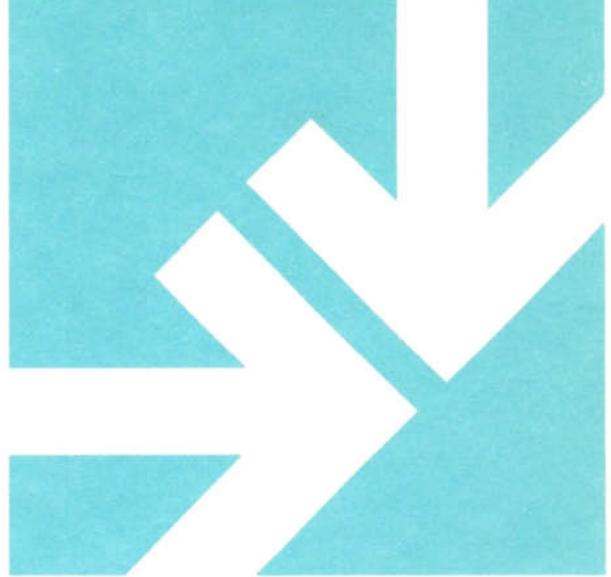


# JOURNAL OF THE AMERICAN SCIENTIFIC AFFILIATION



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*"The fear of the Lord is the beginning of Wisdom."*

Psalm 111:10

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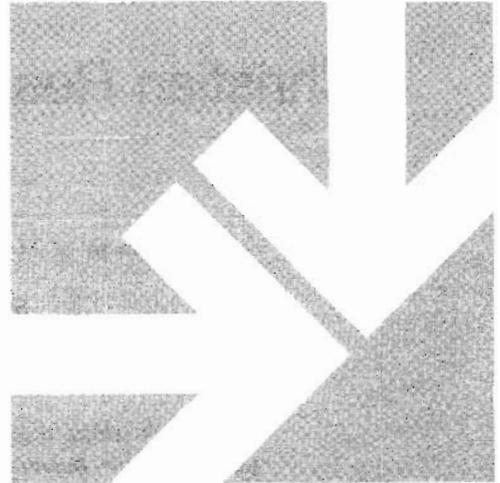
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# JOURNAL OF THE AMERICAN SCIENTIFIC AFFILIATION



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## *Thank You, Russ*

Since he took over the task of Editor of the Journal of the American Scientific Affiliation from Dave Moberg in September 1964, Russell L. Mixer has labored faithfully and well in bringing these volumes to you. As you help us to do so, we will try to continue in his footsteps.

The Journal of the American Scientific Affiliation is your journal—a vehicle for the expression of your convictions and of your questionings, an opportunity for service and for participation in the interaction of scientific and Christian communities. Its success depends much more on you than it does on us. We urgently invite your regular contributions.

The paid circulation of the Journal has increased from 1600 in 1965 to 2100 in 1969. We suggest that you consider the Journal as a means of acquainting friends and colleagues with the work and goals of the Affiliation, and that you actively work in increasing its circulation through gifts of individual issues and of subscriptions.

Our existence today depends on the dedicated service of the editors, staffs, and contributors of the Journal in the past. So as we begin a new volume, a new year, and a new responsibility, let us start by saying,

Thank you, Russ.

# Christian Responsibilities in Science\*

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*A Christian active in science has responsibilities that are peculiarly his because of his commitment to Jesus Christ, and through Him, to the scientific investigation of the natural world. These responsibilities lie in the areas of (1) philosophy—motivation and purpose; (2) practice—professional and personal integrity; and (3) service—social and political involvement. Some of the questions that must be faced are the following. Is the scientist called to describe and understand nature, or is his function only to control and manipulate? How is the support of science related to the potentialities for purely practical results? Can science be properly used apologetically in Christianity? What is the scientist's responsibility in view of likely applications of his work? Is the development and support of science a necessary application of Christian principles to a world of need and suffering? Some suggestions for answers are offered, but the significant answers must be worked out by the interacting scientific and Christian communities. The ASA belongs in the center of this interaction.*

## INTRODUCTION

### Character of ASA

The ASA is an affiliation of men and women who have made a commitment of their lives and energies to the Lord Jesus Christ, and who, in the course of working out this relationship, have made a commitment of their lives and energies to the scientific investigation of the natural world. This character of the ASA establishes a unique opportunity and a unique responsibility for its members, who are part of two usually mutually exclusive communities. It is the view of this paper that the members of the ASA, and the ASA as an organization, are called to be a bridge between the scientific community and the Christian community. The fulfillment of this calling requires two-way traffic across the bridge: effective communication.

### Competing Views of ASA

There are many members of the ASA, who, I believe, would accept this statement of the character

and purpose of the ASA, at least in general outline. But there are also many members, I fear, who regard this view of the ASA to be in competition with what they consider to be a more primary and historically justified view of the ASA. Such members regard the ASA as an affiliation of Christians who are determined to use their association with science as a means of defense for the Christian faith. Thus the ASA is viewed more as a militant apologetic force for Christianity, than it is as a reconciling intermediary between scientific and Christian communities. I believe that it is important to realize that not only does the view of the ASA as a bridge between communities include the view that the ASA should be a vital force in Christian evangelism and defense of the faith, but it offers a way of procedure that is more likely to be met with success. It also offers ASA members an opportunity to participate in that aspect of reconciliation that is uniquely theirs.

### Need for a Central Position

The fact of the matter is that if ASA members and their colleagues throughout the world do not play this reconciling role between scientific and Christian

\*Presidential address, ASA Convention, Calvin College, Grand Rapids, Michigan, August 22, 1968.

communities, there is no one else to play it. They are the only ones who know from the inside what it means to trust oneself wholly to Jesus Christ and to partake of the sacraments signifying our union with Him, and at the same time know from the inside what it means to properly evaluate the potentialities of scientific investigation for an understanding of the natural world. Theologians who attempt to evaluate science, or scientists who attempt to evaluate theology, are under the best of circumstances simply unequal to the full demands of that task. Once we obtain a vision of our position in the scheme of things as Christian men of science, we cannot do otherwise than thank God for the central position to which He has called us.

### Categories of Problems

In its function of reconciler between Christian and scientific communities—ultimately of course involving the reconciliation of individual men with God through faith in Christ—the ASA is called upon to face questions and problems in a number of different categories. For the sake of our present discussion, we have chosen to summarize these in terms of three categories: (1) philosophy—or what is the purpose and motivation for scientific activity from a Christian point of view; (2) practice—how does a Christian man of science maintain professional and personal integrity; and (3) service—or what social and political concerns have a legitimate claim upon the Christian man of science. It should be clearly recognized once again that these areas of activities are *not* offered as *alternatives* to Christian evangelical efforts, but at all times assume a basic evangelical motivation. They extend beyond this particular orientation, however, to the realization that Christian commitment conveys a Christian responsibility, not only in evangelization, but also in the working out of Christian principles in the world. To achieve this we need not become all things to all men; we need only to be what we are: Christian men of science. We need only show that Christian men of science take this world as seriously as the next, and are willing not only to preach Christ but also to live Him.

## PURPOSE AND MOTIVATION OF SCIENCE

### Basic Questions

What good is science? What is the connection between a scientific theory and the real world? Can the scientific method lead to truth? Is a scientist a committed investigator of the workings of the natural world, or is he a high-grade technician only, seeking to manipulate and control the natural world, but never able to understand and describe how it really is? These are typical of the many questions that have been raised as to the real purpose and motivation for pursuing science. Since appreciating the purpose for any discipline or activity is a necessary step in evaluating its success and defining its potentialities, it is essential that we consider the purpose of science from a Christian point of view.

### Philosophical Positions

Because the questions posed above are hardly new, there are a number of attempts to answer them in different ways from different historical positions and presuppositions. There are the empiricists or positivists who argue that science consists simply of the ordering and arrangement of sense data, with no correlation between this activity and the “real world,” which is usually considered an irrelevant concept. There are the idealists who argue that the concepts and descriptions of science are purely subjective, being the creations of the mind rather than any objective description of the natural world itself. There are the linguistic analysts and the operationalists who insist that the most important thing to ask is not, “What is the meaning of a scientific statement?” as though the statement really had cognitive significance for the real world, but to ask instead, “How is that scientific statement being used?” None of these positions does real justice to the Christian and the scientific perspective. The positivist underestimates the theoretical side of scientific activity, the contribution of the scientist’s creative ingenuity. The idealist underestimates the experimental side of scientific activity, the necessity of correspondence with experimental data. The operationalist underestimates the capability of science, the bona fide potentiality that science has of providing approximate knowledge, but definitely knowledge nevertheless.

The possibility that operationalism could fulfill the role of a Christian philosophy of science has received special attention during recent years in evangelical circles because of the advocacy of Gordon H. Clark. In correlation with the thesis that true knowledge comes only through Scriptural revelation, Dr. Clark has denied that knowledge can be obtained through science about the natural world. He has argued that “the laws of science do not describe the workings of nature,”<sup>1</sup> and that “the laws of physics therefore are neither discoveries nor descriptions.”<sup>1</sup> Dr. Clark defines his view of operationalism as follows,

“Operationalism identifies the purpose of science not as description but as manipulation. Laws are not cognitive statements about nature, but are directions for operating in a laboratory. They do not say what nature has done; they say what the scientists should do. . . . With or without a priori concepts, science is not a cognitive enterprise.”<sup>1</sup>

There is unfortunately not the space here to devote to analyzing Dr. Clark’s line of argument in arriving at these conclusions. It seems to me, however, that these are arguments and conclusions that could be reached only with great difficulty by one who had actually practiced science. Whereas the claims and potentialities of science must be carefully defined and its limitations understood, the claim that science does not at least provide a description of nature, albeit an approximate description, is alien to any scientist with whom I have ever discussed this question.

A second point worth noting in passing is Dr. Clark’s use of the concepts of linguistic analysis in interpreting scientific laws as directions for operating

in a laboratory, not as statements about the real world. Now it is common practice for consistent linguistic analysts to apply these principles to all forms of language, particularly to theological language. The statement "I believe in God," is taken to state nothing about the reality or existence of God, but only to assert a particular orientation of life views on the part of the speaker that may be expected to guide him in a given course of action. That this should be the *only* function of language in the case of theology would, I am sure, be immediately and properly rejected. It seems to me that the statement about the absolute non-cognitive nature of scientific language should be similarly tempered.

As opposed to these various philosophical positions that are inconsistent with a fully biblical and a fully scientific perspective, I would suggest the position of Christian realism. This is a position which fully integrates the limitations and the potentialities of science. It recognizes that the scientific enterprise is limited by the finite capabilities of the human mind and the finite capabilities of human experimentation, and thereby recognizes that a scientific description must always be an approximate description. As I have written elsewhere,

"Change and correction, however, are of the very nature of science. Science increases in understanding of the physical world and of man by establishing proper conceptions and eliminating improper conceptions. At no time does science claim to be in possession of the whole truth; in fact, science is quite clear in insisting that it is never able to be in possession of the whole truth. But the process of science is a building, a growth, and an evolution that builds upon that which is established and does away with that which is an improper description of nature."<sup>2</sup>

Or again the limits and the possibilities of science are summarized,

"Not everything can be understood by the scientific method. Man cannot approach God ultimately through the application of scientific methodology. Nor can man derive God by reference to the facts of experience. Science is not an independent method of knowing God, or of becoming like God by understanding all things. Rather, it is a valid instrument in interpreting revelation. The techniques of science are those that are suitable for interpreting the natural revelation of God."<sup>3</sup>

Christian realism recognizes that science must describe in terms of natural categories, and thereby by definition excludes large areas of life and experience from its legitimate domain. It recognizes that science can never achieve that perfect understanding of the natural world that would be properly described as having attained the truth. But it also recognizes that science is a legitimate enterprise for establishing knowledge about the natural world in terms of natural categories, and that this description comes progressively closer to a reliable description of the workings of the natural world as science advances. Christian realism thus acclaims science as a worthwhile endeavor in understanding God's creation as well as in controlling it, affirms the mandate of Genesis to man to have dominion over the world, and prevents the profession of science from degenerating into a mere practice of technology.

### Purposes of Science

The purposes of science are threefold: (1) to *describe* the natural world in an orderly and useful fashion, so that it becomes possible (2) to *understand* in terms of natural categories the workings of that world, and so that it becomes possible (3) to *control* and change that world according to the needs of men and the knowledge given by God.

The description of the world follows from a feedback relationship between theory (man's creative assimilation and proposal for models of the real world) and experiment (man's creative investigation of the actual phenomena of the real world). Such a description must always be in terms of an idealized and simplified system that falls short of the real situation in complexity and completeness. But this is a deliberate limitation on the description of the natural world, which the scientist himself imposes, and which at least to some extent is at his disposal to extend or reduce. I cannot see that this situation, in which a scientific model is an approximate description of the natural world, is greatly different from the theological models derived from the Scriptural revelation. If the physicists' idealized pendulum model is not exactly reproduced by any real physical pendulum (because of the existence of factors that the physicist usually neglects, although he need not do so if he wishes to expend enough mathematical effort and computer time!), then the Scriptural model of God as father is also not exactly reproduced in either human fathers or in the full attributes of God. We understand that certain significant attributes of the real pendulum are describable in terms of the idealized model; this is sufficient for us to recognize the partial truth in this model also. Truth is that which conforms to reality. The scientist checks his partial truths by contacting the reality of the natural world through experimentation. The theologian checks his partial truths by contacting the reality of the whole Scriptural Word of God through study, exegesis, and synthesis.

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*We need not become all things to all men; we need only to be what we are: Christian men of science. We need only to show that Christian men of science take this world as seriously as the next, and are willing not only to preach Christ but also to live Him.*

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The scientist's description of the natural world is usually not an end in itself, but is directed toward two goals. The one goal lies in the area of the mind and of knowledge: the understanding of the world.

The other goal lies in the area of activity: the control of the world.

The goal of understanding the world has a time-honored history in Christian thought. The possibility of "thinking God's thoughts after Him" has given dignity and encouragement to the profession of science. One of the strongest drives that man has, and one that can be legitimately associated with his creation in the image of God, is the drive to understand. Non-human animal species may attempt to control their environment, but I think it is safe to say that no non-human seeks to understand the world. It is of course necessary to remember that a scientific understanding is only a partial understanding, only an understanding in terms of natural categories. But to argue that a scientific understanding is no understanding is as grievous an error as it is to argue that a scientific understanding is a complete understanding.

The goal of controlling the natural world also has a time-honored position in the area of Christian service. Of this area we shall have more to say a little later. The implication is that just as faith must lead to works if faith is not to be reckoned dead, so knowledge must lead to service if knowledge is to be reckoned wisdom.

## PERSONAL AND PROFESSIONAL INTEGRITY

### Basic Questions

By whom should science be supported? To what extent should science be supported? What is the relative value of basic research vs. technological applications of science? To what extent should imminent possibility of practical results be the criterion for the support of a scientific endeavor? In what ways does the scientist bear personal responsibility for the uses to which the results of his work are put? These very practical questions, of interest to Christian and non-Christian scientists alike, all offer a challenge for the application of Christian principles to the responsibilities of science. Since decisions on all questions of policy of this type are based ultimately on basic presuppositions derived from a general world view, these are questions about which the Christian man of science must be concerned.

### Support of Science

Up until the last century the scientists of history have either been independently wealthy or have been the recipients of financial aid from some patron who was wealthy. This was a workable system when scientists numbered only a small minority of the total population. Today, however, we are told that 90% of the scientists who have ever lived are alive now. Many of these scientists are supported by private industry in this country, and presumably are paid out of profits made as a result of their scientific work—at least over the long period. But a large proportion of scientific work is supported directly by the federal government out of tax money, i.e., by the ordinary tax payer. What fraction of the national economy

can safely be committed to the support of science, and what fraction must be committed to maintain desired progress in the future, are questions that are currently the subject of debate all over the country as well as in the Congress.

### Basic Understanding vs. Immediate Results

The relevance of our previous consideration of the purpose and potentialities of science becomes more evident in our present discussion when it is realized that the mood in the country today seems to be strongly against major support for basic understanding and more and more directed toward immediate results and hardware. Why, it is argued, should the taxpayer's money be spent for studies that may never amount to anything; is it not far better to support those aspects of technological development that promise some immediate practical results? If one's philosophical view downgrades the role of science in obtaining understanding and views science only as a technique for the manipulation of nature, then the practical argument is strengthened by the philosophical framework.

