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RESEARCH SCIENTISTS' CHRISTIAN FELLOWSHIP

THE CONTINUING CONFLICT

An Approach to some aspects of Christian
Apologetics

by

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I N T R O D U C T I O N

If the reader is looking for a book that will solve all his intellectual problems concerning Christianity and Science in five minutes of light reading, then this book is not for him.¹

Regrettably I am unable to recommend any such simple book to him, for the only books that I know of which purpose to do that have been written by authors who have not perceived the nature of the problems involved.

The aim of this book is not to present ready-made solutions to all such difficulties, though possible solutions are often proffered, but rather to suggest lines of approach whereby the student might be helped to attack such problems in his own field. A good deal of space is given to problems that are thought to attend the theory of evolution, because these, even a hundred years after the publication of Darwin's "The Origin of Species", are still a major difficulty for many Christian students and are not dissimilar to those raised by other scientific discoveries.

The plan of this book is to outline the areas of alleged conflict in Chapter One and then to consider certain general principles of apologetic importance in the next seven chapters. After this long, but necessary detour in chapters Nine to Twelve we apply these general principles, in outline at least, to the problems raised by the theory of evolution.

This book is written by one who accepts "The divine inspiration and entire trustworthiness of Holy Scripture, as originally given, and its supreme authority in all matters of faith and conduct",² while at the same time believing that a Christian must avoid, at all costs, any form of obscurantism. The issues involved must be fairly faced and the scientific evidence duly considered.

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2 The Doctrinal Basis of the International Fellowship of Evangelical Students.

Chapter 1

AN ATTEMPT TO STATE THE PROBLEM

To many people the mere mention of the words "Science" and "religion" is enough to bring to mind a third word, namely "conflict". Such has been the unhappy result of the last hundred years of argument. Whilst the debate has largely centred upon the question of evolution, many larger and more important issues have also been raised, for example, the possibility of miracles, of the Incarnation, and indeed of the very existence of God Himself.

If a lot of space is used in discussing some aspects of the evolutionary question, it is not because the author believes this to be the most important aspect of the problem, but rather, because it can be so easily used to demonstrate the mistakes on both sides since so much has been written upon it.

It is necessary to try to locate the exact area of the supposed conflict. There are several aspects of this conflict. The first is put in a sweeping statement by A.J. Pollock "You cannot intelligently believe in the evolutionary theory and believe in the Bible".¹ Thus he sees what he believes to be a contradiction between the statements of scripture and the statements of the theory of evolution. A similar view is held by John I. Paton, writing in the foreword to Hand's book, when he says that "the evolutionary hypothesis² is diametrically opposed to what Genesis teaches in creation".

In making these statements the writers seem to be quite certain as to the exact meaning of Scripture and as to the full implications of the theory of evolution. However, further consideration will disclose that certain quite serious problems of Biblical interpretation have been overlooked, and that these writers, like most writers in this field, have an inadequate grasp of the scientific data. Often non-Christian writers have taken the same attitude, namely, that the situation is one of the Bible or evolution, but not both, only in their case they have used the theory of evolution to attack the Bible.

Some Churchmen have sought to escape the conflict between Science and Scripture by denying the truth and importance of the Old Testament. This is not the place to discuss the theological consequences of such action, but even this scrapping of a great part of the Christian heritage does not resolve this conflict. For the conflict now approaches a second more philosophical aspect. This may be illustrated by a statement made by C.P. Swanson when discussing the Cell Theory, the Theory of Cell Lineage, The Chromosomal Theory of Inheritance and the Theory of Evolution. He says, "implicit in them are two fundamental principles, that of inorganic and organic continuity, and that of random chance rather than predetermined

purpose."³ The idea that evolution necessarily implies the absence of purpose is one that is raised in both Scientific and Christian circles. Carl F.H. Henry states "The basic tension is still between the concept of a personal Creator -- God and that of an impersonal chance process."⁴

Another example of a statement to this effect, this time by Biologists, is that found in "Life".⁵ The authors claim imperfections in organisms, and state that there is no purposeful design but rather that organisms are a product of a long, blind, unplanned history.

There is also a third area of what may be called theological conflict between the Christian faith and evolutionary theory. Most of this supposed conflict centres upon the doctrine of the fall of man and original sin, but other theological issues are also involved as well.

The fourth area of supposed conflict is in the field of ethics. It is claimed that evolution with its idea of survival of the fittest justifies war and all types of exploitation of the weak. R.E.D. Clark⁶ discusses this supposed result of the theory of evolution.

While there is no doubt that "evolution" has been used for these purposes, few modern biologists would support such actions, though this, in itself, cannot be taken to prove these attitudes do not logically follow on evolutionary theory.

Having outlined the areas of conflict it is necessary to examine each area in some detail. Before this can be done, some basic issues must be considered. Accordingly, in the following chapters, we will discuss such things as the logical structure of knowledge, both scientific and theological, presupposition in knowledge, the world of nature, some principles of Biblical exegesis and the way the Bible deals with the concepts of chance and causation. All this may seem a long detour from our discussion of these areas of conflict, but, unless some of these basic principles are clearly defined, no cogent analysis can be made.

- 1 A.J. Pollock, Evolution: Unscientific and Unscriptural, P.45.
- 2 John Raymond Hand, Why I accept the Genesis Record, Lincoln, Nebraska, Back to the Bible Publishers, (1959), P.3.
- 3 Carl P. Swanson, Cytology and Cytogenetics, London, Macmillan, (1958), P.533.
- 4 Carl F.H. Henry in Evolution and Christian Thought Today, (Ed.) R.L. Mixter, London, Paternoster Press, (1959), P.190.
- 5 G.G. Simpson, C.S. Pittendrigh and L.H. Tiffany, Life, an Introduction to Biology, (1957), P.86-87.
- 6 R.E.D. Clark, Darwin Before and After, London: Paternoster Press, (1958), P.100-121.

