THE GENESIS FLOOD IN PERSPECTIVE: FIFTEEN YEARS LATER

by
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In 1961, the Presbyterian and Reformed Publishing Company published a book that has stirred up not a little controversy. *The Genesis Flood: The Biblical Record and Its Scientific Implications* by John C. Whitcomb and Henry M. Morris was not just another half-baked attempt to prove the Bible was true by appealing to science, still less an effort to exonerate science by appealing to the Bible. Rather, beginning with the presupposition that the Bible is the Word of God and that its account of origins, understood in a coherent, literal fashion, is both true and scientifically defensible, it offered an innovative theoretical reconstruction of earth's early history.

Little time elapsed before the book was pilloried by its critics and praised by its defenders. Whitcomb and Morris were either heroic saints or villainous incompetents. For both Christians and non-Christians, it became a book to be discussed. Few who read it could remain thoughtfully neutral about it. It seems fair to say that most reviews, whether "academic" or "popular", waxed warm in either reproach or praise. Indeed, many reactions evinced more heat than light.

Perhaps it is worth taking another look at the effect the book has had. My concern in this article is not to recapitulate the materials in the work (I shall assume that those who read this article have already digested Whitcomb and Morris), but to ask why it became important, how it has been abused, what its weaknesses are. In addition I shall suggest a few areas in which it could stand some updating, raise a few questions frequently put to me when the whole evolution question has been brought up, and provide a brief bibliography of some of the more significant works to have been written since 1961.

I should confess, at the outset, my own conclusions on this question. The cumulative evidence, both scientific and biblical, points, in my opinion, to a young earth. I would not want to see such a conclusion becoming a criterion of orthodoxy; nevertheless not only can this position be defended without committing intellectual hara-kiri, but I think it makes best use of the varied data.

Why The Genesis Flood *is Important*

The book did not come to birth in a vacuum. When *The Genesis Flood appeared,* almost fifty years had elapsed since the "Monkey trial". But during those years well-trained creationists had not been entirely lacking, even if somewhat cowed.

For example, Dr. Harry Rimmer wrote several works, his most influential one being *The Theory of Evolution and the Facts of Science.* More significant was the introduction to Everyman's reprint of Darwin's *Origin of the Species.* The introduction was written by Dr. W. R. Thompson, a Canadian biologist, at the request of the publishers. Thompson, who openly disavowed all allegiance to Christianity, slated the rise of evolutionary theory as unscientific, and insisted that Darwinism had done inestimable damage to both scientific biology and to morals. Thompson was a lone voice crying in the wilderness. Not many heard him and even fewer paid any attention; but his credentials could not be impugned and, moreover, precisely because he was not a Christian, his motives could not be challenged.

Whitcomb and Morris, however, accomplished several things which none of their predecessors had achieved. *First,* they presented a fairly believable *total package,* and that at a fairly high level. What they attempted was a total synthesis of biblical data and hard scientific facts, to present a unified and coherent theory of origins and early pre-history, while arguing against other syntheses. For the first time in years, creationists were not poking away at isolated problems and scoring points in narrow areas of conflict. Former writers, by tackling relatively narrow questions, tended to reassure conservatives that answers for the broad problems were also available; but Whitcomb and Morris actually ventured a total perspective which, even if only approximately correct, entailed the conclusion that much modern science was

entirely off the track. That they were taken up by so many so quickly points to the fact that many Christians were deeply sensitive to the lacuna in this area of Christian thought.

The *second* achievement of Whitcomb and Morris is related to the first. Just as they attempted a unified synthetic reconstruction of origins and early pre-history, so also did they venture to touch on a broad number of relevant disciplines. Evolution is an extremely complex theory and raises questions in scientific fields as diverse as palaeontology, biology, physics, geophysics, chemistry, statistics, mineralogy, meteorology; in biblical studies, areas as difficult as Hebrew semi-poetry, principles of hermeneutics, theology; plus epistemological and other philosophical questions; moral significance; and much more. No one can be an expert in everything; and, agree or disagree with Whitcomb and Morris as you will, it must be admitted that they cast their nets wide and became reasonably proficient in highly diverse specialties of human knowledge.