There are at least two reasons why a definite balance must be maintained, however, between the effort to obtain a basic understanding and the effort to obtain practical applications. The first reason is that science is a valid technique for gaining understanding, and the increase of understanding must always be to some extent the concern of the collective society as well as of individuals. The second is that continued technological advancement can occur only on the basis of a continued growth in understanding.

### Nuclear Physics: A Case in Point

The need for a *balance* between support for the sake of basic understanding and for the sake of technological advancement is illustrated by the case of nuclear physics. Every year brings the request for a larger and more energetic instrument to probe deeper into the heart of nuclear structure. Needless to say, each new instrument requires a greater and greater investment of financial capital. How can this continued escalation be justified, and how long can it be accommodated? Has not the pursuit of nuclear physics already given mankind sufficient power to destroy himself and his world in the hydrogen bomb? To what extent is it justified to pursue, perhaps endlessly, the chase for the smaller "particle", the more "elementary" constituent of matter, the nature of the forces between such constituents? When the next requested nuclear engine requires a major fraction of the national economy to be committed to produce it, will that be the time to call a halt?

### National Defense: A Major Science Supporter

A large fraction of scientific research in the country today is supported under the aegis of contribution to the national defense. It is a well known fact that it has been far easier to obtain funds for research if it could be correlated with the defense program,

than if only a vague correlation with general human welfare could be established. The unfortunate result has been that much research that might more properly have been supported as a basic contribution to understanding, has been, as a practical matter, supported as a contribution to the military defense effort. This means that the choice of research subjects and the direction of research effort tends to be more or less directly influenced by the military needs of the country. Is this an issue about which Christian men of science should be concerned?

### Space vs. Earth Programs

Let us consider just one more example: the space program. A substantial financial investment has been devoted for a number of years by the national government to activities designed toward putting a man in space for some extended period of time. To what extent is such a program ethically defensible, when such great needs persist here on this earth? Can the expenditure of billions to put a man on the moon be justified when the expenditure of millions would prevent men from dying here on earth? It is sometimes argued that valuable byproducts occur as fallout from space research that are useful for life here on earth. Some of the research my own group carries out at Stanford is supported by the National Aeronautics and Space Administration. The issue is whether or not the present concentration on space projects is not a very expensive way to produce these fallout beneficial results, and whether or not this is a fruitful way to utilize the nation's resources.

### Responsibility of Scientists

Being a scientist is a difficult task, especially today. For a time it seemed that scientists could be simply scientists, investigating the marvels of the natural world with scarcely a thought for the results of this investigation, trusting to the "innate goodness" of human nature to put the results to a humanitarian and productive use. There was a kind of Pollyannish optimism that the problems of the human race could be rather immediately solved by the application of scientific research and technology, and that once a few of the more serious materialistic needs of the human race could be removed, this same "innate goodness" would express itself in appropriating the results of science for the good of all mankind. It is difficult to see how anyone can retain this misguided optimism today. It has become abundantly clear that every advance with potentiality for good has a potentiality for evil that is proportional to that for good. It has also become clear that while men of good will are attempting to harness the potentiality for good, others are more busily proceeding to harness the potentiality for evil.<sup>4</sup> The scientists, the producer of the potentiality, can no longer sit back and let the non-scientist make all the decisions about the uses of it. Scientists resist becoming politicians and activists; but do we today have any real choice?

But it must be noted that the responsibility of the scientist goes beyond even the continuous effort to

preserve the beneficial use of his work. For there are an increasing number of cases in which the best-intentioned applications of scientific research have nevertheless resulted in severe problems for the human race. Such applications fall in the area of scientifically-induced changes in the environmental conditions to alleviate need and suffering, which in themselves become threats to human welfare. Success in reducing the death rate and in prolonging the lives of the elderly produces problems of overpopulation that can be met only by complementary success in birth control and re-utilization of the elderly in meaningful capacities. Success in providing jobs and conveniences through industrialization produces smog and water pollution that can be met only by strict controls and the constant search for solutions. Emphasis on the value of the human being as opposed to the value of the "things" of the natural world (forests, mountains, rivers, canyons etc.), as discussed earlier in this meeting<sup>5</sup>—an emphasis strengthened by some of the strains of the Christian perspective—has led to serious interference with ecology and a loss of both practical and aesthetic benefits. In all of these areas the Christian man of science is called to exercise his reconciliative and redemptive function as an ambassador for Christ.

## AREAS OF SERVICE

### Science in the Service of Evangelization

The presentation of the Gospel of Jesus Christ to the unregenerate man is at once both an extremely simple and an extremely complex responsibility. It is simple in that the message is one that anyone can understand and appropriate for himself with the uncluttered faith of childhood. It is at the same time complex because the message must be brought to those in need, it must be brought in a fashion and under conditions in which its true meaning is clearly discernible, it must triumph in spite of the caricatures of it that exist in most minds today, and it must overcome all the abuses and misuses to which men have subjected it in the past. Because of his position as a member of both the Christian and the scientific community, the Christian man of science has a unique responsibility.

The Christian scientist is called to serve the Christian community particularly by participation in education and in propagation. Through education he has the job of making sure that the Christian community has an accurate understanding of the limitations and of the potentialities of science. There are as many caricatures of science in the Christian community as there are of Christianity in the scientific community. He is responsible for building an understanding of the differences between pseudo-science, science, and scientism. The ability must be developed to discriminate both against pseudo-science, the attempt to use scientific form without scientific integrity to defend Christian ideas, and against scientism, guilty of the same error in attempting to discredit Christian ideas. He has the opportunity of using the

scientific perspective on the relationship between objective reality and natural law to combat the prevalent tendency to subjectivize and relativize all experience and values today.

The Christian man of science is also called upon to be the possessor of "beautiful feet" (Isaiah 52:7; Romans 10:14-17) as he assists in the propagation of the Gospel: The Church still lags far behind in its utilization of modern means of communication for bringing the Gospel to that vast majority who will never (humanly speaking) be found inside church walls. Missionaries at home and abroad have constant need for help from scientifically knowledgeable people for the solution of daily problems. Fortunately there are such organized efforts as VITA (Volunteers for International Technical Assistance, Inc., College Campus, Schenectady, New York 12308) and MARC (Missions Advanced Research and Communication Center, 919 W. Huntington Drive, Monrovia, California 91016) which serve as focal points for Christian service in these areas. Members of the ASA are called upon as individuals and as a corporate body to support and to become involved in activities in which the knowledge of science is put to work to present and interpret the Gospel to men in need of both physical and spiritual salvation.

#### Science as an Expression of Christian Life

It is historically true that to a large extent the development of science in the Western world has had close links with the perspective on the world derived from the Judaeo-Christian faith. It is the emphasis on the objective rational reality of the natural world that gave rise to the philosophical presuppositions that nurtured science. It is the Judaeo-Christian emphasis on the value of the individual and the value of work that fostered the industrial revolution and the development of scientific technology.

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*The responsibility for a Christian confronted with need and suffering allows for no other response than to alleviate it. The fact that human nature will pervert the best in life does not mean that the best should not be sought. There is after all no hope for human nature, with or without science, if left to its own devices.*

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I believe it is also a valid thesis that the development of science is a necessary Christian response to the existence of need in the world. There are those who sometimes argue that we would all be better off if the first scientific advance had been nipped in

the bud, and we had been allowed to continue as a peaceful agrarian society. Recognizing some of the evils that the pursuit of science has introduced, as we mentioned in the previous section, they argue that the potential evils far outweigh the potential good. If medicine has saved lives, it has produced overpopulation and starvation. If physics promises new sources of power through nuclear energy, it has produced the hydrogen bomb that is able to destroy us all. If the automobile represents a major emancipating factor in the life of the individual, it has fouled the air he breathes through its exhaust. If improved crop control has increased the harvest yield to feed more people, it has endangered lives with insecticide poisoning. If our homes are more physically comfortable and attractive, the pace of life accompanying an industrialized society gives us less time to enjoy them and contributes to the disintegration of the family. If sensitive detectors are developed to improve X-ray diagnostics, the same technology has been used to produce gun sights that permit people to kill at night. The list can be continued at great length, each example illustrating our previous point that the creativeness of human nature in fashioning evil from good has no limit.

And yet I would argue that the responsibility for a Christian confronted with need and suffering allows for no other response than to alleviate it. The fact that human nature will pervert the best in life does not mean that the best should not be sought. There is after all no hope for human nature, with or without science, if left to its own devices. When science in service to mankind is viewed as a redemptive instrument on the natural level in the hands of a man committed to Christ, the purpose and practice of science is established in the context where it belongs. Even as the kingdom of God exists here and now in the hearts and lives of those who are committed to Christ (Luke 10:9) even though the full realization of the kingdom yet awaits (Hebrews 2:8), can we not suggest that the physical redemption of that kingdom is committed here and now to the hands of those who are committed to Christ, even though the full physical redemption also awaits (Romans 8:19-21)?

If therefore the Christian response to human need requires the development of science as one way to meet that need on the natural level, do not Christian men of science have a double responsibility? First they have a responsibility to see that the pursuit of science is directed toward the alleviation of need and suffering, and second they have a responsibility to see that the evil effects of scientific advance that must inevitably occur in our imperfect world, are counteracted and neutralized.

Perhaps I may be forgiven if I conclude this discussion with one further quotation from an earlier writing:<sup>6</sup>

"Christianity affirms that the response of the Christian to suffering in the world should be like that of Jesus, who came to heal the world from sin and all its effects. His response to suffering was to declare the good news of the gospel, that sal-

vation and healing were being brought to the world through Him and through His disciples both then and after Him. His call to the Christian is to face the existence of suffering in the world, to recognize that God can use even suffering for the good of His children, and to do everything in one's power to bring an end to every kind of suffering in the lives of men. One of the great privileges of science is to play a role in this program; one of the great tragedies is that sin so consistently corrupts these same findings of science. The Christian man of science has a commission to work for the utilization of nature in the alleviation of suffering in the name of Jesus Christ."

### CONCLUSIONS

There is a parallel between the Christian church and the ASA. The conservative Christian church has for a long time been concerned in minute detail with matters of such sophisticated theology that their relationship to daily life ceased to exist. I suppose that I will tread on someone's toes (but I tread lightly!) if I indicate that such matters as sprinkling vs. immersion; infant vs. adult baptism; pre- vs. post- vs. amillenialism; infra- vs. supralapsarianism; pretribulation vs. post tribulation rapture; church laws against playing cards and attending movies; dispensationalism vs. historic orthodoxy; open vs. closed communion; women preachers vs. women silent; yes—even the classic outlines of the historic Arminian-Calvinistic controversy—all of these have exercised the strength and ability of the church in controversy to such an extent that the relationship of the church to the problems that people in the ordinary walks of life were daily asking was almost forgotten. Today we are experiencing a vital re-awakening of evangelical Christians, an awakening not so much attributable to the church as in spite of the church, an awakening forced upon evangelical Christians by the events of the day. Christians are realizing anew that the message of the Gospel of Jesus Christ is not meant to be a verbal exercise, with preaching leading to salvation through intellectual assent to doctrine alone. They are realizing that the message of the Gospel of Jesus Christ is a message to people in need, a message that offers both physical and spiritual help through faith in Christ. We, of the comfortable middle-class white Protestant congregations, realize how often we have said in effect, "Go in peace, be warmed and filled," (James 2:16) but have not involved ourselves in their need. And, as God gives the strength, we are changing if ever so slowly.

In many respects the ASA has often acted in a manner similar to that of the conservative Christian church. Conceived to be an instrument of that church, albeit with the special weapons afforded by some familiarity with science, the ASA has often exhibited the characteristics of a closed community, debating issues that few outside of the closed community of the hyperorthodox church continued to consider vital and meaningful. Mistaking science for scientism, pseudo-science has been called in to do battle. Accept-

ing a mode of biblical interpretation, those concerned have sought to combat scientific developments that appear to be in contradiction. While the fruits of science continue to challenge the most creative contributions of Christian men of science, with the front pages of today's world covered with concerns related to the hydrogen bomb, radioactive fallout, population explosion, smog and water pollution, waste of natural resources, threatened destruction of forests and rivers, social effects of computer technology, organ transplants, possible freezing for future survival, mental disease, the genetic code and the understanding of life, continued harnessing of science for military purposes, extrasensory perception and the validity of research in parapsychology—still we have too often been guilty of refusing to face up to our role in the world today. As members of the church, we love to retreat from the sinful unpleasantness of the secularized world around the church into the sinful pleasantness of self gratification. So also as members of the ASA, we love to retreat from the monumental task that staggers us as Christian men of science, into the safer areas of evolution, Adam, and flood geology. I hear voices from all quarters of the ASA saying, "Yes, we must move out into the world as Christian men of science." If the ASA is to fulfill more than a tiny fraction of its unique opportunities, I believe these voices must prevail.<sup>7-11</sup>

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- <sup>2</sup>*The Encounter Between Christianity and Science*, R. H. Bube, Editor, Eerdmans, Grand Rapids, Michigan (1968), p. 35.
- <sup>3</sup>*Ibid.*, p. 69.
- <sup>4</sup>It is somewhat remarkable how the fallacious optimism about the "innate goodness" of human nature lies at the root of so many of mankind's attempts to solve its problems. The liberal Democrat believes that if the causes of poverty and hunger are removed, then the innate goodness of men will assert itself and remove the causes of strife and discord. The conservative Republican believes that if the individual is left free of control to develop according to his individual initiative, the innate goodness of his human nature will lead him to share with others for the benefit of all. The Communist is relying on the innate goodness of human nature to finally pull off the ideal of the socialist state. In religious thought, Modernism and Christian Science presuppose a basic goodness of the human heart upon which religious understanding and progress can be based. It seems to me that neither the biblical nor the historical record offers much support for such optimism.
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# Faith and Human Understanding

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*This paper examines the nature of faith as an integral part of all human understanding. Rather than a block to rational thinking, faith is seen as a light by which one can begin to build a rational structure. An analysis is given of major contributions to this viewpoint by men who have grappled deeply with the problem of the relationship of faith to all varieties of knowledge. In particular, the thought of Blaise Pascal and Michael Polanyi is examined. Evidence is presented for recognition of the compatibility of the validity of faith experience with a world-view of reality that is hierarchical in structure.*

## INTRODUCTION

Now faith is the assurance of things hoped for, the conviction of things not seen.<sup>1</sup>

Thus, the biblical writer defines faith as an act of trusting, of holding to convictions when the evidence in a given situation is not immediately apparent. It should be noted immediately that faith is not blind, it does not arise out of a vacuum. Faith stems from man's previous experience; salvation faith from specific historical events (seen through the eyes of faith as God revealing himself in history), more general faith from man's contact with reality through personal relationships with others and experience of order present in nature, etc. Faith, however, is much more than a mere extrapolation of past experience for it interprets such experience and holds to convictions which cannot be reduced to mere inductions from scientific experience. The conviction that a scientific theory must possess a rational beauty and symmetry in an artistic sense is a good example of the latter. The purpose of this paper is to present the viewpoint that faith is an inherent part of all human endeavor and as such it is not destructive to sense experiences and rational thinking but a helpmate as seen so well by Blaise Pascal:

Faith indeed tells what the senses do not tell, but not the contrary of what they see. It is above them and not contrary to them.<sup>2</sup>

A secondary purpose is to remind readers of past and present works on the nature and purpose of faith

which elegantly testify to its universal quality. Accordingly, we shall now examine key aspects of faith as a guide to understanding reality.

## BELIEVE IN ORDER TO UNDERSTAND

Recent studies by philosophers of science have forcibly revealed that scientific theories are not merely summaries of data inductively gathered together. Two recent definitions of a theory and theory formulation will make this clear. Karl Popper defines theory by using the analogy of a net:

Theories are nets cast to catch what we call 'the world': to rationalize, to explain, and to master it. We endeavor to make the mesh finer and finer.<sup>3</sup>

N. R. Hanson sees a theory and its formulation as follows:

Physical theories provide patterns within which data appears intelligible—A theory is not pieced together from existing phenomena; it is rather what makes it possible to observe phenomena as being of a certain sort, and as related to other phenomena—A theory is a cluster of conclusions in search of a premise. From the observed properties of phenomena the physicist reasons his way toward a keystone idea from which the properties are explicable as a matter of course.<sup>4</sup>

Thus, theories represent keystone ideas which fit a range of phenomena into a pattern. They are formulated not by merely inductively collecting and summarizing data or making deductions from certain experimental facts, but by actively seeking to find a key pattern which provides a unified way of under-

standing the phenomena of interest. Such a process is not automatic; its driving force is the trust that such patterns do exist. Concepts of a given theory may have to be modified or even abandoned as new data arrive, but the basic trust or faith that an intelligent pattern exists is central to theory creation. In summary, it is faith that a key idea will relate phenomena coherently to one another that motivates the selection of what is significant in existing data and the search for new data. It is by looking for key concepts that illumine broad areas of physical reality that science has made progress.