Chapter 2

THE LOGICAL STRUCTURE OF KNOWLEDGE

It is frequently asserted by some people, that Evolution is only a theory, not a fact, as if this discredited evolution; others assert that evolution is so well established that it should be considered to be a law of science. Both statements show a failure to grasp the difference between laws, facts and theories. A theory does not become a law by being confirmed. Theories and laws are formulated by different logical processes.

There are three distinct logical processes involved. There is the process of induction where one has a number of objects of a similar type and one can make a generalisation about them, for example -- "This is a magpie and it is black and white; here is another magpie and it is black and white", and after inspecting a number of magpies we conclude by induction that, "All magpies are black and white". In induction we go from a number of particular examples to a general statement of the same kind. The difficulty with induction is that it is always possible that an exception might turn up. A European of the seventeenth century after visiting London, Paris and Moscow might well have concluded that "All swans are white". This would have been a reasonable conclusion until black swans were found in Australia and black and white swans in South America. The generalisation would then have to be altered to either "All native European swans are white", or, "All swans are white, black or black and white". From this it might appear that Natural History generalizations and scientific laws can be disproved, but never proved. However, the situation is not quite as simple as this. But first the case of the scientific law should be considered.

A law is not a simple generalization but one of the third or higher order. Consider Boyle's Law "For a given mass of any gas at constant temperature the pressure varies inversely with the volume". (In considering this from a logical viewpoint we shall ignore certain deviations from the law.) Here is an enclosed mass of gas, at constant temperature. The pressure and volume are read. If some time later this experiment is repeated, for the same volume we measure the same pressure, so a first order generalization could be formed "For this mass of gas at this temperature when the volume is A ml the pressure is always B mm of mercury". If the experiment is repeated for different volumes then new values of pressure will be recorded and these are found to be inversely proportional to the volume. Thus a second-order generalization may be made. "For this mass of this gas at constant temperature the pressure varies inversely as the volume." Now if the experiment is repeated with different masses of the same gas the third-order generalization may

be made, "for any fixed mass of this gas at constant temperature the pressure varies inversely with the volume." Then if different gases are used a fourth order generalization can be made; "For any fixed mass of any gas the pressure varies inversely with the volume." It is not suggested that all laws are fourth-order generalizations, some will be third-, others may be fifth- or perhaps higher. The point is simply that a law is a complex generalization of generalizations, each process of which is an inductive process. Of course discoveries of laws do not often follow exactly the above process, but this is their logical status.

Now to the question, can one exception disprove a law, or, for that matter, a natural history generalization? The two cases are more similar than some writers think. Toulmin¹ draws a sharp distinction between natural history and physics, but in doing so reveals his inadequate understanding of the methods of biological sciences. If we find an albino magpie we do not discard the general statement "All magpies are black and white" because there seems to be a type of logical insulation of "All normal magpies....." If we find in the genetics laboratory an eight legged fly we do not discard the biological generalization, "All insects have six legs", nor do we conclude that it is not an insect.

In spite of these reservations both laws and natural history generalizations are related to the facts of nature by a process of induction. One may also note that Biblical Theology is related to the facts of scripture in many cases by the same inductive process. In other cases there may be an involved diagnostic process.

Some theologians will question this, maintaining that their theology is deductive and not inductive, and there may be some examples of deductive reasoning in their theology, but in most cases this writer believes that they have not carefully enough examined their methods from the standpoint of logical structure.

Theories are formed by a different logical process, that of Retrod-uction or Abduction. This is in principle the same process that a detective uses when from a number of quite different clues he reconstructs the crime. The scientist, working either from known laws, natural history generalizations, isolated facts or a combination of these comes upon a unifying idea which would account for all the laws, etc., in terms of one theory. In physical science the Kinetic Molecular Theory explains the gas laws, the law of combining gas volumes, etc., in terms of certain definite postulates. The theory of Evolution comes into this class, it unifies a vast body of biological data which otherwise would be unconnected. Abductive reasoning involves the formulation of a general theory or hypothesis from a number of "clues" which are different in type to the postulates of the hypothesis; there is no simple generalization involved. Speculative theology is related to Biblical theology and the facts of scripture in a similar way.

Both inductive and abductive reasoning are tested by the third logical process, that of deduction. This type of reasoning which goes from the general to the particular enables predictions to be made. If we take a true generalization as our major premise, "All magpies are black and white", and as our minor premise, "This is a magpie", then the conclusion must follow "This is black and white". Now let us take a false generalization "All swans are white", "This is a swan", then "This is white" must follow as the logical conclusion. But if this swan is in fact black then the reasoning is not at fault but the generalization has been disproved.

From either a law or a theory predictions can be made. If these predictions can be confirmed by either experiment or observation, this adds weight to the probable truth of the law or theory. There is a sense in which one is never able to check all possible predictions of a law or theory and therefore there always remains what Waisman² would call "open texture". Thus no law or theory is ever demonstrably true, though they can be established beyond all reasonable doubt; that is, they may be shown to be conclusively true.

It is vastly easier to make and test predictions made on the basis of the Kinetic Molecular Theory than those made on the basis of the Theory of Evolution. However, some predictions based on the theory of evolution have been made and tested. Where we have reason to believe, on the basis of Geology or Palaeo-climatology, that a species once ranged over a large area and was then divided into two or more geographically isolated communities by such isolating factors as sea, mountain ranges, deserts (or land in the case of marine animals), it would be predicted on the basis of the Theory of Evolution that the two populations of the species would have diverged from each other; and, provided sufficient time had elapsed, the populations would have evolved into two similar, but distinct species. Many such species pairs have been studied in very diverse groups of living organisms. This is one example of how weight can be added to a Theory by a deductive test.

