of evolution and creation or the willingness to give scientific knowledge a voice in biblical interpretation. Unlike events a half century earlier, however, the ASA and the RSCF proved able to withstand such critiques. What accounted for this staying power? First, in the tradition of Asa Gray, the leaders of both groups were Christians and scientists. These were not self-proclaimed authorities, but accomplished and often prominent members of the scientific community who maintained robust evangelical faith while pursuing authentic research. Their commitment to professionalism was in part demonstrated by their efforts to ensure that as the membership of both organizations became increasingly diverse the groups remained under the leadership of professional scientists. Second, both groups had clear evangelical backgrounds and commitments. Thus, while scientific integrity was of primary

importance, they understood and appreciated the resistance they received from more conservative brethren. In particular, they shared the evangelical commitment to the Bible and were unwilling to jettison biblical testimony in light of the scientific consensus.

Most important was their affirmation of an evangelical commitment to the Bible without insisting on common-sense, literalistic interpretations. From the beginning the RSCF reflected the British tradition of emphasizing the Bible's infallibility in areas of faith and conduct rather than its historical and scientific content. This view fit well with Donald M. MacKay's development of complementarity. By the early 1950s, the RSCF adopted insights from quantum physics to argue that science and religion offered distinct perspectives of the natural world that could be reconciled if one recognized them as complementary descriptions rather than mutually exclusive claims. By the 1960s the RSCF had all but officially accepted complementarity as the most efficient means for reconciling science and Scripture. The benefit of such a view, it was argued, was the avoidance of reductionism; neither Christians nor scientists could assume that their approach to understanding the world invalidated the other perspective. In the context of logical positivism and scientific materialism on the one hand and conservative antievolutionism on the other, complementarity proved a valuable approach for dealing with the challenges at hand. The ASA's transition from fundamentalist to neo-evangelical hermeneutics brought the Americans closer to their British counterparts. Although the group never fully accepted complementarity, by the mid 1970s key ASA leaders were explicitly affirming it as a valuable means for reconciling the most challenging scientific and biblical claims. As a result, the leaders of both groups affirmed the Bible and science as equally valid perspectives of the natural world.

In addition to these conclusions, this work may further our understanding of the similarities and differences between American and British evangelicalism. The assumption at the beginning of this project was that there were significant professional and ideological differences between the ASA and RSCF. Such dissimilarities did exist, particularly in the earliest years as the founders began forging each groups' identity, but most of these were reflections of the context within which the organizations developed. Most prominent were the antievolutionary convictions of American fundamentalism and the influence this had on the ASA. Creationism existed in both countries. In fact, this study has demonstrated that creationism was more prominent among British evangelicals than traditionally assumed. Although antievolutionism never achieved broad popularity in the UK, prominent British evangelicals expressed similar convictions. Still, the cultural support American antievolutionists enjoyed resulted in greater confidence that their views were of equal scientific weight with those of mainstream science. Creationism was most preoccupying for the ASA in the early 1960s, as the group witnessed the founding of the Creation Research Society in 1963. Over the next decade ASA struggled to foster cooperation between the two groups without compromising their own views. RSCF leaders also dedicated a considerable amount of energy to dealing with creationism in the early 1980s, but the cultural weakness of British antievolutionism allowed Barclay and others to redirect the Fellowship's attention elsewhere. By the end, the leaders of both groups were demonstrating increased frustration with creationists' tactics and their monolithic agenda.

Important organizational and operational differences also existed between the two groups. The RSCF's association with Inter-Varsity Fellowship offered an immediate

identity, clear theological boundaries, and a relatively broad audience for its work. Its self-perpetuating committee fostered a unified vision among its leaders, while Oliver Barclay's enduring guidance allowed control over the group's direction and work. The ASA's independence was both a benefit, because it offered greater freedom of thought in a more hostile environment, and a hindrance, because of the financial challenges it brought. The procedures Barclay orchestrated for the annual meetings constituted an important difference between the RSCF and the ASA. The RSCF's pattern of writing papers as a group, circulating them to all participants ahead of the annual conference, and devoting the majority of the time together to discussion rather than presentation encouraged a level of dialogue rarely achieved by the ASA.

The ASA and RSCF also exhibited key theological differences. Reflecting the American commitment to common-sense hermeneutics and the insistence on the unity of truth, more than a few figures within the ASA expressed a strong desire to reconcile science with particular passages from Genesis and only reluctantly admitted scientific inaccuracies in Scripture. Overall, the RSCF lacked such concerns. Due to the influence of theologians such as James Orr and the complementarity of Donald MacKay, the RSCF rarely demonstrated a desire to align biblical details with scientific principles. A desire for theological consistency overshadowed efforts at biblical literalism. Further, the overt commitment to Calvinism expressed by R. Hooykaas and shared by prominent leaders encouraged the view that divine action and natural law were virtually indistinguishable. As a result, both miracles and evolution could be equally credited to divine activity. The ASA lacked a shared preference for a particular theology.