Alan Richardson in his book, *Christian Apologetics*<sup>5</sup>, has some very helpful thoughts on the relationship of faith to human understanding. He first points out that

the minds of the philosopher and the scientist are not different in kind or in operation from the minds of the artist, the poet or the man of religion. We are apt to overlook the fact that the scientist and the poet possess the *human mind* in common, and that when we speak of the scientist or the philosopher using methods of reason and induction while the poet or religious man uses intention and imagination, we are making a distinction which exists in theory (and old-fashioned theory at that) rather than in fact.<sup>6</sup>

Scientists seek to find patterns in Nature by coupling imagination and insight with inductive methods.

The powers of induction in the mind of a great scientific genius are not entirely dissimilar to the faculty of a great poetic genius for perceiving all kinds of analogies which ordinary people do not notice without his help.<sup>7</sup>

Secondly, Richardson, following St. Augustine, asserts that faith plays a vital role in all realms of human experiences. St. Augustine, in his development of the Old Latin Bible passage Is. 7:9,

Dost thou wish to understand? Believe. For God has said by the prophet: 'Except ye believe, ye shall not understand' . . . Understanding is the reward of faith. Therefore, do not seek to understand in order to believe, but believe that thou mayest understand; since 'except ye believe, ye shall not understand.'<sup>8</sup>

saw a method of universal significance, faith as a guide by which reason works. Faith does not provide the data of empirical knowledge; faith rather plays its role in seeking to find a keystone idea, a pattern that will fit and explain the data. Such a task requires creative insight which couples an artistic intuition with formal techniques of induction and deduction. Albert Einstein has stated that

There is no logical path to these laws (laws of a scientific theory); only intuition, resting on a sympathetic understanding of human experience can reach them . . . Concepts, considered logically, never originate in experience; i.e., they are not to be derived from experience alone.<sup>9</sup>

Creative insight or intuition is a vague term, but one fact is clear: such insight is intimately related to having faith in the soundness of some key idea or pattern. Once faith in a key pattern is established, reason then

takes over and develops a more ordered picture, looking for possible faults and finally conceiving of experiments to further test the theory. Faith is not a trusting in unprovable truths which can be disregarded as a rational picture develops; it is, rather, illumination (which guides one in seeing a pattern) by which a truly rational understanding can begin.

## A UNIVERSAL FAITH STRUCTURE

The great Dutch theologian, Abraham Kuyper, argued that faith is a structural part of universal human nature. Mankind is divided by the possession or non-possession of saving faith in God but not in having faith itself—saving faith is a part of a more general faith-structure inherent in all human nature. The very fact that this faith-structure is universal in character makes it elusive as it is taken for granted and not looked for critically.<sup>10</sup>

Kuyper defines faith as

that function of the Soul by which it obtains certainty directly and immediately, without the aid of discursive demonstration.<sup>11</sup>

It is this capacity to "see" certainty, argues Kuyper, that enables one to trust his senses (or extensions of his senses) in making observations. It is by faith that we accept our sensory responses as being consistent with what is observed, i.e., a one-to-one correspondence exists between the actions of the observable and our sense responses. Even more basically, it is by faith that we accept our senses as reacting with real observables and not merely recording figments of imagination existing only in our minds.<sup>12</sup> Thus the process of observation, a basic component of science, is grounded in a faith-structure.

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*Faith is not a trusting in unprovable truths which can be disregarded as a rational picture develops; it is, rather, illumination (which guides one in seeing a pattern) by which a truly rational understanding can begin.*

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Kuyper in linking a faith-structure to science goes much further. He states with respect to formulating the general from a finite number of tested phenomena:

the idea itself that there are such laws, and that when certain phenomena exhibit themselves, you are certain of the existence of such laws, does not result from your demonstration, but your demonstration rests, and in the end it appears the means by which your certainty is obtained. Without faith in the existence of the general in the special, in laws which govern this special, and in your right to build a general conclusion on a given number of observations, you would never acknowledge such a law.<sup>13</sup>

It is an act of faith to generalize from a limited number of observations that is the central motivation for doing scientific work; for scientists must necessarily work from only a finite number. It is my view that faith in this generalization process is intimately related to faith that a rational order exists in all of nature and that such order can be comprehended by rational beings.

**FAITH—A SUBJECTIVE CATEGORY OF HUMAN EXPERIENCE**

A more detailed analysis of the presence and validity of faith as a subjective element of reality is appropriate at this time. Note that to recognize faith as subjective experience is not to downgrade it to mere subjectivity, for faith comes about in an encounter with real objects (a faith statement!). In theology, faith arises and is necessary to interpret specific historical events of the past and to understand the existence of a living church today with people who have had religious experience, whose lives have been altered in a manner clearly observed by others. In science, faith stems from and is needed to understand specific observable phenomena. It is, I believe, of some significance that the nature and validity of subjective faith experience has been most elegantly discussed by two men who have made significant contributions in the natural sciences—Blaise Pascal and Michael Polanyi. Accordingly, their contributions which bear some striking parallels, are now examined.

**Blaise Pascal**

Pascal viewed all of reality as possessing a hierarchical structure. Reality was structured in ascending orders and the distinction between orders was not merely quantitative, but qualitative.<sup>14</sup>

An excerpt from what has become known as “Pascal’s Doctrine of the Three Orders” will make this clear.

. . . All bodies, the firmaments, the stars, the earth and its kingdom are not equal to the smallest gleam of intelligence: for it knows them and itself and they know nothing.

All bodies and all minds together, and all their products are not equal to the slightest stirring of charity. That is of an order infinitely more exalted.

From all bodies together we cannot obtain one little thought; that is impossible and of another order. From all bodies together and from all minds together we cannot derive one movement of true charity. This is impossible, of another order, supernatural.<sup>15</sup>

In order to comprehend this order of charity, that part of reality where God through his Spirit is present in an open way, a human faculty qualitatively different from analytic reason is needed. This faculty, which is essentially faith through which man experiences God’s presence, Pascal calls the heart.

The heart has its reasons, which reason does not know. We feel it in a thousand things. I say the heart naturally loves the Universal Being, and also itself naturally, accordingly as it gives itself to them; and it hardens itself against one or the other at its will. You have rejected the one and kept the other. Is it by reason that you love yourself?<sup>16</sup>

Pascal further points out that

The knowledge of God is very far from the love of Him<sup>17</sup>;

purely intellectual inquiry yields an incomplete picture of God, one must comprehend God with more than analytic detachment. The heart, trust or faith in God’s eternal sovereignty, goodness, and love is required to begin to analyze His nature and acts. Pascal does not limit the heart, man’s faith function, to perception of the order of charity, however:

We know truth, not only by the reason, but also by the heart, and it is in this last way that we know first principles; and reason which has no part in it, tries in vain to impugn them . . . For the knowledge of first principles as space, time, motion, number is as sure as any we get from reasoning and reason must trust these intuitions of the heart, and must base them on every argument. (We have intuitive knowledge of the tridimensional nature of space, and of the infinity of number, . . . Principles are intuited, propositions are inferred, all with certainty, though in different ways.)<sup>18</sup>

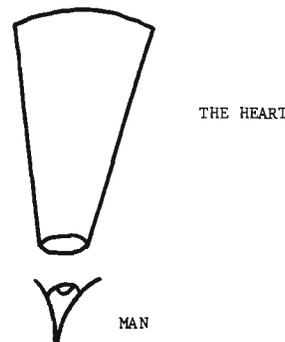
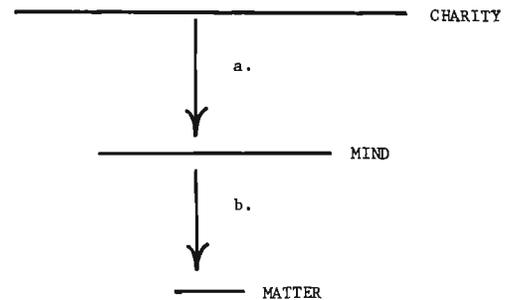


Fig. 1. Pascal’s World View. (a) Understanding of ultimate significance (b) General understanding.

Thus, Pascal observes, the heart, that faith-function which uniquely perceives the structuring of God’s spiritual realm also plays a significant role in perceiving God’s structuring of physical reality. Pascal is saying that there is a component of the innermost parts of reality that is intuitively recognized and cannot be defined. Definition eludes us as we have not reached such a fundamental level of reality that other terms do not exist to make a definition. Nevertheless, understanding is possible, as the great clarity of these

key concepts is recognized by the intuitive part of our nature. Albert Einstein and Blaise Pascal are in complete accord in recognizing that intuitive processes and not merely logic alone are required to understand physical reality.

Figure 1 summarizes Pascal's world-view. Man, through the "telescope" of his faith-function, the heart, begins his comprehension of the basic structure of reality. Reality is arranged in a threefold hierarchical framework, full awareness of an upper level being required to understand the significance of a lower order. Our world of men and things is paradoxically filled with rational and beautiful coherence in the midst of confusion and even chaos. Only by possessing the ethical and moral strength to work hard under difficult conditions, to ignore frustrations and report data accurately, and, finally, not to lose one's conviction that rational laws guide the universe, can scientific and human progress be made. Pascal envisions such strength coming to man as he opens his heart, i.e., responds in faith to that ultimate realm of God's self-giving love; it is in this realm that God, the source of all rationality, reveals himself fully as creator, sustainer, moral judge, redeemer, and loving father of all. A basic comprehension of the order of charity does not depreciate the realms of mind and matter, rather it enables one fully to see God's love in His mental and material creations. Such insight motivates man to use the God-given order present to care for and regulate these realms for good. In an analogous but qualitatively different manner, the realm of the mind understands and regulates the material universe. Also note that Pascal clearly states that one cannot go in reverse order: matter leading to understanding of mental processes, which in turn lead to self-giving loving relationships between people and things. Nor can a denial of reality above material and mental existence lead to a complete world-view. Pascal's legacy to us is not a philosophical system but a vision that a basic structure exists in a complex universe. From a comprehension of this structure, which sees reality as far more than a reduction to physics and chemistry, we can order and regulate our understanding and our lives.

### Michael Polanyi

Blaise Pascal was a man of wide interests: he made important contributions in mathematics, science, philosophy, urban transportation (he introduced the concept of public bus-like transportation to Paris), and religion. A man of equally wide interests in our day, who has significantly contributed to physical chemistry, social science, and philosophy, is Michael Polanyi.<sup>19</sup> Polanyi, reacting to the reductionism of extreme objectivism, has extended Pascal's insight in the validity of intuitive or faith statements. In the words of a reviewer of his classic book, *Personal Knowledge*<sup>20</sup>:

. . . By stressing the active components in scientific knowing—appraisal and commitment—Polanyi shows that knowledge is less 'objective' more complex, and more widely distributed in nature than is tacitly supposed by most epistemologies. Knowing implies a

foundation in skills, a confidence in one's ability to judge beyond the range of well-formulated rules, and a commitment to the existence of an answer to one's questions before the answer is in sight.<sup>21</sup> (Such a commitment is part of the basic structure of faith.)

Polanyi's central thesis is that knowledge does not exist without knowers; the extreme objectivist's impersonal theory of science is a myth. Extreme objectivists claim that:

- a) All observable processes can be evaluated by impersonal, scientific judgements—only empirical verification by the five senses (or extensions thereof) is conclusive;
- b) science possesses a method which is essentially automatic and infallible; and
- c) all knowledge other than scientific is not valid.

Polanyi refutes these objectivist tenets in great detail in *Personal Knowledge*, a key part of which is an analysis of the question: How does one make a new discovery? Polanyi argues that the history of science shows that discoveries come about not by just an ordering of empirical facts, but by a scientist committing himself to a framework in order to learn. A motivating part of such commitment is the faith that rational beauty exists in nature.

Einstein's creation of the theory of special relativity is a good example of Polanyi's analysis.<sup>22</sup> The textbook story is that Einstein developed relativity to satisfy the Michelson-Morley experiment's results that the vacuum speed of light remains constant independent of the motion of the earth. Polanyi, through an examination of Einstein's papers and by personal correspondence with him, shows that a commitment to the framework that nature's behavior is symmetric with respect to uniform motions led him to abandon the concept of absolute space-time and postulate the universal constancy of the vacuum speed of light. Not empirical facts, but a strong faith that rational beauty exists in nature's laws (as expressed in this case by symmetry or in variance principles) motivated Einstein to create relativity theory. Polanyi's case is enhanced by the historical evidence that the scientific community generally ignored the results of a long series of Michelson-Morley type experiments (1902-1926), performed by a distinguished physicist, D. C. Miller. These results indicated a small change in the vacuum speed of light but scientists were so committed to the new rationality of the Einstein world-view that little attention was paid to these experiments, as it was hoped the behavior would turn out to be wrong or explainable by a combination of small effects. Faith in the beauty and rationality of a theory, its ability to simply and coherently relate a wide range of phenomena, is seen to be a criterion of truth that scientists consider valid; empirical results are not the sole criteria of scientific truth.

Polanyi's insight is further born out by Einstein's statement that:

A conviction, akin to religious feeling of the rationality or intelligibility of the world, lies behind all scientific work of a high order.<sup>23</sup>

The following quotes make abundantly clear that this conviction or faith is common experience to those who have made great discoveries in science. Max Born, one of the early developers of the quantum theory, said of relativity:

the grandeur, the boldness, and the directness of the 'thought' of relativity, which made the world-picture of science 'more beautiful and grander.'<sup>24</sup>

Paul Dirac, who united quantum theory and relativity, said about Schrödinger's development of his wave equation:

I think that there is a moral to this story, namely that it is more important to have beauty in one's equations than to have them fit existing experiment.<sup>25</sup>

And as a final example, James Watson, referring to his and Crick's discovery of the double helix structure of DNA, said

. . . too pretty not to be true.<sup>26</sup>

Terms like 'boldness and grandeur', 'beauty', and 'pretty' are clearly of the language of faith and not of the language of probability distributions<sup>27</sup> and strict empiricism.

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*Life can thus be envisioned as a whole hierarchy of principles related to one another by boundary conditions, each level utilizing the principles of the levels below it, while being irreducible to those principles.*

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It is not possible to provide here a full survey of the creative, coherent, and exhaustive research present in *Personal Knowledge*. A small segment has been given of the approach; the book must be read in detail to be fully appreciated. Let me now simply restate and examine possible consequences of the main theme of the book. That knowledge cannot exist without knowers leads to the recognition that all knowledge depends upon personal, tacit components. These tacit skills are built into the knowers. We know much more than we can tell to others in a strictly objective way. The presence of these personal, tacit skills are more readily acknowledged in some cases, i.e., the learning processes that result in a gifted pianist stems from intimate personal contact with a master musician.<sup>28</sup> And the skills imparted of "touch" and "feel" for great music are not defined but appreciated by one who has acquired from others the tacit skills to appreciate great music. But even in the so-called purely objective fields of the pure sciences, knowledge possesses a personal, tacit component, for the knower is making a confirmation of his framework

—he is by faith trusting in the soundness of it, using it to break out into new reality. In the last analysis knowledge is always accompanied by a committed knower.

Although not pursued by Polanyi, the personal character of all knowledge is of significance from a Christian perspective. Jesus Christ pointed to Himself as truth and emphasized the primary importance of personal relationships between God and man, man and man. He also stressed that a personal faith is essential to a true relationship to God and He praised those who responded in faith without complete factual details.<sup>29</sup> St. Paul continued Christ's message, pointing to Him as the personal creator and sustainer of all reality, who calls us to commitment to Him as our Savior and Lord. Personal response by faith to God is central to Christian teaching, and part of that teaching is St. Paul's observation that God's presence can be seen in what he has created.<sup>30</sup> Perhaps part of the meaning of the last teaching of St. Paul is that God, the author of all order, who calls us to a full and complete knowledge of Him by personal response and relationship, has structured all of reality in such a way that a personal response and commitment is necessary to acquire valid knowledge.