Before concluding the chapter the nature of "interpretation" must be considered. It is this process that enables us to pass from the physical world to the facts of nature and from Scripture to the facts of scripture.

Magpies do not carry labels, "I am a Magpie and I am black and white". Of all the attributes of the bird, and these are infinite, we have selected the fact that it is a magpie and that it is black and white. There must be a certain subjective element in such selection of data. Then also there is the question of the significance of the sense experience that we have. This problem is present whether the sense experience comes in the form of printed words as in Scripture, or from visual images seen on looking down a microscope, or in any other form.

It should be apparent that before one can have just ground for making

a statement like that of Pollock, that "You cannot intelligently believe in the evolutionary theory and believe in the Bible"³, it would be necessary to be sure of the correctness of the interpretation of scripture and of scientific writings on which this conclusion is based. It would be also desirable to have some appreciation of the logical levels at which the supposed contradictions are said to occur.

- 1 Stephen Toulmin, The Philosophy of Science, London, Hutchinson University Library, (1953), passim.
- 2 F. Waisman, "Verifiability" reprinted in Logic and Language, (First Series) Ed. A.G.N. Flew, Oxford, Basil Blackwell, (1955), p.120 ff.
- 3 A.J. Pollock, Op.cit, P.45.

Philosophy and Metaphysics

Inferences Both Ways

Inferences Both Ways

Theory

Speculative)
Philosophical) Theology

(Abduction)

Tested by Deduction

Abduction

Tested By Deduction

Laws A.B.C. (Third or Higher Order Generalizations)

Biblical Theology

(Induction)

Natural History Generalizations 1st & 2nd & 3rd Order

(Induction)

Tested by Deduction

Facts of Nature 1,2,3,.....n

Induction

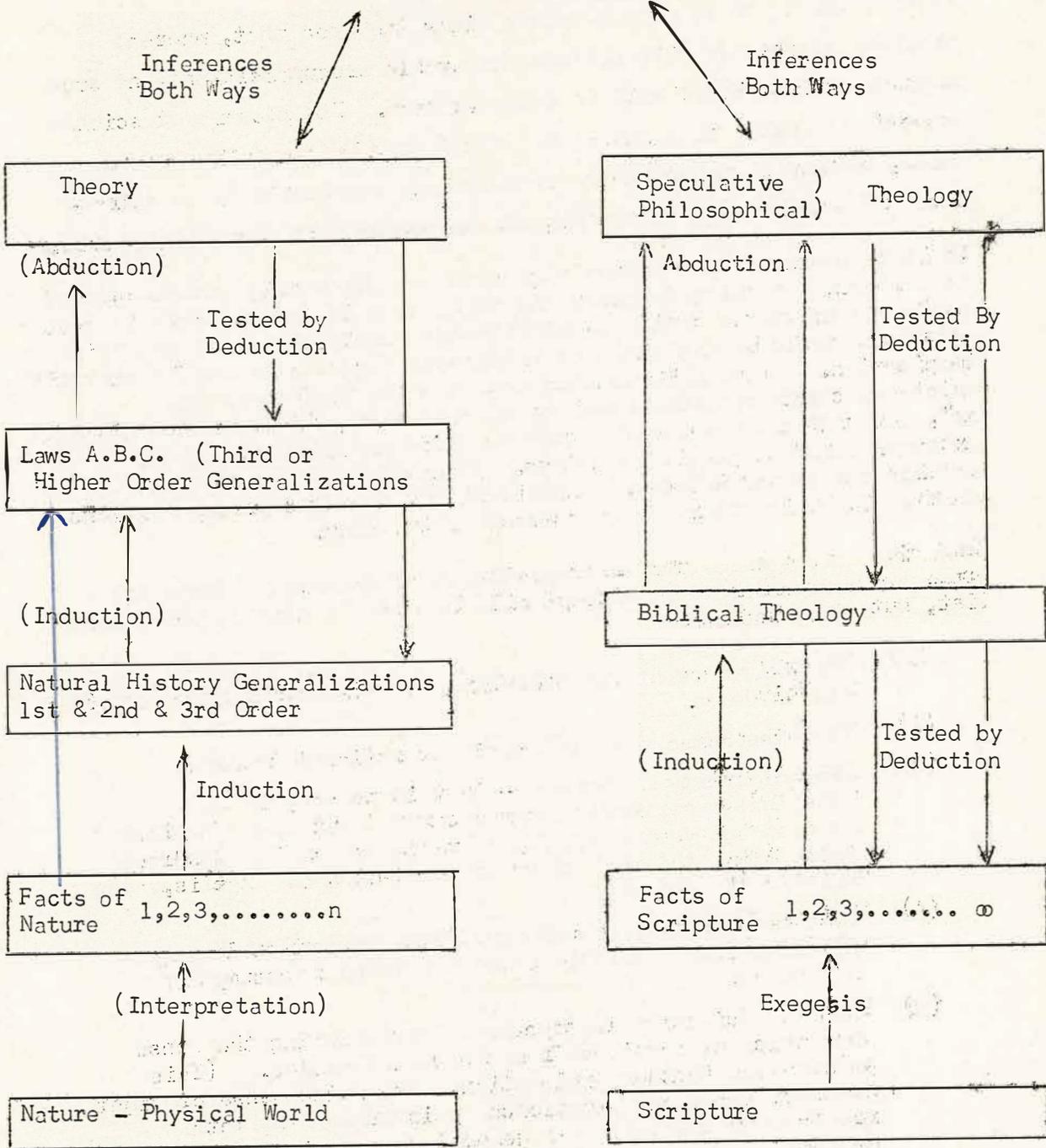
Facts of Scripture 1,2,3,.....∞

(Interpretation)

Exegesis

Nature - Physical World

Scripture



PRESUPPOSITIONS IN KNOWLEDGE

There seems to be in many people's minds the idea that, whereas theology starts off with certain unprovable presuppositions, no such weakness exists in scientific investigation. The picture of science accepting nothing that cannot be proved and, by carefully proved steps, moving on relentlessly to a certain conclusion is an attractive and popular one. However, it has the defect of not being true.