A *third* factor which commended the authors to many thoughtful Christians was that they quite openly began by considering *the text of scripture,* and only then moved on to scientific data. To the skeptic, of course, such a procedure was indefensible; but to the Christian who was fed up with articles and books which tried to make scripture conform to the latest theory — and that as often as not to authenticate scripture — there was a freshness, candour and reverence about their approach which merited respect and invited close scrutiny.

In the *fourth* place, Whitcomb and Morris wrote with a fairly irenical spirit, and with no trace of an obnoxious conservative obscurantism. There is no meaningless citation of endless proof-texts to "prove" that their particular interpretation is correct because "the Word of our God shall stand forever," or the like. They no doubt believe that God's Word shall stand forever; but they never stoop to plead this truth to defend their own understanding of the biblical materials. There is a certain integrity of argument which demands respect of the reader, not least when some particular argument fails to command assent.

Fifth, the authors of *The Genesis Flood* clearly see the immense implications for both biblical and scientific studies, should their presentation be correct, and calmly go ahead and argue their case. Their writing is therefore forceful, but no belligerent. This restraint, too often lacking among many (even) Christian writers, who like to give the impression that all who disagree with them are either retarded or ignorant, invested *The Genesis Flood* with a dignified sobriety which enhanced credibility.

How The Genesis Flood *is Abused*

As in the case of any book that becomes something of a *cause célèbre, The Genesis Flood* has not escaped its share of searching criticism. My concern in this section, however, is not to survey these criticisms and assess them, but to clear the ground for further discussion by pointing to a few of the ways in which the book has been *abused by both friends and foes.* Of course, the form the abuse takes differs depending on whether it is the friend or foe who is producing it. The former do despite to the work by making it serve purposes for which it was not designed and the latter abuse it by levelling against it insubstantial criticisms calculated to evolve merely emotional reactions.

"Friends" of *The Genesis Flood* have sometimes welcomed the book with such obvious relief that they have lost all pretence of objectivity. They treat the work as if it were a knock-down-drag-'em-out argument that has successfully and forever put to flight every conceivable objection to biblical creationism. Any dissenting voice is dismissed as "liberal"; the book thus becomes a criterion of orthodoxy. Whitcomb and Morris themselves are more cautious. However strong the thrust of their main conclusions, the authors are the first to "emphasize... that many minor details of [their] analysis of these problems may require modification in the light of further study" (p.xxiv). I would go further, and argue that the most important contribution made by the authors is the presentation of a coherent creationist alternative to both atheistic and theistic evolution. This contribution is abused when well-intentioned but poorly trained polemicists conjure up "improvements" and, worse, "deductions" which make any careful conservative writhe with embarrassment.

Opponents of the book have commonly begun by observing that neither Whitcomb nor Morris is a geologist, still less a palaeontologist. Morris can be written off as a mere "engineer", without noticing that his particular engineering credentials equip him to speak about the effects of flowing water (crucial to discussion about the deposition of sedimentary strata) with more authority than most of his critics. Moreover, charges of incompetence owing to a lack of formal training are, in themselves, both irrelevant and uncharitable. Similar charges could be levelled at figures as diverse as Jesus and Thomas Edison. Still less attractive is the condescending manner in which opposing arguments are frequently formulated. The *only* way to demonstrate an opponent's incompetence is to refute his arguments rationally, and so successfully that no plausible comeback is readily apparent. True scholarship thrives on open and fair debate. The preface to the sixth printing (1964) makes some pertinent observations in this regard.

Certain things that Whitcomb and Morris have discussed have, I think, been regularly misunderstood or misrepresented. Uniformitarianism is one; and, if I understand the arguments correctly, the second law of thermo-dynamics is another. On the first, critics would be well-advised to see the preface to the second printing; on the second, a little more later *(infra).*

Ways in Which The Genesis Flood *Needs Updating*

Since 1961, when Whitcomb and Morris published their book, large quantities of ink have flowed as writers have probed earth's origins and early pre-history. As pivotal as *The Genesis Flood* has been, it could become even more influential if it were re-written to take into account three areas of this more recent literature.