In analyzing Pascal's and Polanyi's insights into the validity of faith-experience, it is of some interest to note that both men's world-views are characterized by some striking similarities—for both see reality as structured in a hierarchical manner. Polanyi's world-view is presented with great clarity in a recent paper, *Life's Irreducible Structure*.<sup>31</sup> Polanyi begins by examining how a machine works:

So the machine as a whole works under the control of two distinct principles. The higher one is the principle of the machine's design, and this harnesses the lower one, which consists in the physical-chemical processes on which the machine relies.<sup>32</sup>

The structure of the machine thus serves as a boundary condition harnessing the physical-chemical processes on which the machine relies to carry out meaningful functions. To Polanyi, a living organism can be looked in a similar way for:

. . . the organism is shown to be like a machine, a system which works according to two different principles; its structure serves as a boundary condition harnessing the physical-chemical processes by which its organs perform their functions. Thus, this system may be called a system under dual control.<sup>33</sup> (The system is under the control of both the harnessing boundary condition and physical-chemical laws.)

Polanyi then points out that a very important consequence of the boundary condition concept is that:

. . . their (the boundary condition's) structure cannot be defined in terms of the laws that they harness. Nor can a vocabulary determine the content of a text (a boundary condition on the vocabulary), and so on. Therefore, if the structure of living things is a set of boundary conditions, this structure is extraneous to the laws of physics and chemistry which the organism is harnessing. Thus, the morphology of living things transcends the laws of physics and chemistry.<sup>34</sup>

Fulfillment of these views is seen in what we have learned of the nature of the basic building block of life—the DNA molecule. The DNA molecule carries in its structure a code, a linear sequence of items which convey information. The order present in the DNA molecule is that of a boundary condition, it conveys information and acts as a blueprint for the development of the living organism. This order is qualitatively different in character from the order present due to physical-chemical forces acting in a crystal structure; the latter is merely that of a repeating structure, while the former carries distinct information content. Once having established the conceptual validity of the boundary condition framework with respect to DNA and living organisms, Polanyi argues that:

The irreducibility of machines and printed communications teaches us, also, that the control of a system by irreducible boundary conditions does not *interfere* with the laws of physics and chemistry. A system under dual control relies, in fact, for the operation of its higher principle on the workings of principles of a lower level, such as the laws of physics and chemistry. Irreducible higher principles are *additional* to the laws of physics and chemistry.<sup>35</sup>

It is quite possible, therefore, to expect that there are *additional* and *transcending* principles above those that directly guide physical-chemical laws. Life can thus be envisioned as a whole hierarchy of principles related to one another by boundary conditions, each level utilizing the principles of the levels below it, while being irreducible to those principles. To give a specific example, Polanyi points out that

. . . once it is recognized, on other grounds, that life transcends physics and chemistry, there is no reason for suspending recognition of the obvious fact that consciousness is a principle that fundamentally transcends not only physics and chemistry but also the mechanistic principles of living beings.<sup>36</sup>

. . . a boundary condition which harnesses the principles of a lower level in the service of a new, higher level establishes a semantic relationship between the two levels. The higher comprehends the workings of the lower and thus forms the meaning of the lower. And as we ascend a hierarchy of boundaries, we reach to even higher levels of understanding.<sup>37</sup>

The similarity to Pascal's "Doctrine of Orders" is immediately evident; the great difference occurs on their views of the possibility of gaining insight of a higher level from lower levels. Pascal denies this possibility completely, whereas Polanyi feels the integration of principles of the lower levels to yield a higher principle may be beyond our powers. Both Pascal and Polanyi clearly acknowledge that faith is a valid component of all knowledge. They have clearly recognized that all forms of reductionism, the reducing of all reality to physical-chemical laws for example, deny other points of view, partly by their own misguided faith. (Reductionists usually fail to recognize that faith plays a role in their own work.) Reductionism's great appeal is its simplicity and great rational order. What Pascal and Polanyi have sought, therefore, is a world-view that testifies both to the existence of great rational order inherent in all reality and to the

openness and complexity of a reality in which the person through his faith is an intimate part. In my opinion, a hierarchical structure, with its ascending levels of reality each governed by unique principles, provides a world-view that serves these twin purposes well. Such a framework could do much to overcome the great cleavage between the extreme positivist and existentialist poles into which our age has divided itself.

## CONCLUSIONS

The scientisms of our age have presented to us the distortion of faith as the height of irrationality. Some Christians have reacted by completely compartmentalizing their perspectives of the spiritual and the natural orders. Others, perhaps repelled by the very radical nature of the Christian solution to life's dilemma<sup>38</sup>, have tried to build a 'Christianity' without the necessity of faith. Such attempts, to my mind, are reactions to a very faulty picture of faith. Faith, correctly viewed, is that illumination by which true rationality begins, as has been seen through history by men the caliber of Augustine, Pascal, Kuyper, and Polanyi. Faith, the capacity to trust, is inherent in human nature and is an integral part of all personal relationships. As we have seen, this deeply personal element is a component of all knowledge. Faith as a guide to a rational understanding can be viewed as a direct consequence of the biblical insistence that in Christ, who stressed the ultimate importance of personal relationships, "all things hold together."<sup>39</sup> The willingness of a scientist as distinguished as Polanyi to present to the scientific community a viewpoint which is unpopular, should give Christians courage in developing a world-view in which faith plays an integral role. Only such a world-view can do full justice to the great richness, complexity, and order present in all of reality which is far wider and more comprehensive than we can imagine. Truly the more we know, the more we come to realize how little we really do know.

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<sup>38</sup>"For the word of the cross is folly to those who are perishing, but to us who are being saved it is the power of God." I Corinthians 1:18.  
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## Research, A Key to Renewal\*

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*It is the purpose of this paper to make a plea for additional research into the operational life of the church, to describe the type of information and research center that might be useful in carrying out such research, and to describe briefly the work of the Missions Advanced Research and Communication Center in Monrovia, California.*

### THE NEED FOR APPLIED RESEARCH

It is paradoxical that the Protestant church, and in particular, the American Protestant church, has lagged in doing systematized research on the effectiveness of its own operations. In a society which is characterized by its emphasis on feedback and its glorification of the new and changing, little has been done descriptively to place the church in the society in which it finds itself. This applies not only to those church members and leaders who come out of a nonscientific background, but it is also true for that part of the scientific community which calls itself

Christian. A review of ASA Journals of the past few years adequately makes the point. There is considerable concern for a scientific approach to geology, anthropology, linguistics, and the nature of man. There is a good amount of discussion about the spirit and the body of man. But in this writer's view, there is a dearth of discussion about the church and how it is operationally to face the world in which it finds itself.

The explanation for this is manifold. In a paper prepared for the March 1967 edition of the Journal, I attempted to trace one cause of secular/spiritual dichotomy back to the initial split in the church caused by the introduction of the Darwinian theory into scientific teaching. It is also a reaction against the

\*Paper presented at ASA Convention, Calvin College, Grand Rapids, Michigan, August 23, 1968.

preoccupation of the "liberal" wing of the church with the social salvation of mankind. (Even here we find very little research into what the church is really accomplishing and what is its impact in the world.) A third explanation for this operational separation between the church and its society lies in an inadequate theology of creation and of man. The result is a modern version of gnosticism in which the world is equated with worldliness and the operation of the church is viewed from a spiritual (other worldly) view.

But the church is, after all, a social organization—a social organization hopefully designed to interact with all the social systems that surround it. It is purposeful in its nature. Paul's model of the human body as a description of the church is much closer to the systems engineer's description of life than that of the organization chart mentality which is so prevalent in many ecclesiastical organizations. The total system called "the body" is made up of a large number of subsystems—circulatory, respiratory, digestive, nervous—all of which must operate properly for the health of the entire body. If one attempted to draw an organization chart for this body, instead of the typical pyramid which is the favorite of most organizational leaders, we would find a broad-based rectangle with a single head dominating the whole.

God has placed His church in the world to carry out His will. Even as we state this, we should face the fact that the Bible places two contradictory facts side by side. On the one hand, we have a clear description of the fact that through man's preaching of the good news, God puts men right with Himself. It is left up to man. On the other hand, we have the many statements that *God* will bring men to Himself. He will bring glory to Himself. He needs no man. It is my personal opinion that carrying these two concepts in tension through life is part of what faith is all about. When we try to understand what motivates men's hearts, when we seek to find better information and communication systems with which to impart the good news, when we try to create feedback systems which will help us to measure our own effectiveness, we are not trying "to do the work of the Holy Spirit," but only acting under God with the tools that He has placed in our hands.

The life of the church is filled with organizations devoted to missions of one type or another—evangelism, social concern, schools, medical assistance, all types of social welfare programs. More than 500 Protestant North American mission agencies have some 35,000 missionaries overseas. Somewhere between \$300 million and \$400 million is invested yearly in overseas missions. Over one billion dollars is spent each year in the United States for the construction of church buildings. And yet it is doubtful that more than \$200,000 a year is being spent by the entire Protestant church in trying to uncover God's strategy for today's world—to carry out the type of applied research that most of the people in this audience are convinced is a vital part of life and progress.

Here are some illustrations: Between 1925 and

1967 there was no comprehensive encyclopedia of Protestant missions printed in the world. The Missionary Research Library, which was begun in 1914 with such high purpose, soon lost the support of the mission organizations who helped found it. A great many books have been written by missionary theologians in an attempt to define the purpose of "missions" or "mission" or "evangelism," but even within vital mission associations there has been little meaningful analysis of total strategy. Not one large mission organization in twenty has assigned anyone to do applied research of the kind most organizations find imperative to their very life.

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*It is almost as though it said somewhere in the Bible that when one considers the task of evangelizing a lost world, one should switch to a completely nonrational approach to the problem.*

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The average churchman, missionary committee member, and even some mission executives, have only scant knowledge of which organizations are working where. In Latin America the Pentecostal church is growing many times faster than the population. In the Naga Hills of Assam, India, the Nagaland church believes that all of the people of that area have been evangelized. In Indonesia the growth of the church is phenomenal. In Thailand Christianity has had no effect after a hundred years of evangelization. In Japan the church is viewed as something outside the Japanese culture and of little importance to that country. Yet, few people are asking "Why?" and even those with normally scientific approaches to problems are willing to "leave it in the hands of the Holy Spirit." This is equally true of the work which they are personally supporting. It is almost as though it said somewhere in the Bible that when one considers the task of evangelizing a lost world, one should switch to a completely nonrational approach to the problem. Let me be quick to say that I am making no brief for some mechanistic solution to the task of the church or the problems of the world. If a strong case can be made for applied research in the church, it is only because of the tremendous imbalance that now exists.

There is a need for a network of socioreligious research centers around the world which will "tell it as it is," as the young people say, and which will act as switching points for information between those who are involved in the task of the church. The Roman Catholic socioreligious research centers have been brought together in a loosely knit organization known as FERES (International Federation of Institutes for Social and Socioreligious Research). They have been boldly examining their own program, reviewing the work of both the Catholic church and the Protes-

tant church. The work is carried out at a high academic level with good documentation. It is available to all who are interested. There are also a number of isolated Protestant research centers around the world. Some of these are engaged in purposeful applied research, others are operating at what might be considered a solely theological level. As far as we know, the Missions Advanced Research and Communication Center, which is a division of World Vision International in Monrovia, California, is the only Protestant organization in the United States that is attempting to specifically apply today's tools of research and today's information and communication systems to the work of the church worldwide.

### WHAT TYPE OF RESEARCH CENTER?

How would one describe an ideal Christian research center?

- 1) First, it should *be goal oriented*. It should have thought through the ultimate theological reasons for its existence, and should then be judging the worth of its present and anticipated programs in light of this goal.
- 2) Second, it should *enter the problem at an operational level* with a problem solving approach.
- 3) Third, it should be *able to communicate* with and operate within not only the academic community but also the ecclesiastical and the industrial.
- 4) Fourth, it should be *able to articulate the results of its research*.
- 5) Fifth, it should be *at home with all the tools* of industrial, social, and psychological research.
- 6) Sixth, and obviously most important, it should be *staffed by men competent in their callings* and dedicated to bringing their skills and energies to bear for the glory of God.

What kind of staff is needed? This, of course, is dependent on where it begins. However, there is a synergistic quality about research teams. The right combination and content of skills and personalities produces results far beyond the sum total of the parts. It accomplishes little to put one good man to work unless you plan to support him. Sociologists, social anthropologists, information theorists, systems engineers, computer analysts, long-range planners, operational managers, theologians—men who love God and righteousness and are willing to be honest with the past and truthful for the future—are all needed.

### THE MISSIONS ADVANCED RESEARCH AND COMMUNICATIONS CENTER

MARC has officially been in operation for over two years. Let me describe some of our programs:

- An in-depth survey of the 9200 delegates to the IVCF triennial missionary conference at Urbana, Illinois. Done in association with the Fuller Theological Seminary Schools of Psy-

chology and World Mission, this study promises to provide new insights into the motivations of Christian youth with a view toward leading them to Christian service.

- The design of an action/motivation probe for the local church. By using a standardized question format we are able to provide the local church with a low-cost analysis of its membership.
- An information study of the country of Brazil. More than 2600 missionaries have been queried as to their goals and accountability. Statistics on local church growth over a ten-year period for every Protestant, Roman Catholic, and spiritist congregation are being analyzed. A directory of all mission agencies operating in Brazil has been compiled. A survey of church-related institutions in Brazil is now under way.
- A joint project with the School of World Mission at Fuller Theological Seminary surveying factors present in the conversion experience and in the spiritual maturing of Christians. A computer analysis program is available and the approach is being refined.
- A survey of some 1600 religious organizations on their use of electronic data processing.
- A survey of information systems in the local church and the role of the computer in making the church more effective in its ministry.
- The computer assembling of a new directory of *North American Protestant Ministries Overseas* for the Missionary Research Library with data on most U.S. and Canadian mission agencies and their fields of operation.
- The beginning of a computerized abstracting and information retrieval service for current mission research.
- The publication of various papers dealing with technical planning and a systems approach to the mission task of the church.
- The establishment of ties with others involved in socioreligious research.

We are not interested in becoming *the* great Protestant research and communication center in the U.S. We are interested in becoming a model for applied research operations in many other Christian organizations.

### CONCLUSION

God has entrusted some men with skills and training particularly suited for the needs of His church. When we understand that these are to be used for His glory, then renewal of His church will begin.

Research is one key to that renewal.

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# The Three-Storied Universe

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*The Bible assumes that the universe consists of three stories. The top story consists of a hard firmament which serves to divide a part of the primeval ocean from the other part of that ocean which is on the earth. The middle story, the earth, is where flesh and blood men live. The bottom story, Sheol, is where the souls of the departed live.*

*The firmament is hard, not gaseous. This is evidenced by the etymological meaning of the Hebrew word for firmament, the logic of the case, the ease with which Moses could have described a gaseous firmament had he so desired, Biblical cross references, and the absence of any evidence to the contrary.*

*The earth is presumably, but not necessarily flat.*

*The bottom story is not just figurative language for the state of the dead, nor is it simply equivalent to the meaning of "grave". It is, as we see in Numbers 16:30-33, I Samuel 28:8-15, and elsewhere, the subterranean realm of the dead.*

*The Bible assumes that the universe is three-storied; but, we do not believe that Christians are bound to give assent to such a cosmology, since the purpose of the Bible is to give redemptive, not scientific truth. The relationship of science to Scripture is this: The Bible gives redemptive truth through the scientific thoughts of the times without ever intending that those scientific thoughts should be believed as inerrant.*

## INTRODUCTION

It seems to the author that the three-storied universe as it is found in the Bible serves as an object lesson to those who would like to know the relationship between science and the Bible. It would serve even better, however, if more people could see this Biblical cosmology.

It seems that in reaction to unbelief, the current shibboleth of would-be theological orthodoxy is, "The Bible is inerrant whenever it touches on matters of science." We find this doctrine to be *a priori*, a doctrine that is read into the teachings of the Bible, rather than derived from it by legitimate exegesis. Not that we will here undertake to show how illegitimate the exegesis has been that buttresses this *a priori* doctrine. Rather, we only seek to demonstrate that the Bible portrays a three-storied universe, a cosmology which any modern man will reject as being scientifically erroneous.

The three-storied universe is a cosmology wherein the universe is conceived of as consisting of three stories. The ceiling of Sheol, the bottom story, is the surface of the earth. The surface of the earth, in turn, is the floor of the middle story. The ceiling of the earth, the middle story, is the firmament with its contiguous heavenly ocean. This firmament with its ocean is, in turn, the floor of the top story, heaven.

## THE UPPER STORY

### The Solid Firmament

As to the upper story, one big point of dispute is the meaning of "*raqia'*", the firmament that God created to divide the waters above and below it (Genesis 1:6). Though standard Hebrew lexicons have defined "*raqia'*" as "solid vault of heaven", some conservatives have argued, perhaps from the cognate verb, *raqa'* (beat out, spread out), that we may translate "*raqia'*" by the word "expanse". There is some

truth in this.