If it be demanded that everything should be rigorously proved, proved to the point of being demonstrably true, then it is uncertain if even one's own existence could be established; certainly other people's existence could be explained as being only figments of the "observer's" imagination. Some philosophers have claimed that their own existence could be established by the statement, "I think therefore I am", but this does not enable them to gain any knowledge of the external world of people or things. If nothing is assumed then nothing can be established. All knowledge involves presuppositions whether it be in the realm of science or theology.

What then are some of the presuppositions of science? These are numerous and therefore no attempt will be made to give an exhaustive list, but they include:-

- (1) The existence of the scientist, of other scientists and of the Universe.
- (2) That the human mind is capable of rational thought.
- (3) The Uniformity of Nature -- that is to say, if an identical experiment that was carried out today had been carried out yesterday, 10,000 years ago or in a hundred years time, the results would be identical. That is, the Universe is orderly.
- (4) That the Universe is coherent, and, in part at least, intelligible. This is closely related to assumption (2) above.
- (5) That the Scientist is capable of interpreting the sense data which he received from the world outside. (This point needs further explanation. Even the sense of sight needs training and experience to interpret the data received by the eye. In general we perceive what we expect. If one is confronted with an entirely new situation then the data is often misinterpreted. The difficulty that first year students have on first using a microscope is a well-known example of this. Likewise, when English painters first tried to paint Australian Gum

Trees they represented them in the form of the familiar European trees, presumably because this is what they perceived, because this was how they expected trees to appear.)

- (6) Certain ethical qualities of honesty, respect for truth, etc., in the observer.
- (7) Certain special presuppositions directly related to the subject in hand, e.g. the Axioms of Geometry.

It is important to realise that because a proposition is assumed, it is not in any sense necessarily untrue, but its truth has not been proved. The importance of this should be clear a little later on.

Many of the presuppositions of science are the same as those of other disciplines including theology, e.g. (2) above.

Although it is not possible to prove these presuppositions, it is often possible to show that they are reasonable. If we use these presuppositions and carry out logical and experimental procedures we reach certain conclusions about the world about us. The fact that these conclusions are self consistent is NOT evidence for the truth of our presupposition, but only for the validity of our logic.

However, if our conclusions are both self-consistent and correspond to the world of things, then this is evidence that would tend to support the truth of our presuppositions. But even this does not prove demonstrably that they are correct, it only gives support for these ideas. This same general argument applies to theological as well as scientific presuppositions.

At this stage it should be noted that using different presuppositions, different coherent systems may be erected. Most of us are acquainted with Euclidean geometry which is built on a certain set of axioms, but by using different axioms it is possible to develop various non-Euclidean geometries - some of which have been found to be useful in certain fields. With different presuppositions quite different conclusions can be reached.

For the purpose of scientific investigation it is usually necessary to reduce the number of variables as far as possible. If possible we keep everything constant except two variables; one of which is varied and the effect upon the other is noted, e.g. the mass of gas and the temperature is kept constant and the pressure is varied and the volume is measured in the familiar Boyle's Law Experiment. The fact that the mass of gas and the temperature are kept constant does not mean, of course, that they are unimportant; but for this particular experiment, if studying the relation of pressure and volume, they are not relevant and if varied would prevent the simple relationship of

$v \propto \frac{1}{p}$ from being apparent. If it is impossible to control certain

factors, which may prove later to be important, it is sometimes necessary when carrying out the experiment to assume either that they are irrelevant, or that for the duration of the experiment they will remain constant in their action, thus not invalidating the results, so permitting the relationships under investigation to become apparent. Here we have an additional type of scientific presupposition .

If after experimental work certain conclusions are reached, the truth of these conclusions will depend upon the truth of the presuppositions. (Though sometimes true conclusions are reached from false presuppositions and false conclusions from true presuppositions, but in these cases either the reasoning or the experimental work is at fault, or in some way the false presuppositions contained compensating errors.)

Now if our presupposition is A and our conclusion is A then we have argued in a circle and proved nothing. On the other hand if our presupposition is A and our conclusion is $\sim A$ then our reasoning or experiment must be at fault. However, if our presuppositions are (A + B) and our conclusion is $\sim(A + B)$ then it could be that the presupposition A is inconsistent with the presupposition B.

All this sounds very up in the air, but it can be vital in Christian apologetics. Sometimes one reads statements to the effect that, "From the results of these investigations one can see that Theological Design and purpose are excluded from the Universe." Such a statement forms the philosophical conclusion of someone's attempted scientific reasoning. This sort of conclusion can be shown to be logically invalid if it can be shown that either it was assumed in the presuppositions, or that its opposite was assumed in the presuppositions, either implicitly or explicitly.

The argument would also be invalid if it could be shown that this type of conclusion cannot properly be drawn because, for purposes of handling the data and general simplification, factors relevant to this type of conclusion or its opposite are neglected.

As the presuppositions connected with Science are often not recognized and seldom stated, it should be no surprise if this conclusion is both contained in some presupposition and its opposite is assumed in others.

The type of "scientific" conclusion just referred to is, of course, the result of a naturalistic philosophy. C.S. Lewis³ has attempted to show that naturalism involves a self contradiction. His argument takes the following line: For science to be true, human reasoning must be valid, thus any true account of the Universe must be such as to allow our thinking itself to give a real insight into the nature of the Universe, but thought is not valid if it is completely explainable as the result of irrational causes. Thus it follows that a theory is inadmissible if it makes the human mind the product of irrational causes. (Quite clearly justice cannot be done to Lewis' argument in so short a space and the reader is referred to the original book.)