First, a revised edition could answer many of the criticisms that have been levelled at the book. The most widely published critical review article has come from the pen of J. R. van de Fliert, Professor of Historical and Tectonical Geology at the Free University of Amsterdam. His article, "Fundamentalism and the Fundamentals of Geology," first appeared in *The International Reformed Bulletin* (Spring, 1968), and was subsequently reprinted in *The Journal of the American Scientific Affiliation* (September, 1969) and in *Faith and Thought* (Autumn, 1970). The tone of his article is somewhat caustic; but it has been adopted by many theistic evolutionists as the ultimate put-down of Whitcomb and Morris. Most of the article was simply a re-affirmation of uniformitarian "facts", stated with sufficient authority to cow the creationists and to reinforce the prejudices of the theistic evolutionists. Nevertheless, some of van de Fliert's criticisms deserve a more thoughtful response than he himself offered to Whitcomb and Morris. For example, he argues that the faulting and folding of areas such as the Heart Mountain Thrust of Wyoming and the Lewis Overthrust of Montana and Alberta constitute powerful evidence for the thrust-fault theory, used to explain why an apparently early rock stratum overlaps a later stratum. Whitcomb and Morris argued that the Lewis "overthrust" is of such colossal magnitude that small-scale faulting and folding provide no relevant parallels: the known friction coefficients of such heavy planes of rock dictate that transportation as a coherent block would be impossible. The lines are drawn; both sides present their claims as if they were unassailable. More recently, fresh papers have appeared on the subject; and I am persuaded that a revised edition of *The Genesis Flood* could provide the reader with a far more cogent presentation of the conservative case.

A more serious issue raised by the critics of *The Genesis Flood* brings up the *second* area in which the work could be profitably improved. This is the area of hermeneutics. A small digression may serve to clarify the problem.

Christian scientists have often accused Morris of being an incompetent scientist; but few have been able to say much against Whitcomb's competence as a biblical scholar, for the very reason that they know too little about the area. I am not trying to say that every evangelical biblical scholar agrees with Whitcomb; but the exegesis and interpretation of Genesis 1-11 which he offers is based on careful work and a transparent desire to treat the scriptures seriously. Scientists, who are *Christians,* and who disagree with the Whitcomb/Morris approach, are bound before God to outline what they think the first eleven chapters of Genesis really do say. It will not do merely to point out that there are others (e.g. B. Ramm) who take Genesis 1-11 less literally than does

Whitcomb: the chief difficulty in discussing origins is the number of diverse disciplines involved; and the strength of *The Genesis Flood* is its synthesis of disciplines. Secular scientists may not have to bother with biblical evidence; but *Christians* will consider God's Word part of the given data, and in this area the only difference of opinion among them will be how to interpret that Word. If the opponents of *The Genesis Flood* want to make a dent in the following that Whitcomb and Morris enjoy among thoughtful evangelicals, they will have to produce a work or works equally given to coming to terms with what the Bible actually says, as well as to scientific arguments defending their particular interpretation of the hard facts. This point is made, somewhat polemically, by J. C. Whitcomb himself, in his later and less technical book, *The World That Perished* (1973).

That brings us to the heart of this second issue, *viz.* hermeneutics. Not a few writers have argued that Genesis 1-11 cannot be taken literally, usually by appeal to Hebrew "semi-poetry". See, for example, R. Youngblood's article, "Moses and the King of Siam," JETS 16(1973), 215-222. An overlooked article in defense of a more conservative hermeneutic is "The Hermeneutical Problem of Genesis 1-11", written by N. Weekes in the *Theological Review,* a mimeographed paper produced by the Australian Theological Students' Fellowship, Vol. 8, October 1972. To recapitulate their arguments would treble the length of this article, and in any case miss the point I want to make: *The Genesis Flood* could be significantly improved if it were revised so as to incorporate intelligent interaction with the hermeneutical pundits, especially those who have written since 1961.