Since metal spreads out when it is beaten, the verb "*raqa*'" can be translated "spread out": (Ex. 39:3; Isa. 40:19; Jer. 10:9); and the meaning "spread out" can be used in virtual independence of the meaning "beat out": (Ps. 136:6; Isa. 42:5; 44:24). If this is so, why not translate "*raqia*'" by the word "expanse"? We are not at all adverse to this translation.

But, having translated "*raqia*'" by "expanse", one has by no means changed the biblical assumption of a three-storied universe. There is nothing in the translation "expanse" that denies the solidity of that expanse. The connotations of airiness and non-solidity which tend to accompany the word "expanse" when used in Genesis 1 cannot be admitted. An "expanse" is simply something that is spread out over a wide area: (Webster's Third International Dictionary). Thus, it is said that the earth is an "expanse": (Isa. 42:5; 44:24), just as the firmament is an "expanse".

To say that the firmament in the Bible is an "expanse" is not to say that it is not solid. Bear in mind that the meaning "spread out" for the cognate verb "*raqia*'" would never have arisen unless the idea of beating or pounding something solid had come first. The meaning "spread out" is derived from the more basic meaning "stamp" or "beat out". The metal only spreads out after and because it has been beaten. Had the concept of solidity not been tied to "*raqia*'", the concept of expanse would not have arisen.

This historical etymology of "*raqia*'" and "*raqa*'" does not absolutely prove that "*raqia*" in Genesis 1 is solid, but it does give an initial presumption to the idea that "*raqia*'" is solid.

More directly, we find it only logical that the firmament be hard or solid in order to fulfill its purpose of serving as a divider of the primeval ocean (Gen. 1:6), carrying the water above on its back (Gen. 1:7). It is impossible, by the nature of air and water, for an empty, airy, ever-continuing expanse to serve as a divider for a body of water. A part of a primeval ocean may be made to settle above or beyond a solid wall, a solid dome acting as a divider; but, place a part of a primeval ocean "above" or "beyond" (that is the Hebrew word) a gaseous or vacuous expanse, and you find that the ocean immediately makes itself at home "in" the expanse, not "beyond" it. That is, it is self-contradictory to talk of water being "beyond" an empty or gaseous expanse; for if it is "beyond" the expanse, "beyond" the firmament, where is it? The only place the water could be on the airy, atmosphere "expanse" view would be "in" the firmament, not "beyond" it, as the text requires.

On the non-solid definition of the firmament, one has to cease talking about "beyond" the firmament. That is, one has to cease talking about the text. One has to give up the Bible's statement (Gen. 1:7) if he defines firmament as non-solid. We, therefore, reject the definition of firmament as a non-solid expanse; because such a definition immediately involves one either in a self-contradiction or in a demand that Genesis 1:7 be excised.

### Other Passages

Besides these considerations, the one passage where the nature of a firmament (*Raqia*') can be determined with certainty, Ezekiel 1:22-26, shows us a firmament that is solid. Keil comments that the description of the firmament in Ezekiel 1:22 is based on Exodus 24:10. If so, since Exodus 24:10 describes a solid firmament (and we see Genesis 24:10 as adding more strength to our case for a solid firmament), Keil means that the firmament in Ezekiel 1:22ff. is also solid. We need not doubt, however, that this was his understanding, for he adds, "Under the canopy were the wings of the cherubim . . . spread out . . . so that they appeared to support the canopy." He goes on to show, however, that contrary to appearance, the wings did not support the canopy, "but only were so extended, when the cherubim were in motion, that they touched the canopy."

Hengstenberg called the firmament in Ezekiel 1:22 a "vault", under which are the cherubim; and "God's throne stands upon the vault."

Other commentators could be cited: but, without laboring the point further, the consensus of commentators is that the firmament (*raqia*') in Ezekiel 1:22-26 is a solid firmament. This adds presumptive evidence to the idea that the firmament in Genesis 1:7 is solid.<sup>1</sup>

### Alternative Words

To add yet more evidence, we note that if Moses had wanted to convey the idea of empty space as separating the water above from the water below, he could easily have used a word or phrase that does not suggest solidity like "*raqia*'" does. He could have spoken of separating (*badhal*) the waters above from the waters below, without mentioning the creation of a firmament to do this work. Or, he could have spoken of putting room (*maqom*) or space (*rewah*) as in Genesis 32:16 or space (*rahoq*) as in Joshua 3:4 between the two bodies of water. Moses was certainly not forced to convey a false impression because of the limitations of his language.

There are probably other ways also that the idea of a non-solid divider between the two bodies of water could have been conveyed. But, instead, we read of a "*raqia*'", which leads one most naturally to think of something solid. The LXX accordingly translates "*raqia*'" by "*stereoma*" (solid body). The Vulgate translates with "*firmamentum*"; and most English translations have "firmament".

### Job 37:18

There is yet another verse of Scripture (for we would interpret Scripture by Scripture) that dramatically establishes the solidity of the firmament. We refer to Job 37:18, "Can you with him spread out (*raqa*') the sky, strong (or hard) as a molten (cast metal) mirror?"<sup>2</sup> Here in the context of ancient Near Eastern thought, the sky is compared to a metal mirror. The point of comparison between the sky and the mirror is specifically the hardness of the metal.

There is no escape here in saying that the passage is poetical, for the simile (the poetry) would be incongruous if the mirror were hard, but the sky gaseous. (Old Testament passages referring to heaven as a curtain or tent have reference to the "stretched-outness" of heaven and disprove nothing as to its solidity.) And, even if this reflection on the hardness of the sky is not God speaking revealed truth, but only Elihu; the passage still throws light on the ancient Near Eastern conception of the firmament in Genesis 1. Nor do we ever find any revelation of God that suggests that the firmament is not solid.

### Waters Above the Firmament

Parenthetically, let us add a few words about the water above the firmament since it has been the source of rather imaginative solutions to the science-Scripture conflict. In the first place, there is no evidence that the water is a mist or fog. It is rather an ocean. The deep (*tehom*) of Genesis 1:2 is divided in Genesis 1:6,7 into two bodies of water. The body of water below forms the earthly sea (Genesis 1:9); and the water above, since it is the other half of the "*tehom*", forms a heavenly sea. Cf. Psalm 148:4. Thus, the sky above is blue; and the opening of the windows of heaven allows a great deal of water to be poured out on the earth. (Genesis 7:11)

Secondly, the water is *above* the firmament. (Genesis 1:7) Catastrophists and other science-Scripture harmonizers are forever putting this water below the firmament. This water, so far as the Bible is concerned, is on the far side of the sun, not between the sun and the earth.

Finally, this water does not as a whole condense or fall as rain either before or during Noah's flood. The heavenly ocean is still above the firmament in the time of the Psalmist (Psalm 148:4); and so far as the Bible is concerned, the water is still there.

### Other Evidence

Although extra-Biblical concepts are not absolute proof of what the Bible idea is, it is significant that the ancient world thought of the sky as a solid dome above the earth or as solid concentric spheres in which the heavenly bodies were implanted.<sup>3</sup>

But, apart from the ideas of the rest of an ancient world we think we have presented evidence sufficient to prove that the Bible has in view a solid firmament in Genesis 1:7. That is, when one adds the initial etymological presumption to the self-contradiction that arises when one defines the firmament in Genesis 1:7 as non-solid, to the definition of a firmament in Ezekiel 1 as a solid vault, to the ease with which Moses could have described a non-solid divider between the two bodies of water, to the normal translation of "*raqia'*", to the Near Eastern milieu as reflected in Job 37:18, to the complete absence of any hint anywhere that the firmament in Genesis 1:7 is not solid, one comes, without room for doubt, to the exegetically derived judgment that the firmament (*raqia'*) in Genesis 1:7 is, as standard Hebrew lexicons define it, "the *solid* vault of heaven."

One last word. It has been thought by some that since the "birds fly above the earth in the open firmament of heaven," (Genesis 1:20), the firmament must be mere airy expanse. However, the Hebrew of Genesis 1:20 when properly translated reads, "let birds fly above the earth before or 'in front of' the firmament." Genesis 1:20 when properly translated proves that the firmament is a solid plate, not a gaseous expanse. This is not to deny, however, that the space below the firmament is sometimes called "Heaven". This occurs *via* synecdoche, since the firmament is "Heaven" proper. (Genesis 1:8)

## THE EARTH

Transitionally, we may say that there is no way to prove that the Bible regards the earth as flat. There are some indications, however, that this is the case. In Matthew 4:8 one can see the whole world by climbing a very high mountain. In Daniel 4:11, a very high tree can be seen from the end of the earth. These passages cannot serve as definitive proof of anything, however, for the "earth" is often a limited concept in the Scriptures. Even when the "whole earth" is overspread by the sons of Noah, judging by Genesis 10 apparently neither the Far East nor the Americas are included.

## THE LOWER STORY

The lower story of the three-storied-universe is generally recognized as a geographical place, the abode of the dead. This place, Sheol or Hades, beneath the surface of the earth, is, however, disputed by some conservatives. They refuse to recognize that Scripture often regards it as a subterranean place. On the other hand, a few conservatives recognize what the Bible teaches and ask, Why not? The dead have to be somewhere. (Cf. E. R. Craven's excursus in Lange's commentary of the book of Revelation.)

It has been claimed by some that Sheol is just the grave. "Grave", no doubt, is the meaning in some passages, *e.g.*, Isaiah 14:11; Job 24:19, 20, and may even have been the original meaning; but this meaning falls short of covering all of the data. (Cf. Craven's excursus). It has also been claimed that Sheol is just figurative language. It stands for the state of the dead. It is not a geographical location. This explanation, as we shall show, also fails to cover all of the data.

### Dropping into Sheol

In Numbers 16:30-33, we see how literally and geographically Sheol could be to a writer of Scripture. In this passage the earth opens up and Korah and his associates and their material goods "went down alive into Sheol." Not just the men, but their goods as well dropped down into the subterranean place. This is not figurative; men do not enter alive into a state of death; nor is it easy to say that material goods enter a state of death.

We might illustrate the problem this way: On some occasion, one might, under the influence of biblical concepts, be led to use the figurative expression "drop into Hell." But even the existence of this expression would not lead a 20th century man in a historical document, to describe a godless person who fell into a fissure caused by an earthquake as a person who "dropped into Hell." Much less would one speak of material goods such as an automobile as "dropping into Hell" because it fell into a chasm caused by an earthquake. Just so, it is impossible that Sheol is a figurative expression for the state of death in the historical context of Numbers 16.

The meaning of "grave" in Numbers 16:30-33 has bare possibility; but, normally in a historical narrative like this, "qeber" would be used for "grave" if one wanted to say "grave." Also, "grave" connotes a more limited receptacle than the cavern here that receives this immense load. Then too, "grave" does not carry out the spirit of the passage, the dramatic fury of judgment that drops these rebels and all that they have into the "lowest pit". In short, "grave" would be a reductionist definition here.

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*The aim of the Bible is to give redemptive truth. It never intended to teach science; nor does it ever claim to be "inerrant whenever it touches on science." It does not correct the errant science of the times in which it was written, but rather incorporates that pre-scientific science into its redemptive message.*

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It is not the state of death nor the grave that is in view in Numbers 16, but the subterranean realm of the dead. And the picture could scarcely be drawn more clearly. The floor of the middle story opened up, and the men standing on it fell down into the bottom story. They did not "go down" figuratively, but literally. This is a sober, historical account, telling of literal men literally dropping into a literal subterranean Sheol, "So they and all that appertained to them went down alive into Sheol." (Not that God was mistaken. He accommodates Himself to current cosmology, as in Luke 16:22-26.)

### The Ghost of Samuel

The historical narrative in I Samuel 28:8-15 draws the same picture of a subterranean, bottom story, where the dead live. Saul asks the witch of Endor to "Bring me up whomsoever I shall name." Having gone to work, the woman says, "I see a god coming up out of the earth." And Samuel says, "Why have you disquieted me to bring me up?"

The narrative describes the spirit of Samuel as coming up from beneath the surface of the earth. (Cf. Job 26:15 "the shades below"), up through the surface of the earth (the ceiling of the bottom story) and ending up over the surface of the earth (in the middle story), asking why he has been brought up. (Note that this occurs at Endor, v. 7, not at Ramah where Samuel was buried, 25:1. Samuel does not come up from his grave, but from Sheol.) Regardless of whether or not the spirit is really Samuel, the picture of a subterranean realm of the dead could scarcely be more clearly drawn.

### A Subterranean Realm

Though the context is not as literally historical as in Numbers 16, Isaiah 14:9, "Sheol from beneath is moved for thee to meet thee at thy coming; it stirreth up the shades for thee, even all the chief ones of the earth.", paints the picture again of a subterranean realm of the dead. The shades live, as in I Samuel 28, beneath the surface of the earth, in the bottom story of the three-storied universe.

Along the same line, Amos 9:2 contrasts "digging into Sheol" with "climbing up into heaven." One cannot dig into a state of death, nor can a mere grave (even a 30 foot deep one, as one writer says) constitute a real contrast to "climbing into heaven". Sheol is far deeper than 30 feet. (Deuteronomy 32:22; Psalm 139:8) It is the opposite of heaven. "Deeper than Sheol" is opposed to "high as heaven" in Job 11:8. To read "deeper than a grave" is manifestly in error. Nor is "deeper than a state of death" a reasonable antithetical parallel to "high as heaven." As heaven is literally high, the only reasonable opposition is that Sheol is literally deep.

### CONCLUSIONS

We say then that the Bible presents a three-storied universe. But, must we accept this biblical cosmology as an article of faith? We think not. Rather we would say with Dr. Herman Ridderbos,

Not only does the Bible attach itself to human representations in general (for example, when it speaks of God's eyes, his nose, and so on), but in part it assimilates the human conceptions current during the time when the Bible was written. For example, it speaks on the basis of conceptions which people had concerning the structure of the cosmos (The cosmos was thought of as having three levels: heaven, earth, and the underworld. Cf. Phil. 2:10). No one would deny that these conceptions bear a character determined by their own time and, as such, are not binding even for a person who would subject himself to the Scripture as the Word of God. They are not binding because in these utterances the Bible would not give us a revelation or instruction concerning the structure of the cosmos. The aim of the Bible is quite different.<sup>4</sup>

The aim of the Bible is to give redemptive truth. It never intended to teach science; nor does it ever claim to be "inerrant whenever it touches on science." It does not correct the errant science of the times in which it was written, but rather incorporates that pre-scientific science into its redemptive message. It is left to man, to whom God has given the cultural man-

date (Genesis 1:28), and the common grace to fulfill it, to discover the truth about science.

In writing Scripture, God takes up science at the point to which man has developed it at the time of the writing. God does not give special revelation to help man fulfill the cultural mandate. His special revelation has to do with that which man cannot discover by his own efforts. His special revelation has to do with redemption.

This does not mean that one can lightly write off every science-Scripture conflict as being due to the culturally-related errancy of Scripture. Many Well-hausian "errors" have been punctured on the pointed facts of archaeology. But, the lesson the three-storied universe should teach is that Near Eastern thought forms are mixed into the Bible without demanding assent as articles of faith.

To insist that the Bible be inerrant every time it touches on science is to insist on an *a priori* doctrine that has been read into the Bible. This doctrine not only leads to intellectual dishonesty about such matters as the three-storied universe and to fighting against God as He is working through men called to be scientists, but it destroys faith in Christianity by implying that only obscurantists can be Christians.

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- <sup>1</sup>The defenders of a non-solid "raqia'" for Genesis 1:7 are at least under obligation to give proof of their definition; for silence cannot overthrow presumptive evidence.
- <sup>2</sup>On the word, "molten", cf. I Kings 7:16, 23 where the same hophal participle is used.
- <sup>3</sup>See the articles on "firmament" in *The Interpreter's Dictionary of the Bible* and in *Dictionary of the Bible*—William Smith, Vol. I, Part II.
- <sup>4</sup>Bultmann, pp. 28, 29. Modern Thinkers series. The Presbyterian and Reformed Publishing Company.

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# The Raven Speaks

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*Previous studies of the ostrich<sup>1</sup> and the eagle<sup>2</sup> in the Bible have evidenced the absolute authority and inerrancy of Holy Scripture when it speaks of bird natural history. Examination of Bible references to the raven (Corvus corax) also demonstrate that the Bible is in exact accord with science. Since the traits and habits of the raven are correctly described in Scripture and are simultaneously employed to portray lessons of a spiritual character, the Bible goes far beyond that which is required of a good science textbook. The Bible combines accurate science with correct philosophy and spiritual truth in such splendid fashion that an objective student can see it is the Word of God to man.*

## INTRODUCTION

Biblical and scientific facets of "raven behavior and the flood", "the raven after judgment", "the raven and its young", "ceremonial uncleanness of the raven", and "raven hiding habits" are of interest here.