Applying this argument of Lewis' to the conclusion that "Theological Design" and purpose are excluded from the universe, we get the following. If there is no design in the universe, then the human mind is not the product of design. Then there is no reason to believe that thought is valid. Hence there is no reason to believe that the conclusion, that there is not design in the universe, is valid.

The conclusion that there is no design or purpose requires, to be valid, the presupposition that the human mind is capable of logical thought, but this, on Lewis' argument is only reasonable if the mind is the product of a rational Mind. Thus this seems to be a case where the conclusion $\sim A$ requires as its presupposition A and this would indicate the existence of a fallacy in the original argument against design.

There is, however, another, more serious, objection to the conclusion to a scientific discussion that Theological Design and purpose are excluded, and this is that this conclusion cannot be drawn because the relevant questions were never asked.

The success of the scientific method is due in no small part to its considering phenomena in isolation, with a limited number of variables, of its asking questions that can be answered by experiment, questions about mechanisms, "how?" and not "why?" in a teleological sense. But because science does not ask teleological questions it is not entitled to answer them, either in the affirmative or the negative. Hence the above teleological conclusion of a negative kind is completely out of order.

Toulmin⁴ maintains that questions as to the purpose of phenomena are questions that physicists, as a result of their work, no longer see as questions that require asking. Later he refers to these questions as "particularly fruitless" and in this latter statement, from the point of view of scientific method, he is correct. However, because scientific method cannot yield an answer to a particular question, this is not to say that it does not require asking or that it is meaningless, and to say that it does begs the whole question of the scope and limitations of science. Other questions not amenable to scientific method include "What is just?" "What is good?" "What is beautiful?"

The author is inclined to believe that without Theistic presuppositions one will not see design and purpose in the universe for it is

"By faith we understand that the worlds have been framed by the word of God"⁵

and not merely by observation and experiment.

- 1 See N.R. Hanson, The Concept of the Position, Cambridge, (1963).
- 2 This sign has a precise meaning: see P.F. Strawson, Introduction to Logical Theory, London, Methuen, (1952), P.78. The sign may be read as "not" in this book.
- 3 C.S. Lewis, Miracles, London, Geoffrey Bles, (1947), Ch.3.
- 4 Stephen Toulmin, Op. cit., P.55.
- 5 Hebrews 11:3, R.V.

Chapter 4

PRINCIPLES OF BIBLICAL INTERPRETATION WITH SPECIAL REFERENCE TO APOLOGETIC PROBLEMS

It is not intended in this chapter to consider all aspects of Biblical exegesis, but rather to consider some of those aspects that impinge upon Christian apologetics. (Those who desire a more general account are referred to "Biblical Interpretation", by A.M. Stibbs (I.V.F.) or "The New Bible Handbook", edited by G.T. Manley (I.V.F.) and to an interesting article by E.F. Kevan on "The Principles of Interpretation" in "Revelation and the Bible", (Tyndale Press).

First it is necessary to find out what the text actually states and what is the condition of the text. If the text under discussion is either missing from the best manuscripts, or is one for which there is a number of different readings, effort defending a given reading will not be well spent. Assuming that there is no textual difficulty we must ascertain, to the best of our ability, the meaning of the text. This is not always simple. The meaning of a word may perhaps be described as an area rather than a point, and words in different languages that are approximately equivalent may in fact cover overlapping areas. Hence the meaning of a word may be slightly shifted through translation. Some languages draw finer distinctions than others. The one English word "love" may be used to translate at least three Greek words -- agape, eros, and philia -- so in this case English has not the "resolving power" of the Greek. On the other hand, particularly in the technical field, and hence of importance in apologetics, English may have a large number of words which if translated into the ancient languages of Greek or Hebrew would have to be rendered by the one word. An illustration of this occurs in 1 Samuel 5:1-6:12. Here we read of mice and tumors; most likely we

are dealing with a rat-borne plague. Rendle Short suggests this is bubonic plague. He says "The Hebrews were not exact zoologists and no doubt their word "akhbar" included rats as well as mice." Thus in English we can make finer distinctions here than were apparently possible to the ancient Hebrews. It is important to realize that scientific usage often draws finer distinctions than are usual in common English. Thus the various species of rats are distinguished such as Rattus rattus, R. norvegicus, R. assimilis, R. lutreolus, etc. Of course, common names exist for many of these but they are often not used with the precision of the scientific term.

This has important implications in apologetics. The hyper-traditionalist who endeavours to equate "kind" in Genesis 1 to "species" does not know what he is doing. The modern species concept could not be expressed in ancient Hebrew, in fact it would be very difficult to express it in every day English. An exact discussion of the meaning of "species" in the modern scientific sense requires an appreciation of technical biological concepts and a technical language.

The literary nature of the passage under study is, of course, of great importance. History, poetry, parable and allegory are not to be treated in the same way. In Psalm 18:8 (R.V.) we read.-

"There went up a smoke out of his nostrils,
And fire out of his mouth devoured;
Coals were kindled by it."

This of course is a poetic way of expressing the profound truth of God's power, but if we treated this passage as prose one could be led into serious error. In this case the genre of the passage is quite clear, but this is not always so. The early chapters of Genesis pose some problems as to their genre. It is possible that the Hebrews had literary forms which are unknown to us and this may explain certain of the difficulties.

The meaning of the passage to the original writers or hearers should also be determined, if possible. Doubtless some passages may have been written only for the benefit of future generations, but, if so, I would suggest that they are few in number and deal mainly with Messianic themes and not with scientific propositions. The normal situation when a Prophet spoke, or an Apostle wrote, was to deliver a message, albeit of eternal truth, that was relevant to those addressed and usually affecting the not too far distant future. There are, of course, some exceptions to this general statement. Sometimes a passage may acquire a deeper secondary meaning which can also be part of God's revelation to man, for example Isaiah 7:14.