Thirdly, and most important of all, *The Genesis Flood* could be updated and improved by incorporating some of the best work produced since its initial appearance. Such work is part of a continuing movement of which *The Genesis Flood* itself was the chief catalyst. The time is ripe to summarize it and criticize it, preserving the best and rejecting the worst, providing new impetus and direction for research in coming years. I shall arbitrarily select a few areas that could enrich a revised edition:

(1) Several "origin of life" experiments, such as those by H. C. Urey and S. L. Miller, have received considerable attention in the

standard scientific journals. They have also been vigorously criticized, especially by Duane T. Gish in *Speculations and Experiments Related to Theories on the Origin of Life: A Critique* (1972).

(2) When *The Genesis Flood* was published, geology had little patience with theories of plate tectonics. Now, for better or for worse, plate tectonics is so much "in" as to have become the new geological orthodoxy. I do not think that as a result any new hard facts have come to light of such a nature as to jeopardize the Whitcomb/Morris approach. However, their book is badly dated in that geology no longer used precisely the same categories which it did when they put pen to paper.

(3) We continue to read published reports of humanoid bone structures, such as those found in the Olduvai Gorge, variously dated at two million plus years. Ironically, Carbon 14 dating methods put the same structures at a tiny fraction of that age (betwen 10,000 and 20,000 years). But in any case radioactive dating procedures have churned out more results that need to be analyzed, and one or two novel methods.

(4) There are new discoveries which need to receive an airing outside merely technical books and journals. For example, in astronomy a few voices have been raised to question the correlation between large redshift and great (and increasing) distance. If this correlation is ever broken down, modern cosmology is called into question. More striking yet are recent observations on the earth's magnetic field. It has been pointed out that there have been worldwide magnetic field measurements going back to the work of Gauss in the 1830s; and on the basis of 130 years of observation, it appears that the rate of decay of the earth's dipole moment is approximately five per cent per century. The data confirm the theory of exponential decay. If sound, this specifies a half-life of about 1400 years. If we take, as a limiting value for earth's magnetic field, something less than that of a magnetic star, the upper limit of the age of the earth's magnetic field (assuming a constant rate of decay) is less than 10,000 years. How cogent a piece of evidence is this for a young earth?

(5) Thus, precisely because *The Genesis Flood* has been so seminal it would be very helpful to have a second edition which

would thoughtfully survey the spate of more recent literature, incorporate the most cogent material, and introduce the reader to the best of the multiplying bibliography. Although I readily confess I am not expert in the area of origins — I could easily be accused of being a seed-picker, and with more justification than when the charge was levelled against Paul (Acts 17:18) — I shall, a little farther on, mention some of the more significant literature to appear since the publication of *The Genesis Flood.*

Some Questions Frequently Raised

During the past ten years I have, somewhat reluctantly, occasionally lectured on the subject of evolution and the Christian faith. From the discussions which invariably ensue, I have undoubtedly learned far more than my patient listeners and questioners. One thing I have learned is that certain questions crop up time and time again. Of these, I shall select four on which to offer a few brief reflections.

(1) It is often said that natural selection has been demonstrated in practice by the rise of certain strains of DDT-resistant flies, or the predominance of dark moths over light ones in industrialized areas of Great Britain, where the darker colour provides added protection from predators. This is not the place for detailed rebuttal; interested readers will get more help from *inter alios,* B. Davidheiser, *Evolution and the Christian Faith* (1969), pp. 189ff.; and J. W. Klotz, *Genes, Genesis and Evolution* (second edition, 1970), 219ff. Suffice it to point out that the complexities surrounding natural selection are enormous, and regularly underestimated. For example, a favourable characteristic for the adult individual may not have the opportunity to develop unless it is equally favourable when the individual is young, a period during which, in many cases, a high mortality rate exists. Moreover, where there is intensive selection, there are fewer varieties. For example, the cichlids are found in all the great lakes of Africa. Where predators occur, as in Lake Albert, only four species are present; but where there are no predators, over fifty species are found. Thus, intensive selection might slow down and even defeat evolution, for the organism will have less flexibility to exploit a change of habitat. Indeed, intensive selection may force the extinction of the organism because the

organism has become so highly adapted to its special environment it cannot survive any change. Flexibility appears to be more important than special fitness; and if so, models for natural selection must walk a statistically improbable tightrope between flexibility and environmental incentive to change. Another problem is that the positive value of small differences, though frequently alleged, has in many cases not been demonstrated. Yet again, and most significantly, the palaeontological records do not show the smooth transitions required by the theory.