### RAVEN BEHAVIOR AND THE FLOOD

While the waters were retreating from the land (Genesis 8:2-5) possibly Noah found himself enshrouded in the mist and vapor that probably billowed

across the waters following the great flood. His famous release of a raven and a dove (Genesis 8:6-12) may have been grounded in good knowledge of bird habits. Although symbolism and theological meaning are surely involved, Noah's action was neither pointless nor totally symbolic but rather seems to have been a skillful experiment in biometeorology. To appreciate such a possible motive, a knowledge of the raven's general habits and table matters is essential.

Ravens normally seek a home territory that is desolate and uninhabited:

"The higher and more inaccessible the cliff and the more barren and deserted the valley below the better suited are the ravens and the more freely do they soar and croak, flying singly or in pairs, up and down along the face of the cliff with spirited wildness that harmonized well with their background . . ."<sup>3</sup>

"The common raven, one of the most widely distributed birds in the northern hemisphere, lives in such dissimilar terrain as the waterless Sahara, the coniferous forests of Canada and Siberia, the sea cliffs of Western North America and Scandinavia, the tundra and the islands of the arctic sea. The common denominator, if there is one at all, seems to be wilderness."<sup>4</sup>

Writing of raven habitat preferences and flight patterns, one author indicated that the raven:

". . . is most abundant in rocky districts, near the banks of lakes and rivers, and is generally seen alone or in pairs, but sometimes in small flocks after the breeding season; the flight is rapid, elevated and protracted, often sailing for hours at a time at a great height;"<sup>5</sup>

Pearson has specified that raven nests:

". . . are all built in trees and never more than one pair of ravens breed on any one island."<sup>6</sup> (Pearson here referred to islands off the coast of Maine).

Alice Parmelee reported that ravens do not cower in the face of storms:

"With a wing spread of four feet and great strength and endurance, ravens survive where smaller, weaker birds perish. With their vigorous, steady wingbeats they can fly without rest for long periods of time, covering immense distances. Storms do not frighten them and they seem to enjoy soaring high in the face of an approaching gale and opposing its fury. As they circle higher and higher their keen eyes enable them to see for miles around."<sup>7</sup>

Since the raven is a bird of these extreme preferences, Noah wisely chose one to serve as an indicator of landscape after the flood. Perhaps he reasoned that if the raven returned, no land or perching sites were yet available. If it remained outside, then it had obviously discovered some lonely perch on which to alight between its long surveillance flights.

The feeding habits of ravens provide still more data on which to understand the actions of Noah:

"They are among the most omnivorous of birds, and being of a very hardy nature, they are able to find a sufficient food supply without migrating."<sup>8</sup>

"In the desert regions they eat dead jack rabbits and such other flesh, either fresh or putrid, as may be discovered . . . One may see Ravens any summer about the garbage piles back of some of the hotels in the Yellowstone and Glacier national parks. Here they come to share with the bears the refuse from the hotel kitchens . . ."

In the North Carolina mountains they are common residents in some sections. Here they come regularly to rural slaughter pens in quest of food."<sup>9</sup>

"It is truly omnivorous, but by preference carnivorous, eating small animals of all kinds, eggs and young birds, carrion, dead fish, mollusks, crustaceans, insects, nuts and berries. The European raven is reputed to destroy young rabbits and even lambs. It disgorges indigestible substances, as bones, hair and feathers, like birds of prey."<sup>10</sup>

"During the winter months they usually band together in large flocks and rove about more or less, visiting seashore, lakes or rivers in search of dead fish, or other food."<sup>11</sup>

Perhaps the lonely raven found itself at home among the carcasses strewn upon the bleak hillsides which emerged when the flood waters were draining from the land. The departing raven told Noah much about

the world which lay beyond the cloudy blanket covering the ark. Alice Parmelee paid a well-deserved tribute to Noah's use of a raven when she wrote:

"In selecting the raven as his first scout Noah made an excellent choice, for this 'black dweller of the mountain crags' is a powerful and unusually astute and resourceful bird, possibly the most highly developed of birds, and it can even be taught to utter a few words . . . As they circle higher and higher their keen eyes enable them to see for miles around. Because they have heavy beaks and can eat almost anything, including carrion, Noah's raven would have found enough to eat in the floating wreckage of a flooded world . . . Noah undoubtedly understood the habits of ravens and the bird's absence must have indicated to him that the flood was receding."<sup>12</sup>

But part of Noah's wisdom is seen in the selection of a bird to represent each extreme. The dove which was also released is not particularly carnivorous but usually subsists on seeds and grains, feeding less commonly on insects or snails. Pigeons raised on farms are allowed to fly and return at will. Doves in general prefer clean, dry, and sheltered conditions. The following advice is provided for anyone starting to raise pigeons:

". . . but pigeons should have as much liberty as possible with plenty of fresh air, light, clean food and water, and a clean roomy shelter from the extremes of weather."<sup>13</sup>

If the raven remained and the dove returned, then the land was partly visible but not yet drained or thoroughly habitable. The dove's return in two instances would fit well with the homing pattern presently known among pigeons. The final departure of the dove would indicate widespread presence of moderate conditions which would permit other animals to survive. Whether or not this meteorological explanation of Noah's program is valid, the Scripture references to both the raven and the dove in Genesis 8 are completely in keeping with what scientists know to be true of each bird's behavior.

## THE RAVEN AFTER JUDGMENT

The Bible features ravens as birds which inhabit the wilderness of rubble remaining in the wake of battle. As described in Isaiah 34, the "Day of the Lord" is to be a time when the "sword of the Lord" (Vs. 6) will be released against godless nations which have despised Him and opposed His plans (vs. 9). In the bloody aftermath of this event (vs. 3) ravens will feed within the wilderness which was once the center of human strength.

As the raven soared over the land after the judgment of a global flood, so it will descend following the judgments heralded in Isaiah 34, and it is also seen in Scripture feeding upon the corpses of those who have rejected filial honor and have thereby merited destruction:

"The eye that mocketh at his father, and despiseth to obey his mother, the ravens of the valley shall pick it out, and the young eagle shall eat it." Proverbs 30:17.

Although both these Bible passages portray the ghastly aftermath of human rebellion, they refer accurately to the raven's quest for food and its choice of desolate surroundings.

A more comforting allusion to the raven's diet is made by the Lord Jesus Christ in Luke 22:24:

"Consider the ravens: for they neither sow nor reap; which neither have storehouse nor barn; and God feedeth them: how much more are ye better than the fowls?"

The Heavenly Father who satisfies the ravens' hunger in such a variety of ways will surely provide for those who trust in Him.

### THE RAVEN AND ITS YOUNG

While striving to expose Job's own limitations and illustrate His own limitless power, God asked Job about the raven:

"Who provideth for the raven his food? When his young ones cry unto God, they wander for lack of meat." Job 38:41.

The passage really answers its own question by implying that God ultimately provides for the adult ravens who feed their own hungry nestlings.

"He giveth to the beast his food, and to the young ravens which cry." Psalm 147:9

The nesting behavior of the raven is quite instructive since it exhibits the means by which God feeds the young birds. Heinroth shows that ravens, like Canada Geese, pair for life.<sup>14</sup> The raven:

"... breeds according to latitude, between January and June, making a rude nest on inaccessible cliffs or tall trees, repairing the same for years in succession: the eggs are four to eight, two inches long, light greenish blue with numerous light purple and yellowish brown blotches, especially at the larger end; incubation lasts about three weeks, and the young remain in the nest several weeks before they are able to fly, fed at first on the half digested food disgorged by the parents; . . ." <sup>15</sup>

Following these early days, the young bird begins to pull and tear at its food instinctively, before it is really able to handle it alone:

"Most often, when the feet are used, the food is clamped under them and the bird tears off with its beak what it can swallow. Ravens and raptors do it like this . . . A bird holds its food in this way long before it can feed itself and without any example to copy." <sup>16</sup>

A raven's nest is not a silent spot, as the Heinroths have testified:

"Young ravens are also very noisy in the nest; since the adults are both courageous and well armed, they have no real enemies except man . . ." <sup>17</sup>

Miss Parmelee summarized the catering of ravens to their young aptly when she wrote:

"Actually ravens, like ostriches, are devoted parents. The male and female pair for life and generally return to the same nest in some tall tree or high cliff where they share the task of incubating their five or six eggs. They feed, guard, and care for their nestlings during many weeks, even after the young birds have left the nest. They continue to stay with their young ones throughout the summer, teaching them the ways of ravens. Though raven nestlings cry for food, it is to their parents as God has ordained, who hear their cry and feed their own young. Ravens are bold and fearless in defending their young, and Gilbert White reports that 'a pair of ravens nesting in the rock of Gibraltar would suffer no vulture or eagle to rest near their station . . . but would drive them from the hill with an amazing fury.'" <sup>18</sup>

The Bible is particularly firm when it faces human criticism. After quoting the Job 38:41 passage, Miss Parmelee asserted that Job was mistaken about the raven's nest:

"Job's poor opinion of birds as parents is further seen when

he accuses the raven of abandoning its young . . . According to the folklore of Job's time ravens desert their nestlings and it is God, the Psalmist declares, who feeds 'the young ravens which cry' (Psalms 147:9). Job's spiritual insight here was truer than his natural history. His mistaken notion, however, persisted for hundreds of years and as late as the seventeenth century Isaac Walton wrote: 'When the raven hath hatched her eggs she takes no further care, but leaves her young ones to the care of the God of nature . . .'" <sup>19</sup>

A painstaking analysis of the Job Scripture would have prevented this ornithologist from falling into the error of questioning Bible accuracy. In neither Job 38:41 nor Psalm 147:9 did God say that He fed the young ravens *directly* or *miraculously*. Nothing in the verses would prevent one from understanding quite naturally that God satisfies the young birds' hunger *indirectly* by providing food for their devoted parents who pass it faithfully along to the young.

The little ravens are quite noisy and thus "cry unto God" for food which He provides—presumably to the parents. There is no conflict whatsoever between God's words and the raven's feeding of its offspring.

### CEREMONIAL UNCLEANNESS OF THE RAVEN

Why was the raven classed with certain other birds as particularly "unclean" and not to be eaten by devout Israelites? Miss Parmelee<sup>20</sup> has suggested some possible reasons which stem from the Scripture itself. When Noah and his family disembarked, the Lord delivered an injunction against the eating of blood (Genesis 9:4). The blood was always considered to be God's portion of a sacrifice, as commentators point out. The loss of an animal's blood leads to its death and the ongoing of life is intimately dependent upon the circulation of blood in the body. Several New Testament passages repeat the prohibition and point to reasons why God placed a continuing stricture on the consumption of blood (Acts 14:20, Hebrews 9:22, and I John 1:7.) Birds and animals that feed on the bloody flesh of captured prey are mentioned in this list which includes the raven (Deuteronomy 14:14). In Exodus 22:31 God further ordered that His servants eat nothing "torn of beasts." The arguments against consuming fallen carcasses are obvious in that the animals may have died of disease and they certainly have not had the blood properly drained from the flesh. A raven which eats the blood of its prey and does not hesitate to feast on carrion is quite obviously "unclean" according to Mosaic standards and would likewise be considered unclean in keeping with modern criteria of public health.

Some writers fail to understand that the "uncleaness" of the raven or any other animal is the direct verdict of God through Moses. It may be possible to understand some factors which led God to describe these beasts as unclean, yet there may be other premises which only God understands. It must not be imagined that the Israelites gradually decided to classify some birds unclean because of human knowledge, fear, or superstition, nor must it be thought for a moment that the spiritual-scientific precepts of the Old Testament arose from some variety of religious

evolution!

### HIDING HABITS OF RAVENS

Perhaps the most instructive and fascinating Bible insight concerning ravens is found in I Kings 17:1-7. The Lord God had directed the prophet Elijah to hide himself in a wilderness region near the brook Cherith, tributary to the Jordan, where Elijah was to be provided with both food and water:

"And it shall be, that thou shalt drink of the brook; and I have commanded the ravens to feed thee there.

So he went and did according unto the word of the Lord: for he went and dwelt by the brook Cherith, that is before Jordan.

And the ravens brought him bread and flesh in the morning, and bread and flesh in the evening; and he drank of the brook." I Kings 17:4-6

Spiritual lessons abound in this passage. The very bird which must depend upon God for its food (Job 38:41, Psalms 147:9, and Luke 12:24) is used here as the divine agent of supply for man. The prophet Elijah found that unclean ravens may fulfill God's purpose just as the apostle Peter was later to learn that the sovereign God can use what man knows as "unclean" to perform His will (Acts 10:9-16).

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*The miracles in Bible history, however, do not contain the bizarre elements of magic that frequently accompany apocryphal records. When the ravens fed Elijah, miraculous components were skillfully blended with natural tendencies to perform God's will quite efficiently.*

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From the standpoint of science, the conduct of these ravens cannot be explained entirely by natural means. Although the raven can be tamed, it is usually quite wary of man in desolate habitats. A tame raven will generally result only when the particular bird has lived near man (as with a raven that frequents the slaughter houses) or when it has been actually raised by humans. It was probably a miracle that these apparently wild ravens would approach to Elijah so casually. It certainly was a miracle that they would deliver his food twice daily.

The miracles in Bible history, however, do not contain the bizarre elements of magic that frequently accompany apocryphal records. When the ravens fed Elijah, miraculous components were skillfully blended with natural tendencies to perform God's will quite efficiently.

The raven is known to be a very intelligent bird which is easily tamed:

"They are quick to imitate and have been taught to say words. In many ways they make admirable pets, although nothing

that can be carried away is safe from them, their desire to hide things being fully indulged in captivity, often to the discomfiture of the family."<sup>21</sup>

"The raven is easily domesticated by kindness, and becomes much attached to its master, following him like a dog. Like others of the family it can be taught to imitate the human voice and to pronounce a few words with great distinctness; but the natural note is a deep, hoarse croak."<sup>22</sup>

Of greater significance to the Elijah narrative is the proclivity of ravens to carry bits of food or other small objects to their private hiding grounds.

"But the raven learns very early in life to take its booty secretly to a nook it seldom visits. At a moment when nobody is looking, it flies noiselessly away to its hiding place, and even suppresses the cry it normally gives when it is about to take off."<sup>23</sup>

"All the crow family instinctively hide bits of food; the youngsters in the nest begin to do without having seen other birds do it . . ."<sup>24</sup>

"It has been noted that ravens and other members of the crow family often store surplus food in rocky crevices or beneath a covering of leaves and this habit may explain the action of the ravens in the Elijah story."<sup>25</sup>

Thus it is within the raven's habits normally to carry food and other objects off to a private place of storage! God's provision for Elijah clearly rested upon both natural and miraculous activity. God chose an intelligent bird that is equipped instinctively for the task of carrying food into the wilderness regions.

While it is quite true that individual pet ravens can be taught to utter a few simple words, the records of these birds in the Bible speak a clear message of their own. Spiritual truth and scientific accuracy surrounding the Scriptural reference to the ravens manifest that the Bible is exactly what it claims to be—the Word of God to man.

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# BOOK REVIEWS



**INASMUCH: CHRISTIAN SOCIAL RESPONSIBILITY IN 20TH CENTURY AMERICA** by David O. Moberg, Wm. B. Eerdmans Publ. Co., Grand Rapids, 1965. 216 pp. \$2.45 (paper).

Both the title and tone of this book are taken from Matthew 25:40: "Verily I say unto you, Inasmuch as ye have done it unto one of the least of these my brethren, ye have done it unto me." Moberg presents this book as a working document toward a Christian philosophy of social concern, and as a guideline to direct the social welfare activities of evangelical churches.

The outline for the book was originally prepared during Moberg's five year tenure as chairman of the social agency and welfare committee of his denomination. It was intended "as a starting point for study, thought, discussion, prayer, and work on the subject of Christian social responsibility. I hope it will stimulate effective action on matters related to the church's mission to society."