It should cause no surprise that the process of revelation makes use of sound educational methods. Thus we find a development of concepts throughout the whole of Scripture. Revelation is progressive, not in the sense that the early parts are wrong, but rather are

they incomplete by themselves, and find their completeness in Christ Jesus himself. Thus it is possible to trace the developments of such important concepts as The Day of the Lord and Messianic Hope from the early Old Testament and to see these and other concepts filled out in the New Testament in a way that few Old Testament believers could have expected.

The exegetical significance of this is that the same word (or its equivalent in the Greek) may have a much richer connotation in the latter part of the Old Testament than in the earlier part and a still much richer fulfilment in the New Testament. If we read the complete New Testament connotation into the Old Testament passage, we may find ourselves with an unnecessary apologetic problem. This means that the context of any passage of Scripture is the whole of Scripture.

Verses must, of course, be considered in their immediate context as well. Questions that must be considered include to what or whom does the text refer, and at what time was it relevant and whose words are these? In Genesis 9:25, one verse of a difficult passage, Canaan, as a result of Ham's action, is cursed by Noah. This verse has been used to justify the South African's apartheid policy, yet nowhere in this passage does it say God cursed Canaan, but only Noah; nor does it give evidence that the South African negroes are in any way related to Ham. The descendants of Ham may have lived in Canaan, Egypt and a little to the south, but these people are not negroes but "white". Yet by neglect of the simplest exegetical rules an unchristian policy claims Biblical sanction!

Difficult and obscure passages, parables, allegories, etc., should not be used to interpret straightforward passages, but rather the reverse.

Evangelical Christians maintain that the Bible is true, but in what sense is this to be understood? Some have felt that this must mean exact scientific accuracy by twentieth century standard, but, if so, why not by those standards of twenty-first century science or even twenty-fifth? If the Bible conforms to the latter it will soon be apparent that we of the twentieth century will not be able to appreciate it, let alone those of the first century A.D. or earlier!

There seems to be a confusion of truth and accuracy. We often accept a statement as being true without demanding pointless accuracy. It would be sufficient for a witness in a law court to say that the traffic light was red. Any discussion as to whether it was a pure spectral red, a bluish red or an orange red would in the normal case be considered quite out of place.

Then again, if two young ladies were deciding what clothes to wear, it could be a question of some importance if one girl's coat was a blue red or an orange red. The plain answer that she was going to wear a red coat could be misleading. For exact scientific work it

may be necessary to specify the exact wave length to be used, but even this could be refined further. One could go on becoming more and more precise, and sometimes we must do this, but to use this scientific precision in a discussion about the colour of a traffic light at the time of an accident would not make our evidence more true, only ridiculous. The degree of accuracy that we use is a function of the purposes for which the information is to be used. A statement is regarded as true if it does not mislead a person who uses the information supplied for its designated purpose. The information could be accurate enough for other purposes, but it does not reflect upon the truth of the original statement if it is not. To illustrate this from Scripture: in 2 Chronicles 4:2 we read of the molten sea of the temple which was "ten cubits from brim to brim, round in compass.....; and a line of thirty cubits compassed it round about." Now these figures convey an idea of its size and as such are true and satisfactory, but it is reported that some folk endeavoured to establish a value for π from them. This is quite simple:-

$$\pi = \frac{\text{circumference}}{\text{diameter}} = \frac{30}{10} = 3.0000$$

So then we have established a value for π of 3.0000 from Scripture!

This of course is a complete misuse of Scripture, but it is still in a very rough sense correct. Suppose Scripture was to possess the kind of exactness that these folk expected, what would it have read? Thirty-one cubits, 31.4159 cubits or 31.415926536 cubits? Even today it could not be written with the exactness required by these hypertraditionalists, and it never will be able to be so written because of the nature of the ratio involved. This is not to mention that neither the Hebrew number system nor their system of measures nor their tools of measurement were capable to such exactness. Even if they had been capable this would not have furthered the purpose of Scripture.

Paul tells Timothy that Scripture is "profitable for teaching, for reproof, for correction, for instruction which is in righteousness: that the man of God may be complete, furnished completely unto every good work" (2 Timothy 3:15&16). The accuracy of Scripture is such that it can perform this task. If one wishes to calculate π , or the date of the Exodus, one may well get an answer that is not hopelessly out, but there is no obligation upon Scripture to supply the precision that one requires. This failure to provide details which are not relevant to its purpose is not a reflection upon its truth but demonstrates its wisdom in not hiding its message under a mass of irrelevant detail.

1 Rendle Short, Modern Discovery and the Bible, London, I.V.F. (1957), p.125.

Chapter 5THE BIBLE AND THE NATURAL WORLD

It is not possible adequately to consider the various problems of apologetics until one has discovered how the Bible deals with what we would call natural events. There are at least two ways of discussing a given phenomenon. One way is to describe just what is detected by the senses, that is, what can be seen, felt, heard, etc. The other way is to consider the mechanisms that lie behind the phenomenon that has been perceived; that is, to attempt to give some theoretical explanation as to how the phenomenon occurred. This latter is now the province of modern natural science, which involves us in the postulation of theoretical entities such as atoms, electrons, molecules, genes, etc., and of various theories of the universe, for example, the expanding universe, continuous creation, etc. Many of these concepts, at the level of theory on our scheme, arrived at by abductive reasoning, have proved to be most useful in the sense of enabling applied science to go forward and of providing new fields for pure scientific research. However, at the same time, these theoretical explanations are subject to constant modification and sometimes even to rejection.