Perhaps the most prominent difference was the extent to which each organization was willing to resist creationism. While never shunning creationists themselves, the RSCF leaders' commitment to demonstrating the harmony between modern science and Christian faith prompted clear reactions against antievolutionary arguments. Barclay was careful to keep his personal views from coming across as official, but he never prevented the RSCF from taking a public stance in favor of evolution. Antievolutionary voices were welcome to join the conversation, but their ideas were never considered equal with the prevailing views. The ASA's consistent affirmation of holding no official views on controversial issues softened its critique of conservative challengers, but it also resulted in a more ambiguous affirmation of modern science. The ASA officially defended evolution as a valid evangelical view of creation without ever accepting it as its official position. This commitment to neutrality created a paradoxical and somewhat confusing situation. The ASA affirmed the validity of the modern scientific enterprise without officially accepting one of its most important components. It also reveals an important difference between the two organizations. The RSCF hoped to be salt and light to the scientific community not by demonstrating the weaknesses of the scientific enterprise or its erroneous views, but by showing that modern science and Christian faith were not mutually exclusive. As a result, RSCF leaders had little patience for Christian groups that insisted that the key to reconciliation was disproving the scientific mainstream. The RSCF exerted considerable effort to help Christians reconcile science and their faith, but this was a secondary concern. The scientific community was the primary audience; the church came second. The ASA's mantra of neutrality, which seems to have stemmed in part from a pastoral concern to reach those in the churches, reflected a corporate

reluctance to challenge one's theological conscience in order to overcome the issues. As a result, the ASA remained more welcoming of those whose faith motivated them to disprove science. This is not to say that leaders were unwilling to challenge the faith of the more conservative members. Lawrence Kulp, Walter Hearn, and Richard Bube represent a long list of members who confronted creationists with the futility of their efforts. Still, the ASA's desire to gain the support of American evangelicals prevented their endorsement of evolution, a vital component of modern science. It must be remembered, however, that the ASA continued to develop after 1985. In the decades since, it has more clearly affirmed the validity of evolutionary science. In 1991, the ASA gained recognition from the evangelical newsmagazine *Christianity Today* for endorsing the teaching of evolution in public schools.¹

These differences, however, should not overshadow important similarities between the groups that developed by the early 1960s. Both demonstrated concern for the challenges facing college and university students. Both made efforts to reach secondary students, to benefit the broader church, and to engage mainstream scientific groups. Furthermore, both shared similar scientific and philosophical views that rejected the amalgamation of science and philosophy. Perhaps most interesting, both the ASA and RSCF became reluctant participants in the century-old debates of creation versus evolution. Both groups recognized the challenge the topic posed, but by the mid 1960s leaders were looking in new directions and dealing with fresh topics ranging from psychology to ecology to human engineering in order to offer a Christian perspective on pressing issues. Repeatedly, however, the organizations returned to questions of origins. Whether prompted by creationist challenges or out of recognition for the needs of the

¹"Evolution as Theory," *Christianity Today* (February 10, 1992): 54.

next generation, the ASA and RSCF regularly readdressed Darwin's challenge. Thus, the differences between the ASA and RSCF were less significant than the similarities they shared. They both resisted creationism without forsaking a firm commitment to Scripture. They strove to promote the scientific enterprise among their evangelical peers. And they sought to answer those who insisted modern scientific views necessitated philosophical naturalism or theological liberalism.

It is perhaps too soon to discern the significance and lasting effects of these organizations. Their continued existence suggests a longevity that surpassed similar attempts from a century ago. The professional accomplishments of past and current leaders demonstrate their claims concretely. That conservative Christian faith and modern science are not mutually exclusive was embodied in the work of individuals such as R. J. Berry, Sir Robert Boyd, Richard Bube, Owen Gingerich, and Malcolm Jeeves. Still, whatever the significance of the organizations turns out to be, the issues with which they struggled are perennial questions of the Christian faith. How does one distill the eternal truth of Scripture from the cultural norms and assumptions in place at the time the Bible was written? How does one relate contemporary knowledge to the testimony of an inspired but ancient text? How does one speak to a scientific culture that is largely opposed to the Christian worldview? These are the central issues that challenged the ASA and RSCF. They responded by calling on scientists to recognize that the methodological reductionism necessary for the scientific enterprise did not necessitate philosophical reductionism, by advocating for science as an integral aspect of the cultural and evangelistic mandate of the church, and by affirming the value of scientific knowledge for theology and biblical interpretation without falling into the syncretistic

traps that characterized the modernist theologians earlier in the century. In the end, the ASA and RSCF represented a contingent of post-World War II era scientists who sought to reconcile conservative Christian faith with evolution, to distinguish between methodological and philosophical reductionism, and to promote a fuller appreciation for the scientific enterprise among evangelical Christians.

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Abbreviations

CG *The Christian Graduate*

JASA *Journal of the American Scientific Affiliation*

JTVI *Journal of the Transactions of the Victoria Institute*

PSCF *Perspectives on Science and Christian Faith*

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