Dave Moberg is familiar to most A.S.A. members as a past editor of the J.A.S.A. and he is a respected friend of many of us. An active church and denominational officer, lay preacher, and student pastor, he received his Ph.D. in sociology from Minnesota with early expressed interest in "activist-involved" sociology. Both backgrounds are reflected in Moberg's first book, *The Church and the Older Person*, which not only provided excellent empirical data, but also practical suggestions on how the church could serve and be served by the aging. His second book, *The Church as a Social Institution*, is a fine descriptive text on the sociology of religion, which has been widely adopted as a textbook and resource book. He was for some time chairman of the department of social science at Bethel College, has twice held Fulbright professorships in Europe and has recently been appointed Chairman of the department of sociology and anthropology at Marquette University.

Here, however, Moberg does not write as a sociologist, but as one acquainted with sociology: "It is not a detailed handbook for dealing with specific social problems, nor is it strictly a social science treatise, though I trust that it is based soundly upon social science knowledge as well as upon Christian teachings." *Inasmuch* is designed for interested pastors and laymen, for whom Moberg attempts "to maintain a consistently evangelical Protestant orientation." This gives the book a particular coloring which is maintained in many ways. Each chapter ends with a list of discussion questions that a layman might well ask regarding social issues, but they are not the questions a

sociologist would probably ask. Each chapter also has a list of annotated reading, for which Moberg feels constrained to defend the inclusion of "liberal" sources, "simply because most work on Christian social concern has been done by the liberals." Bible references are frequently inserted, not as "proof texts," but to see if "the words of contemporaries are in accord with the supreme guidebook."

Moberg is a "soft-sell" author. He is addressing an audience which has deeply invested interests in the "right way", a way that is indeed often "to the right." To raise questions about this audience's social stance often evokes fear, anxiety, and anger. I think Moberg does not want his audience to "turn him off" as they might well do with other more open authors who have written on the same topic, men such as Glock, Stark, Peter Berger, Martin Marty, Gibson Winter, and Harvey Cox. Therein lies both the strength and weakness of this book.

The book is divided into five parts. Part I takes up the social responsibility of the Christian; Part II the Scriptural Basis for Christian Social Concern; Part III Society's Need for Christian Social Concern; Part IV Implementing Christian Social Concern; and Part V Evaluating Christian Social Concern. Each section is clearly written, well documented, and filled with specific illustrations. Moberg does not tip his hand as to the answers to the provocative discussion questions he presents, thus succeeding admirably in presenting a discussion guide and an incentive to re-evaluation.

But Moberg also maintains an unspoken and unquestioned assumption, namely that an adequate philosophy of Christian social concern can be developed within the tradition and structure of evangelical Christianity. Jeffrey Hadden<sup>1</sup> has recently suggested that the old conservative-liberal dichotomy used by Moberg is a false picture of the actual position of churches and clergy today. It is around specific issues rather than denominational polarities that religious pluralism obtains today. Moberg suggests that an adequate Christian social concern can build upon the slice of Christendom known as evangelicalism as the base. But is that the best way of slicing the pie? Stark and Glock<sup>2</sup> suggest that both the conservative and liberal polarities provide no adequate base for a meaningful Christian response in society.

To pursue this point on another tack, Moberg assumes that the social structure of evangelicalism is *not* inimical to responsible Christian social concern. Yet this slice of Christendom is a Christian sub-culture and may not be a viable sub-culture at all, but rather a "contra-culture"—a minority group which maintains its identity by pitting itself against the dominant culture,

as J. M. Yinger<sup>3</sup> describes it. Several studies suggest that the evangelical sub-culture may contain social and theological constructs that defeat a feasible Christian social concern despite its best intents<sup>4,6</sup>. Thus, although Moberg lists ten factors why evangelical Protestants have not been involved with social concerns, his ten credible factors miss the heart of the matter, i.e. evangelical Protestantism is a time, place, and culture, constrained expression of Christian commitment. And that expression of Christianity may no longer be a viable form of Christian expression in society.

The study of religion held a central place in the work of pioneer sociologists such as Troeltsch, Weber, Pareto, Durkheim, and Wach. After a hiatus of several decades, the sociology of religion is again a serious concern of men like Glock, Stark, Michael Argyle, Bryan Wilson, J. M. Yinger, R. R. Dynes, Benton Johnson, and Gerhard Lenski. Their views, more dispassionate than Moberg's, suggest that religion is both a powerful social force, and powerfully influenced by social forces. They suggest that social forces are producing revolutionary changes in the structure of religion in America. And for this reason many theologians are looking at social relations and social responsibility as the point of relevance for 20th Century Christianity. Moberg writes of Christian social concern as an important, but perhaps a tangential aspect of Christianity. For comparison, this is what Langdon Gilkey<sup>5</sup> recently stated: "there has been a shift in Christian ethical concern from personal holiness to love of neighbor as the central obligation, if not the essence, of Christianity . . . a concern with a man's attitudes and behavior in relation to his neighbor in the social community."

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**Evangelical Protestantism is a time, place, and culture, constrained expression of Christian commitment. And that expression of Christianity may no longer be a viable form of Christian expression in society.**

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Is a responsible Christian social philosophy possible within the evangelical structure? To what degree can we assume that it is possible? What influence does the evangelical social structure have on the type of Christian social concern it can muster? To these larger issues Moberg does not speak, and we should not be tempted to read his mind on them. Does he really feel that the whole social structure of the evangelical slice of Christendom does *not* require re-evaluation in light of contemporary America?<sup>6</sup> Or is Moberg being discreet and not raising these larger issues at this time so that the issues he does raise will open the door for the larger discussion at a later date? If so, when? Perhaps Moberg will speak to this in the future. I, for one, certainly hope so and look forward to his comments.

I personally appreciate the contribution which Professor Moberg has made in this book. It is a book which all A.S.A. members should read and discuss—even look

up some of the many excellent references Moberg has provided us. Yet whether Moberg's book can provide the incentive for a more adequate Christian social philosophy and social action is problematic. I wish I could be optimistic, but the movement may be more apparent than real, resulting in only a more vocal assertion of the old unexamined assumptions. For example, Moberg quotes Carl F. H. Henry and Billy Graham as representative of leaders in Christian social concern. Yet their position on "Christian" social action demonstrates little change from a 19th century view of the nature of man, social structure, and economic dynamics. These men are certainly more concerned, and one may appreciate and laud their concern. But I find in them no re-thinking of Christian social responsibility in the larger sense.

This review has not been intended to fault Moberg's book. He has written sensitively and authentically to a limited audience. He has tackled the foremost problem of contemporary Christianity with courage and conviction. He has presented a prologue and it is a good beginning for all of us. I want to hear more from him and see where he would point us further.

#### FOOTNOTES

1. Hadden, J., A Protestant Paradox—Divided They Merge, *Trans-Action*, July/August, 1967.
2. Stark, R. and Glock, C. Y., *American Piety: The Nature of Religious Commitment*. Univ. Calif. Press, Berkeley, 1968.
3. Yinger, J. M., Contraculture and Subculture. *Amer. Sociol. Rev.*, 25:625, 1960.
4. Glock, C. Y. and Stark, R., *Christian Beliefs and Anti-Semitism*. Harper & Row, New York, 1966.
5. Gilkey, L., Social and Intellectual Sources of Contemporary Protestant Theology in America. *Daedalus* Winter, 1967.
6. Pattison, E. M., The Closed Mind Syndrome. *Christ. Med. Soc. J.*, 15:12, 1963.

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**THE PASSOVER PLOT** by Hugh J. Schonfield. Bernard Geis Associates, New York, 1965. \$4.95

"In another age, the author of this book would have been burned at the stake," reads an advertisement heralding Hugh J. Schonfield's *The Passover Plot* in the September 25th, 1966 issue of the *New York Times*. The controversial book by the Jewish scholar raised a furore when published in England in 1965. Published in the fall of 1966 by Bernard Geis in the U. S. it has received but cursory and unfavorable views thus far (cf. *Christianity Today*, December 9, 1966, pp. 29-30). Samuel Sandmel of the Hebrew Union College, author of *We Jews and Jesus*, writing in the *Saturday Review*, December 3, 1966, p. 43, says: "Schonfield's imaginative reconstruction is devoid of a scintilla of proof, and rests on dubious inferences from passages in the Gospels whose historical reliability he himself has antecedently rejected on page after page. In my view, the book should be dismissed as the mere curiosity it is."

Although the work will not convince scholars and will not appeal to Christians, it will undoubtedly attract many others because it is being sensationally

publicized and will be issued in paperback. The book deserves some critical attention because it raises before the public the paramount issues of the death, the resurrection, and the deity of Jesus.

### I. Schonfield speculates that Jesus was a so-called Nazorean.

Building on the speculative theories of Robert Eisler, the author holds that there existed in the time of Jesus a pre-Christian Nazorean sect in Galilee with affinities with the Essenes of Qumran and the Mandaeans (p. 208). He even includes the Old Testament Rechabites and Kenites as elements in his North Palestinian Sectarians (pp. 38-39). He asserts, "We must therefore regard it as highly probable that for a time Jesus attached himself to a travelling body of sectarian craftsmen, and thereby came to be known as the Nazorean" (p. 64).

Although he does not fall into the error of identifying Jesus as an Essene, he argues that Essene influence was strong in Galilee since Damascus is mentioned as one of their centers in the Damascus Document of the Dead Sea Scrolls. (pp. 38-39). (The distance between Galilee and Damascus is not taken seriously.) Some scholars had suggested that after the earthquake of 31 B. C. the Qumran community had temporarily abandoned their Dead Sea habitation for Damascus. But since we now have a manuscript of the Damascus Document dated long before 31 B. C., possibly to the early first century B. C., the literal interpretation of "Damascus" seems untenable—the references to the movement to Damascus are not prophetic. (Cf. Frank M. Cross, *The Ancient Library of Qumran* [Garden City, N. Y.: Doubleday Anchor], 1961. pp.81-83.)

The author suggests that the Mandaeans of Iraq and Iran—an Aramaic-speaking, Gnostic community—are the heirs of the so-called Nazoreans of Galilee (p. 208). There is indeed some indirect evidence to indicate that the Mandaeans may have had their origins in Palestine about the time of Christ. However, their literary texts, so widely used by R. Reitzenstein and Rudolf Bultmann in the 1920's and 1930's to interpret the Gospel of John, are medieval manuscripts. They may it is true contain some ancient traditions. But since most of the references to Christ are polemics against Byzantine Christendom, the uncritical use of such texts in New Testament exposition can hardly be justified. (See the present writer's article, "The Present Status of Mandaean Studies," *Journal of Near Eastern Studies*, XXV [1966], 88-96). It is rather striking that critics who are often the most skeptical in their estimate of the New Testament can at the same time be quite credulous in the use of such late sources.

### II. Schonfield alleges that the concept of Jesus' resurrection is pagan, patterned after the rising-and-dying gods of the Near East.

"It took a Nazorean of Galilee to apprehend from the Scriptures that death and resurrection was the bridge

between the two phases (i. e. Suffering Just One and Glorious King). The very tradition of the land where Adonis yearly died and rose again seemed to call for it" (p. 227). The theory that there was a widespread worship of a dying-and-rising fertility god—Tammuz in Mesopotamia, Adonis in Syria (note: not Galilee!) Attis in Asia Minor, and Osiris in Egypt—was propounded by Sir James Frazer in 1906. Schonfield rests his case on Theophile Meek's interpretation of the Song of Solomon as a liturgy of an Adonis-Tammuz cult, which is in turn dependent upon Frazer's hypothesis.

The theory has been widely adopted by scholars who little realize its fragile foundations. In recent years Samuel N. Kramer has made a thorough study of the Mesopotamian sources for the alleged resurrection of Tammuz by Ishtar, and has found that this popular belief was based on "nothing but inference and surmise, guess and conjecture." (*Mythologies of the Ancient World* [Garden City, N. Y.: Doubleday Anchor, 1961], p. 10.) In 1960 Kramer discovered a new poem, "The Death of Dumuzi (the Sumerian name for Tammuz)," which proves conclusively that instead of rescuing Tammuz from the underworld Ishtar sent him there as her substitute. (See the present writer's article, "Tammuz and the Bible," *Journal of Biblical Literature*, LXXXIV [1965], 283-90.) A line in a fragmentary and obscure text is the only positive evidence to indicate that after being sent to the underworld Tammuz himself may have had his sister take his place for half the year. (Cf. S. N. Kramer's note, *Bulletin of the American Schools of Oriental Research*, No. 183 [October, 1966], 31.)

The case is no less tenuous for the alleged resurrections of Adonis and of Attis. Pierre Lambrechts has recently shown that in the case of Adonis—the beautiful youth, beloved of Aphrodite, who was slain by a boar—there is no trace of a resurrection in the early texts or pictorial representations. The four texts which speak of his resurrection are quite late, from the 2nd to the 4th centuries A. D. (P. Lambrechts, "La 'resurrection d'Adonis,'" in *Melanges Isidore Levy* [1955], pp. 207-40.) He has similarly shown that Attis, the consort of Cybele, does not appear as a "resurrected" god until after 150 A. D.

The death and resurrection of these various mythological figures, however attested, would in all cases typify the annual death and rebirth of vegetation. This significance cannot be attributed to the death and resurrection of Jesus. A. D. Nock sets forth the most striking contrast between pagan and Christian examples of resurrection as follows: "In Christianity everything is made to turn on a dated experience of a historical Person; it can be seen from I Cor. 15:3 that the statement of the story early assumed the form of a statement in a Creed. There is nothing in the parallel cases which points to any attempt to give such a basis of historical evidence to belief." (*Early Gentile Christianity and its Hellenistic Background* [New York: Harper Torchbooks, 1964], p. 107; cf. also Bruce Metzger, "Considerations of Methodology

in the Study of the Mystery Religions and Early Christianity," *Harvard Theological Review*, XLVIII [1955], 1-20.)

### III. Schonfield asserts that the deity of Jesus is a pagan concept, influenced by the Roman ruler cult.

He dismisses the subject of the deity of Jesus by that most disarming adverb—"obviously." "Obviously," he asserts, "we have to divorce the issue (of the Messianic Hope) from the paganized doctrine of the incarnation of the Godhead with which for Christians it has become intermingled. . ." (p. 21). He explains that this doctrine was intruded into early Christianity by Gentile believers who could not hold Jesus their true emperor inferior in dignity to Caesar (p. 200).

In 42 B.C. Julius Caesar was posthumously deified by the Senate. Augustus (27 B.C. - A.D. 14), his successor, accepted divine honors particularly from the eastern provinces. Technically speaking it was the emperor's genius or double who was being honored. After his death Augustus was also deified and introduced into the Pantheon.

It was a madman, Gaius Caligula (37-41 A.D.), who demanded worship of himself as a living god. Of a later emperor, Domitian (81-96 A.D.) Suetonius said: "With no less arrogance he began as follows in issuing a circular letter in the name of his procurators, 'Our Master and our God bids that this be done.'" Schonfield holds that these titles were inserted into the mouth of Thomas when he cried out to Jesus, "My Lord and my God" (p. 200).

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Hugh Schonfield, a Jewish scholar, has set forth an interesting and provocative theory to explain the circumstances of the death of Jesus and the development of the belief in His resurrection. His book, *The Passover Plot*, sets forth the thesis that Jesus conspired with certain of His disciples to feign death on the cross by the use of drugs, and then to rise from "the dead." Schonfield's arguments when examined critically are found to be built upon a tenuous web of speculations, evasions, and distortions of the Gospels.

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Many scholars believe that the ruler cult was more the expression of political loyalty than of genuine piety. A. D. Nock points to the absence of *exvotos* to the emperor, i. e., dedications in which thanks would be given for prayers answered and sicknesses healed. In any case the situation of Jesus is quite unlike the above examples: 1) He was not a conqueror or an emperor with massive powers and a tradition of divine honors. 2) His followers who worshipped him in the first instance were not, as Schonfield assumes, Gentiles from a polytheistic background where heroes were readily assimilated to anthropomorphic deities,

but as will be shown below, Jews from a monotheistic tradition.

### IV. Schonfield ignores the Old Testament foreshadowings of the deity of the messiah.

We shall agree with Schonfield that the Jews at the time of Jesus were not expecting a divine messiah. But it can be shown that Jesus and the early Hebrew Christians interpreted a number of Old Testament passages as indicating a messiah who was one with God in a unique sense. Schonfield does not deal with such passages as Psalm 45:6 cited in Hebrews 1:8; Psalm 110:1 quoted by Jesus in Mark 12:35-37; Psalm 2:7 quoted in Acts 13:33, etc.

A telling testimony to the presence of such passages in the Old Testament is the way in which Schonfield twice quotes Isaiah 9 (pp. 202, 223). In the first passage he notes that the message of the angels at Christmas "echoes the words of Isaiah 9: 'Unto us a son is born; and the government shall be upon his shoulder . . . Of the increase of his government and peace there shall be no end, upon the throne of David, and upon his kingdom, to order it and establish it.'"