In ancient times, theoretical explanations often took a very different form. The daily passage of the sun across the heavens might be explained in terms of a god who drove his chariot across the sky. The Australian aboriginal stories of the Dream Time also come into this same class of explanation. Although these latter are very different in many ways from twentieth century science, they, like it, are attempts to get below the surface level of mere description of phenomena.

The question is, "which of these two methods does the Bible use?" This question is vital because if the descriptions in the Bible are postulational, that is if it attempts to give a theoretical explanation as to how natural events occur, then several difficulties must follow. Either the theoretical explanation is correct or it is wrong. If it is correct, what is its purpose? The concepts needed will have been beyond the understanding of those to whom the messages were originally addressed, and presumably also beyond us in the twentieth century, beyond even our best scientists. There is also the considerable difficulty as to how these finally correct theoretical explanations could be couched in a non-technical language such as ancient Hebrew or even Greek. The theoretical explanation could of course be wrong, it could be in terms similar to the Greek or Canaanite myths. However, close inspection of Scripture shows it to be peculiarly free from such myths. Hebrew literature may well be unique in this matter. This can be seen if one compares the Babylonian creation and flood stories with the Genesis account. The differences

are more striking than the similarities; the one is grotesque and polytheistic, the other is based on dignified ethical monotheism.

All this may lead us to expect that the Bible may describe the natural world as experienced by the senses. Ramm suggested "The language of the Bible is phenomenal".¹ This is indeed the only way in which the natural world can be discussed without becoming out of date when new discoveries are made.

The Bible speaks of God making "his sun to rise on the evil and the good".² The Bible is not teaching a particular view of the universe but it is making a theological statement about the care of God for man. The natural phenomenon is here considered in such a way that it corresponds to the common experience of man. Tomorrow, if you rise early enough, you may see for yourself the sun rise. The rotation of the earth about its axis is not only not relevant to the purpose of the Bible, but it is not something that could be observed when Scripture was written. (It may be observable in future of course, from somewhere out in space.)

The importance of the various scientific theories of the motions of the heavenly bodies is that they simplify the mathematical equations which man has produced to describe the apparent movement of the heavenly bodies. It is still possible to place one's frame of reference on the earth, but the resulting equations would be so much more complex that no scientist would consider such an idea.

If the language of the Bible is recognised as being phenomenological then certain important things follow for the study of Christian apologetics.

First we shall not try to twist certain verses of scripture to make them contain a given modern scientific theory. Two verses which have suffered this treatment are Hebrews 11:3 and Genesis 1:2. Hebrews 11:3 which reads "so that what is seen hath not been made out of things which do appear" (R.V.) has been twisted to contain a reference to the modern atomic theory with its electrons, etc.³ Ramm states that the brooding of the Spirit mentioned in Genesis 1:2 has been associated with de Broglie's undulatory theory of matter.

The other significant matter that arises out of this approach is that, when considering a verse such as Joshua 10:12 "And the sun stayed in the midst of heaven, and hasted not to go down about a whole day", we shall not necessarily start by postulating that this verse requires that the earth suddenly stopped on its axis, with all the resulting complications, but rather we will accept the phenomenon that was observed, and then consider how it could have occurred. (I should mention that there is some doubt as to just what the text does: in fact say appeared to happen, but this does not affect the argument.)

1 Bernard Ramm, The Christian View of Science and Scripture, The Paternoster Press, London, (1955), P.46.

2 Matthew 5:45 R.V.

3 Bernard Ramm, Op. cit. P.48.

Chapter 6

RANDOM CHANCE AND PREDETERMINED PURPOSE

It is common in biological writings to find statements like that of Swanson¹ quoted earlier, in which not only is evolution said to result from random chance, but this is said to preclude predetermined purpose. If this is indeed the situation, then there would appear to be at least a prima facie case for those who assert that Christianity and evolution are irreconcilable.

Before coming to this conclusion, it is necessary to examine more closely the concept of randomness or chance. What in fact is conveyed by this term, and how is it to be linked with biological evolution?

If event A is said to happen by chance, do we mean that it is uncaused? The answer is clearly "no". What we seem to mean is that the cause B could have given rise to any one of a series of events A, A', A'', A''' etc., and that there was no particular apparent reason why event A should occur rather than A''. Consider the traditional "chance" situation of tossing a coin. The tossing under gravity is the cause (B) of it landing, and if it lands head uppermost then event A is said to occur, and if tail uppermost event A'. Assuming that it is a normal coin and no peculiar device is involved we may consider that the probability of cause B giving rise to event A is 0.5 or 50% and that of it giving rise to event A' is 0.5 also. This is the sort of statistical notion that is in mind when it is said that there is a probability of say 1×10^{-6} of a mutation being beneficial to an

organism. To return to the coin-tossing case, the question is why, in a particular toss, the coin lands head uppermost. The answer to this is a complex series of physical conditions of the form:- the initial position of the coin, the exact place at which the force is applied, the duration of time during which the force acts, air resistance, the shape of the coin, etc., etc. A slight change in any one of these large number of factors may reverse the result and event A' will occur instead of event A.

The number of contributing factors (C, D, E, F, G, H, etc.) to event A occurring is so large that it is impossible for the tosser of the coin to reproduce all the conditions exactly and therefore with a normal coin either event A or A' is equally probable, but given all the factors in a given toss the result is not an accident, but is completely determined by physical factors even if they are not in fact known. The result of the toss is in principle, if not in practice, predictable. This is an example of what Barnes² would call

physical randomness. There is reason to believe that it is precisely this type of randomness that is present in biological situations.