Much more could be said; but I shall focus attention briefly on the moths and flies just mentioned. The hard numerical data can sustain interpretations other than that natural selection is at work. More melanic moths may survive because their lighter cousins have been killed off; and those flies most susceptible to DDT are the ones likely to get killed off. The question at this point is whether natural selection is primarily responsible, and whether resulting matings produce an unambiguous shift in population characteristics. Here recent results are both more complicated and more ambiguous. It has been suggested that in the case of DDT-resistant flies, mechanisms other than natural selection may be at work: DDT may have itself stimulated the production of hormones or enzymes which protect against DDT (an enzyme which removes hydrochloric acid from DDT has been shown in the resistant flies); there may be other factors carried in the cytoplasm. Some experiments with mated melanic moths have produced a higher proportion of melanics, but others have not: again the problem seems to be far more complex than was first realized. Suppose, however, that we are dealing with a single mutant gene: there is still an infinite distance between this mutant and the kind of natural selection that would be required to change a moth into something not-a-moth.

In the light of this sort of evidence, it is surely a doubtful method which makes so much turn on the mechanism of natural selection. For example, Julian Huxley, in his book *Evolution in Action* (1953), 45f., offers a figure to illustrate the probability of a horse being produced by evolution through mutations alone, without any natural selection. There is, he says, one chance out of a number so large as to require three volumes of five hundred pages each just to print it — when, as Davidheiser points out

(p.203), "it would take less than two lines in a book to record a number larger than the estimated number of electrons in the known universe." Huxley considers this to be tremendous evidence for the importance of the role of natural selection: horses exist, mutation cannot account for them, and so natural selection must be invoked. I think the Christian can provide a more believable alternative.

(2) But what about the horse? Perhaps the palaeontological evidence does not reveal as smooth a development as evolutionists might wish; perhaps the mechanism of natural selection has indeed been overrated; but surely the fossil evidence of the horse *proves* that evolution took place, at least in this one case? And if in this case, why not in others?

The alleged evolution of *equus* from *eohippus* is regularly taught as irrefutable. The counter arguments are complex, but quite persuasive. Because they are both lengthy and involved, I merely refer to what is, to my knowledge, the best article on the subject. F. W. Cousins, "The Alleged Evolution of the Horse," *A Symposium on Creation* III. ed. D. W. Patten (Grand Rapids: Baker, 1971), 69-85.

(3) A third area of perennial concern is the second law of thermo-dynamics. Some treat this law as if it were the final refutation of all evolutionary schemes. Others suggest it may not operate at the scale of the universe. Some argue that although it is a well-tested law of physics, it is inapplicable in the area of biology.

The following observations may be helpful. *First,* no studied physical process has been shown to set aside the first and second laws of classical thermodynamics. Albert Einstein has been quoted as saying:

> Classical thermodynamics... is the only physical theory of universal content concerning which I am convinced that, within the framework of applicability of its basic concepts, it will never be overthrown [M. J. Klein, "Thermodynamics in Einstein's Thought," *Science* 157(1967), 509].

This means that modern theories which outline a cyclical pattern in the universe (e.g. endless expansion/compression cycles), although not disproved, are no more than the merest speculation.

Second, a philosophically materialistic theory of evolution eschews, by definition, all vitalism. Therefore all biological processes are nothing more than matter/energy processes which are subject to the known laws of thermodynamics.

Third, mechanistic biologists will usually concede this point, or even insist on it if it means the overthrow of vitalism. But they then argue that within a finite system it is possible to negate the entropy principle, especially if energy is being added from an external source. To such a biologist, the growth of a plant from a seed, the development of an adult from an embryo, and the evolutionary development of new species up the phylogenetic scale, are all examples of such finites, local negations of the entropy principle. But I would argue that the last example, evolutionary development, is qualitatively different from the other two. In the case of growth from an embryo to an adult, or from a seed to a tree, there is no spontaneous increase in order because all the ordering information is encoded in the genetic system of the embryo or seed. Evolutionary development is utterly different; and indeed it has been shown repeatedly that the first initiation of any process of self-replication must be rejected as so statistically and thermodynamically improbable that only the most committed materialist could believe it.