In the second passage in referring to a hymn from Qumran, Hodayot III, he notes that "the words of the hymn make obvious reference to Isaiah 9:6-7: 'Unto us a child is born, unto us a son is given: and the government shall be upon his shoulder: and his name shall be called Wonderful Counsellor . . . Of the increase of his government and peace there shall be no end, upon the throne of David, and upon his kingdom, to order it, and to establish it with judgment and justice from henceforth even for ever.'"

The dots in Schonfield's citations represent a most eloquent silence. What has been omitted reads: "MIGHTY GOD, EVERLASTING FATHER, PRINCE OF PEACE."

### V. Schonfield assumes rather late dates for the Gospels and consequent pagan intrusions into their composition.

Schonfield characterizes the Gospel of John as the work of a Greek author, the so-called elder John of Ephesus, who has introduced the picture of Jesus as a "posturing polemical figure with a streak of antisemitism," and "a pathological egotist" who claims to be the Son of God (p. 99). He dates the Gospel of John to A.D. 110-115 (p. 258).

The author does not take into account the revised estimate of the Gospel of John that the Dead Sea Scrolls have impressed upon many scholars, e.g. Bishop J. A. T. Robinson. W. F. Albright summarizes his personal views on John in *New Horizons in Biblical Research* (London: Oxford University Press, 1966), p. 46, as follows:

"All the concrete arguments for a late date for the Johannine literature have now been dissipated, and Bultmann's attempts to discern an earlier and later form of the Gospel have proved to be entirely misleading, as both of his supposed

redactions have similar Jewish background. The date which I personally prefer is the late 70's or early 80's, i.e. not more than thirty or forty years after the composition of the earliest Pauline epistles.

Schonfield similarly adopts very late dates for the book of Acts, placing it in the time of Trajan, A.D. 98-117 (p. 197), and for Luke, dating it about 100 A.D. (pp. 169, 177). He bases these dates on the disputable dependence of Luke on Josephus' *Antiquities*, which was published in 94 A.D. But there are many cogent reasons for dating Acts prior to the Neronian persecution of 64 A.D. Acts 1:1 would further require that Luke was prior to Acts itself.

One of his arguments for the late date of Luke is the resemblance between the incident on the Emmaus Road (Luke 24:13-32) and the first chapter of Apuleius' *The Golden Ass* which was pointed out by the mythographer Robert Graves (pp. 177, 254). It is a glaring blunder for Schonfield to posit the Gospel of Luke about 100 A.D. on this basis, inasmuch as Apuleius was not born until 124 A.D. and did not publish his famous work until about 150 A.D.!

#### VI. Schonfield evades the testimony of Paul to the deity of Jesus.

"Even the Hellenised Paul in his mystical philosophy never went as far as speaking of Christ as God, though his doctrine of the Messiah as the pre-eminent expression of God is so delicately poised in its terminology that it could be misunderstood by those unacquainted with its peculiar esoteric Jewish background of thought connected with the Archetypal Man" (p. 200). Schonfield's rather tortuous statement seeks to evade the full implications of Paul's testimony.

In a book which is about Jesus Schonfield does not go into any detail about Pauline thought. But from his notes to *The Authentic New Testament* (New York: Mentor Books, 1958), a translation which he produced, we see that he does not question the fact that Paul was a Pharisaic Jew or that his letters were written before his death in the 60's. Paul's testimony on the issue of the deity of Christ is thus quite crucial.

Most scholars would not agree with Schonfield that Paul's language about Jesus is ambiguous. To quote a distinguished Jewish authority, H. J. Schoeps, *Paul* (Philadelphia: Westminster Press, 1961):

"In Phil. 2:6 Paul speaks of an *isa einai theo* of Christ, which can only mean that 'Christ was and is equal with God.' In 2 Cor. 11:31 Paul relates the Jewish formula of benediction, the word *eulogetos* (blessed) . . . , which applies to God to Jesus Christ and no doubt feels no scruple in so doing" (p. 152).

"The equation of the *Christos* with God Himself, which cancels the line of demarcation between the God of the Old Testament and the Messiah, leads logically to the fact that Paul transfers all the Old Testament statements about God to the exalted *Christos Iesus*" (p. 153).

#### VII. Schonfield distorts the testimony of Jesus.

He maintains that, "Jesus as much as any other Jew would have regarded as blasphemous the manner in which he is depicted, for instance, in the Fourth Gospel" (p. 21-22). When the high priest Caiaphas adjured Jesus to declare under oath whether he was

the Messiah or not, Jesus answered, "I am, and ye shall see the Son of Man sitting on the right hand of power, and coming in clouds of heaven" (Mark 14:62). The high priest thereupon rent his clothes and said, "Ye have heard the blasphemy." Schonfield guided by his preconceptions interprets the rending of the garments merely as "a formal sign of sorrow." He holds that "Jesus had committed a 'blasphemy', not of God in Jewish law but of Tiberius Caesar in Roman law" (p. 148).

This is a most unconvincing interpretation of what the high priest regarded as blasphemy. The rending of the garments was a protest against a *gidduf*, a blasphemy against God, according to Mishnah Sanhedrin VII. 5; according to Mishna Kerithoth I. 1 this was worthy of death. To quote the Jewish scholar Schoeps:

"In the scene of Jesus' trial at night He is asked by the high priest with a solemn oath to say whether He is the Son of God. According to Mt. 26:63 and Mk. 14:61-62, the question is put directly by the high priest, and according to the older tradition contained in Mark, is answered by Jesus in the words *ego eimi* ('I am')."

"E. Stauffer has carefully investigated traces of the liturgical theophany formula *Ani (we) Hu* (literally "I and He" but meaning "I am He") in Jewish writings. It seems to me to be proved that this lies behind the *ego eimi* statements, and that in the mouth of Jesus it implied that He predicated of Himself divine nature, while in the ears of the high priest it sounded, of course, like a horrible blasphemy (*op. cit.*, p. 161).

Schoeps points out that the mere claim to have been the Messiah would not have been adequate reason for the Sanhedrin to have condemned Jesus to death. In A.D. 132-35 when Rabbi Akiba proclaimed Bar Kokhba the Messiah, the rabbis who disagreed did not persecute the latter. In the Jewish view history would be the judge of messianic claims. (Cf. Gamaliel's speech in Acts 5:34 ff.)

Schonfield objects that if Jesus were guilty of blasphemy he would have been stoned (Lev. 24:16). He recognizes, however, the fact that the Jews at this time were deprived of the right of capital punishment, a fact confirmed by the Talmud. They were indeed tempted to stone Jesus when he said, "I and the Father are one" (John 10:30, 31; cf. Luke 5:20 ff.).

On two occasions they evidently took advantage of the temporary absence of a Roman governor to take the law into their hands. In 37 A.D. when Pilate had been recalled they stoned Stephen for blasphemy (Acts 6:11 ff.). In A.D. 61 between the terms of Festus and Albinus they stoned James, the brother of Jesus. (See Josephus, *Antiquities* XX. 200; Eusebius, *Church History* II. 23.)

#### VIII. Schonfield contrives an implausible plot to explain the circumstances of Jesus death.

The author conceives of Jesus as a sincere but astute messianic pretender, whose intimate knowledge of the Old Testament prophecies enabled him to manipulate people and events so as to achieve the fulfillment of those prophecies. Toward the end of his ministry he took certain people into his confidence—Joseph of Arimathea, Lazarus, a Judean priest (John

18:15), and an anonymous "young man." It may be asked why Jesus did not confide in Peter, James, and John—his closest disciples.

His accomplices were to give Jesus a drug so that he might feign death on the cross. He would then recover and after three days reveal himself as the resurrected one. According to Schonfield the drug was given in the "vinegar," i.e. the cheap wine, offered to Jesus when he said, "I thirst." He nowhere mentions the fact that Jesus had earlier refused wine mingled with gall or myrrh as an anodyne (Mark 15:23; Matthew 27:34).

As evidence of Joseph of Arimathea's participation in such a plot, Schonfield argues: "It has been noted by scholars that Joseph asked for the body (*soma*) of Jesus, which would indicate that he did not think of him as dead. It is only Pilate who refers to the corpse (*ptoma*)" (p. 168). No doubt scholars have noticed the difference in the synonyms, but only someone with Schonfield's imagination could argue that in this context *soma* means a living body and not a corpse. The Greek word *soma* often means a corpse; in Homer this is always the case. (Cf. Josephus, *Antiquities* XVIII. 236 to cite but one of numerous possible cases.)

After the body had been laid in Joseph's tomb, the plotters came on Saturday night to revive Jesus. The setting up of a guard at the tomb is dismissed as "a late reply to allegations that the body had been stolen by the disciples. . . ." (p. 170). Unfortunately for the plot Jesus had received a spear wound and could not be revived. The plotters then disposed of the body somewhere leaving the riddle of the empty tomb (p. 172).

### IX. Schonfield explains away the appearances of the risen Christ as cases of mistaken identity.

Schonfield recognizes that the early Christians became convinced of the resurrection of Jesus not primarily because of the empty tomb but because of the appearances of "the risen Christ." He also concedes that, "Christians are surely right in protesting that the Church could not have been established on the basis of deliberate falsehood on the part of the apostles. . . ." (pp. 170-71). He admits that, "We are not dealing in the Gospels with hallucinations, with psychic phenomena or survival in the Spiritualist sense" (p. 159). He further remarks, "What emerges from the records is that various disciples did see somebody, a real living person. Their experiences were not subjective" (p. 173; italics are the author's).

According to Schonfield Mary Magdalene, who was after all unbalanced, did not see Jesus in the garden but simply the gardener (pp. 171, 174). The angel at the empty tomb (Matthew 28:2-5) was simply a "young man" (cf. Mark 16:5), perhaps the same as the gardener. The two disciples on the road to Emmaus mistook a stranger for Jesus, possibly the same "young man" (pp. 177-78).

Commenting on the rendezvous with Jesus by the Sea of Galilee (John 21), Schonfield quotes vs. 12,

"None of the disciples dare ask him, 'Who are you?' knowing it was the master," and then gratuitously adds, "But this was just what they did not know" (p. 179). The same ubiquitous young man was mistaken by the disciples on the mountain in Galilee (Mat. 28:17). He does not mention I Cor. 15:6 which probably refers to this incident. There St. Paul says that more than 500 at one time saw the risen Jesus. (In Schonfield's *The Authentic N. T.* the qualifying phrase, "of whom the greater part remain until now," is strangely omitted.)

Schonfield dismisses the two appearances of Jesus to the apostles in Jerusalem, the first week without and the second week with Thomas. He argues that this is a Judean tradition followed by Luke and John (not noting the allusion in Mark) which is at variance with the Galilean tradition in Matthew. He explains this story as a Jerusalemite response to the Galilean story (John 21) since, "In both there is an eating by Jesus of broiled fish" (p. 178).

It is commonly agreed that there were ten appearances of Jesus after his death to the disciples. Of these Schonfield does not allude at all to: 1) the early appearance of Jesus to the women returning from the sepulchre (Mat. 28:9,10); 2) the appearance to James (I Cor. 15:7); nor 3) the final appearance to the disciples on the Mount of Olives (Mark 16:19; Acts 1:4-9). 4) He mentions without comment the appearance to Peter (I Cor. 15:5; Luke 24:34). 5) & 6) As seen above he dismisses the two appearances in Jerusalem as conflicting Judean traditions (Mark 16:14; Luke 24:36-43; John 20:19-25; I Cor. 15:5).

In the four appearances that he does seek to explain: 7) to Mary Magdalene (Mark 16:9-11; John 20:11-18), 8) to the two disciples on the Emmaus road (Mark 16:12, 13; Luke 24:13-35), 9) to the disciples fishing on the Sea of Galilee (John 21:1-23), and 10) to the disciples gathered on the mountain of Galilee (Mat. 28:16-20; I Cor. 15:6), Schonfield capitalized on certain statements of hesitation or of initial failure to recognize the risen Jesus. He does not apply his ingenuity to the cases where there are no such statements.

### The Alternatives

Schonfield seeks to maintain that neither Jesus nor his apostles were guilty of any fraud. Yet he does not explain how the plotters—Lazarus, Joseph of Arimathea, the mysterious "young man"—can be regarded as innocent of deception. The latter is mistaken for the risen Jesus on the four occasions of "appearances" admitted by the author, but never quite manages to correct the misapprehension of the disciples. He is supposed to bear a message from the dying Jesus "that the Messiah had risen" and "that they would see him in Galilee" (p. 179), knowing full well that he was quite dead, since according to Schonfield (p. 175) he had assisted in the second burial of Jesus. We are asked to believe that the skeptical disciples were confused by the appearance

of this young man into believing that Jesus had arisen and that they were so transformed by this confusion that they turned Jerusalem upside down with their preaching.

Schonfield asserts that it is not his intention to denigrate Jesus. He professes admiration for Jesus as a "dynamic personality" who worked and plotted to accomplish God's will (p. 185). But the level of that admiration is revealed in his concluding comparison of Jesus with the flamboyant British prime minister Disraeli, "another famous schemer" (p. 187).

We are left with the following alternatives: Was Jesus the Son of God or was he a "pathological egoist"? Was the empty tomb the result of an elaborately contrived Passover plot or of an eternally decreed Easter triumph? Is Christianity based on the mistaken identity of an anonymous "young man" or on the recognition of the risen Christ?

*Reviewed by Edwin M. Yamauchi, History Department, Rutgers—the State University, New Brunswick, New Jersey. This review originally appeared in The Gordon Review 10, No. 3, 1967, pp. 150-160. Reprinted by permission.*

## Letter to the Editor

### Study of Hooykaas Recommended

Both Lindberg and Siemens seem to miss the point of the impact which Christianity has had upon science. The most knowledgeable author on this subject is R. Hooykaas, a renowned historian and evangelical Christian scholar who has devoted many years of his life to the subject. His writings are few but powerful. "Christian Faith and the Freedom of Science", Tyndal Press 1957, is one of the most pertinent. The discussion in the ASA Journal is incomplete without reference to Hooykaas. I recommend that you try to get him to write something for A.S.A., or failing that, arrange for a younger European scholar to do a review of Hooykaas' work.

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## Presidential Greetings

### Temporal Consistency rather than Eternal Accuracy

This past week an instructor in our English department asked whether he could subscribe to our Journal. I assured him that being a non-scientist was no barrier. He had been attracted to the Journal by recent articles on speaking in tongues and was pleased to see a 20th century point of view supported by far-ranging data, including those of the Bible. The incident suggests, among other things, that there might be many non-scientists among our colleagues that would find the Journal a stimulating contribution to the continuing conversation between Science and Christianity.

Through the years the quality of our Journal has steadily improved. This is because each Editor backed by his editorial team has been dedicated to the task. I believe that we are agreed that we strive for a more perfect understanding of the world as seen both through science and the Bible.

History should at least temper our extreme judgments in each area. The best we can hope for, it would seem, is temporal consistency rather than eternal accuracy in this endeavor to relate the two areas. We should remember that history, art, and literature provide other ways of looking at some of the same data of the past. We impoverish our minds as scientists when we fail to expose ourselves to these other disciplines and the lessons they offer. Nevertheless, most of us

are caught up in the necessity of selection of a specialty in order to achieve depth of penetration.

Recently I was out in the yard looking for certain birds with some binoculars—the individual focus type. It occurred to me that just as either or both of the eyepieces could be out of focus, so our study of the Bible and our scrutiny of the world via science could involve imperfect focus. It suggests, too, that we seldom have perfect eyesight in both eyes. Hence a correction of one sort or the other is often needed. The historian of science could probably provide various illustrative examples of such pathological situations. In any event, should we not remember the analogy when we are tempted to enter into controversy involving these two areas and at least hesitate long enough to examine both our own eyes and our eyepieces before we precipitate a judgment about another man's sight?

I look forward to serving the membership this year in whatever way I can. Your suggestions are invited, whatever they are. I hope that the same frank exchange of ideas that has characterized most of our past may continue throughout 1969. I shall appreciate your letters presenting dissenting opinion or congruent support, but either is welcome. I hope to be able to reply, wherever appropriate, through the pages of the Newsletter.

**Charles Hatfield**  
President

In September, 1941, five scientists of deep Christian conviction met together in Chicago. They found that they shared mutual concerns in the relationship of science and Christian faith. The **American Scientific Affiliation** is an outgrowth of that meeting.

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