(4) I raise one more question, one that has appeared more and more regularly of late. It is epistemological: What evidence would I permit to stand against all this creationist theorizing? The verification principle of Ayers has been accorded a decent burial; but this falsification principle has been put to me quite forcefully. The first time I faced it, in Cambridge, England, I was unprepared for it and answered rather lamely. Upon further reflection, I think I would say three things.

First, whereas creationists need to face the falsification principle squarely, committed evolutionists need to face it even more. How much evidence, and what kind of evidence, would force the evolutionist to abandon the theory of evolution?

Second, the falsification principle is usually restricted to testing single propositions. It is more difficult to handle when applied to complex theories with many propositions, only some of which are essential to the theory, while others are negotiable. One

ought to be able to apply the falsification principle to most, if not all, of the essential propositions which make up the theory; and in that case any one of these falsification tests would serve as a test of the entire theory. The only way to escape, should any essential proposition prove false, would be so to modify the theory that the false proposition would no longer be essential to it.

That brings me to the *third* reflection. If there were one piece of hard evidence that would make me abandon the creationist position, I think it would be the discovery of stratified fossils which show the smooth gradation required by the evolutionary model. There could be many others; but that, to me, would be a thoroughly reliable falsification test. And, I venture to say, it is the ability of Whitcomb and Morris to cope with the available data from sedimentary deposits that make *The Genesis Flood* as influential as it is.

What falsification test(s) will my evolutionist colleagues now be prepared to accept?

A Select Annotated Bibliography of Books Written Since The Genesis Flood

The number of books and papers being written in the area of evolution and Christianity is increasing exponentially, and I almost hesitate to make a selection. I shall limit myself to those I have found most helpful; and, for convenience, when a book has been published in several countries by different publishers, I shall refer to the company that produced the one I happen to possess.

Most of the following authors are Christians, but not all of them. Those who are do not always agree with one another; but that should cause no one any concern as neither do the evolutionists. One of the most important lessons to learn is how little is really universally agreed in the science/religion interface.

I begin with two stimulating books written by non-Christians. The first appeared just before *The Genesis Flood,* but came into prominence only after it. It is called *Implications of Evolution.* Written by G. A. Kerkut and published by Pergamon Press in 1960, it raises biological problems of evolutionary theory from within the framework of commitment to that theory as a working

hypothesis. Less technical but more trenchant is N. Macbeth's *Darwin Retried: An Appeal to Reason* (Gambit, 1971). Macbeth, a retired lawyer, has read extensively, and still accepts evolution in the large sense; but he is a deadly foe of illogical arguments, inconsistency, unfounded assumptions, invalid conclusions, and the like. Since these things constitute an embarrassingly high proportion of evolutionary theory, Macbeth becomes an impressive protagonist.

An important book for Christians is F. Schaeffer's *Genesis in Space and Time* (Hodder, 1972). Theistic evolutionists often tell us that Genesis 1-11 cannot be taken literally; but rarely do they tell us just what these chapters actually do mean. Schaeffer unfolds the minimum theological content, the least that God is saying in this part of his Word, if the Bible as a whole is to make sense. He does not solve all the problems, and on some points I think he gives a needless amount away; but his book is a good place to start, and, implicitly, a limiting factor to careless generalizations.

There are several general works on science and Christianity which are helpful. Showing us where present trends are leading us are Denis Alexander, *Beyond Science* (Lion, 1972), and some chapters of Os Guinness, *The Dust of Death* (IVP, 1973). Two standard works are those by M. A. Jeeves, *The Scientific Enterprise and the Christian Faith* (IVP Tyndale Press, 1969), and Bernard Ramm, *The Christian View of Science and Scripture* (Paternoster, 1964). Both of these men take a theistic evolutionist line, and Ramm holds to a limited flood; but they are important nonetheless and deserve a careful reading. More concerned with the question of evolution *per se* is a symposium edited by Russell Mixter, *Evolution and Christian Thought Today* (Eerdmans, 1960). Again, however, I would say that most of the essays in this volume give too much evidence to the transient claims of science. Another symposium of some worth is *Rock Strata and the Bible Record,* ed. P. Zimmerman (Concordia, 1970). The contributors are far from agreeing; but the discussion is competent. There are some fascinating pictures of how several so-called "hominid" skulls could be fleshed out to make a perfectly believable modern man.

After the publication of *The Genesis Flood,* J. C. Whitcomb authored two slimmer volumes more suited to the reader untrained in the sciences. They are *The World that Perished,* (Baker, 1973) and *The Early Earth* (Baker, 1972). Both deserve wide circulation. Equally popular is H. Enoch's *Evolution or Creation* (Puritan, 1967).

Two of the most impressive books have come from the pen of A. E. Wilder Smith, who has three earned doctorates and is head of Pharmacology at the Medical Center in Illinois. Despite his professional competence, his books are readable: *Man's Origin, Man's Destiny* (Shaw, 1968), and *The Origin of Life: A Cybernetic Approach to Evolution* (Shaw, 1970). Neither volume has received the attention it deserves. Well worth buying, also, is Bolton Davidheiser's *Evolution and the Christian Faith* (Presbyterian & Reformed, 1969). Davidheiser earned a Ph.D. in genetics before becoming a Christian. The transformation prompted him to re-think his entire world-view, especially the relationship of Christianity to his own discipline. This book is the result. It is a trifle polemical in tone and not very well organized; but it boasts masses of detailed documented information. Evan Shute, *Flaws in the Theory of Evolution* (Presbyterian & Reformed, 1961), likewise picks up many points of detail. His discussion of cranial capacities is most helpful. Unsurpassed in its field is the book by J. W. Klotz, *Genes, Genesis and Evolution* (Concordia, 1970).

From the point of view of anthropology, R. Laird Harris, *Man — God's Eternal Creation* (Moody, 1971) is a helpful place to begin. Two important books in the area of the history and philosophy of modern science have been written by G. W. Clark, *The Philosophy of Science and Belief in God* (Craig, 1972), and R. Hookyaas, *Religion and the Rise of Modern Science* (Scottish Academic Press, 1972); but they should be read against the background of some such critical work as *Issues in Science and Religion,* ed. I. G. Barbour (SCM, 1966).

Creationists with an M.Sc. or more, in one of the physical sciences, may join the *Creation Research Society* (CRS), a break-away from *The American Scientific Affiliation* (ASA). The CRS publishes a quarterly, and from time to time reprints important

articles in symposia fashion. These are of mixed value; but some very substantial work has appeared in this form. At least four volumes have appeared (Baker). The CRS has also produced its own junior high school text-book of biology. Edited by J. Moore and H. S. Slusher, it is called *Biology: A Search for Order in Complexity* (Zondervan, 1970), and deserves to be read by all high school students who are studying the biological sciences. The ASA, by contrast to the CRS, typically supports theistic evolution in its journal (JASA).

The CRS is restricted in its membership to the technically competent. However, there is another group which caters to the scientifically untrained. It is call the Bible-Science Association, and prints a monthly paper (8 pages of newsprint) called the "Bible-Science Newsletter", containing some low-level science articles, news of the creationist movement, and some helpful bibliographical details. The address is Box 1016, Caldwell, Idaho 83605, U.S.A. My chief hesitancy in mentioning them is their lack of discrimination. They have occasionally backed wildly speculative work, or ultra-conservative books.

On Genesis 1 itself, the best buy, in my judgment, is still E. J. Young's *Genesis One* (Presbyterian & Reformed, 1964). However, this is a technical piece for students who have kept up their Hebrew. Almost as good, and much less technical, is F. A. Filby's *Creation Revealed* (Revell, 1963).

My knowledge of the literature in this whole area is far from exhaustive; but the above works are among those I have found most helpful. Above all, I never tire of opening the Scripture and reading afresh the account of origins and pre-history left us by the Holy Spirit himself.