Some may here object that physical science does know of an area in sub-atomic physics where Heisenberg's Uncertainty Principle operates and where behaviour of the sub-atomic particle is not even in principle predictable. If this is in fact true we have here a different type of randomness to our coin-tossing case. However, for this in any way to affect this argument, it would have to be shown that the outcome of a given biological situation was affected by the behaviour of a very small number of sub-atomic particles, the activities of large numbers of particles being calculable. It may be noted here that if this sub-atomic situation is in fact³ in principle indeterminate it opens a door to what C.S. Lewis has called the sub-natural. The effect that this could have on the Naturalist-Supernaturalist argument is mentioned by Lewis and is worthy of a closer study.

If biological randomness is what Barnes has called physical randomness the question will arise, "is the nature of this physical randomness such as to exclude the existence of predetermined purpose and plan?"

Before answering this it is as well to consider just where randomness does occur in biological situations.

The most often quoted example of randomness is the mutation process when a gene is changed from one allele to another, either "spontaneously" or under the action of some mutogenic agent such as X rays or certain chemicals. While the exact nature of mutation⁴ is not yet established it seems likely, if Watson and Crick are correct, that it results in a change in the sequence of purine and pyrimidine bases in the deoxyribose nucleic acid (D.N.A.) which is a major constituent of the chromosomes in which the genes are situated. It seems reasonable to expect that, although it is in practice impossible to predict what mutations will occur when an organism is subjected to a mutogenic agent, the situation would be in principle exactly like that of the coin-tossing case.

Another example of biological randomness is in the recombination of genes both in the separation and regrouping of chromosomes in meiotic division and also in the crossing over between homologous chromosomes. All this results in no two sperm or eggs carrying exactly the same genetic complement in a normal natural population. The selection of which sperm fertilizes a given egg is also one of randomness. This type of randomness is inherent in the production of each individual, and again there is reason to believe it is a case of physical randomness, which would be in principle predictable if all the forces acting were known, but which in practice can only be handled statistically.

Natural selection should be mentioned here, but this is not believed to be a mere random process otherwise, apart from genetic drift in small isolated populations, there would be little or no evolution.

Natural selection, or differential reproduction as it is often called, favours one phenotype as compared to another. The different phenotypes result from the mutation and recombination of genes. The causes of natural selection can, in some cases, be determined and its results even predicted. For example in some environments, with strong winds, a wingless insect may have an advantage over a winged form, thus one might predict that the wingless form would be selected. Such a wingless fly, *Belgica antarctica*, is found in windy Antarctica.

Therefore even if mutation were random, in the sense of being uncontrollable even by God (a situation that I do not believe to be the case), even then evolution need not be outside of His control provided selection can be controlled and sufficient mutations and recombinations occur. Since Man has controlled evolution by selection in domestic animals, there can be no problem in God doing more.

1. Carl P. Swanson, Op. cit., P.533.
- 2 Gordon E. Barnes, "The concepts of Randomness and Progress in Evolution", Journal of the Victoria Institute, Vol. 90, No.3, (Winter 1958), P.183.
- 3 C.S. Lewis, Miracles, Op. cit., P.24.
- 4 J.D. Watson and F.J.C. Crick, "Molecular Structure of Nucleic Acids", Nature CLXXI, (1953) P.737 f.
- 5 George A. Lland, "The Terrestrial Life of the Antarctic", Scientific American, Vol.207, No.3 (September, 1962), P.212-230.

Chapter 7

THE PROBLEM OF CAUSATION OF NATURAL PHENOMENA

If we consider a particular event A and we set about to determine its cause, what precisely are we doing? Often in scientific work we fail to notice the complex nature of causation, for by scientific method we simply try this problem so that we can handle it under laboratory conditions. We isolate the problem from its natural setting and try to work with a very limited number of variables. To take a simple case, we raise the temperature of a given mass of gas at constant pressure and measure the increase in volume. Here we try to have only two variables. We change one and note the effect on the other and so we can say the increase in temperature caused the increase in volume.

Consider the case of the assassination of the President of the Y republic. The question arises, why did he die? The police surgeon may say that a bullet entered his heart, and this is a satisfactory explanation of the cause of death, but a cell physiologist may say he died because oxygen was no longer available to the cells of his brain and therefore they ceased functioning and he died. Another person may say it was because the assassin had been taught to use a gun whilst doing his national service training. Yet again the assassination could be explained as resulting from an oppressive act that the President had proclaimed the previous week, whilst a psychologist might seek an explanation either in terms of the assassin's childhood or the social pressures that had caused the President to proclaim the particular act. And so we could go on and list a large number of things which were in some sense the cause of the assassination. In fact some sine qua non we would not usually consider under the heading of causes, e.g. in this case the discovery of explosives is certainly an indispensable condition to a man being shot with a gun, though we are not accustomed to thinking of this as a cause, (some such discoveries may have moral overtones, e.g. the discovery of the atomic bomb is an indispensable condition to a nuclear war though this is not the cause in a simple sense.)

Now consider the relatively simple case, say, I wish to build a house. I draw up certain plans of the house so that it is just as I want it, then I consult a builder who builds it, using tools. There is now a real sense in which I could say I caused that (and not some other) house to be built. The builder could, in a different sense, claim that he was the cause of that house being built, since he built it; and the tools could also be said to have made the house.

The point that I want to make from all this is that causation is not a simple concept; a great deal more could be said on this subject and should be, but now I wish to look at a quotation from "Life".

"The theory of natural selection shows how, in the evolution of life, complexity, design and apparent purpose have been brought about by causes that are as automatic and materially deterministic as the fall of Newton's apple or the circling¹ of the planets. Theological design and purpose are excluded".

This is a direct attack by some scientists upon Christian belief, but this is an example of a scientist falling into just the same philosophical trap that has also ensnared many evangelicals. The trap involves the assumption that if a physical mechanism can be produced for a given natural event then the activity of God is entirely ruled out. This assumes an altogether too simple concept of causation. Another philosophical mistake which we have already examined is the failure to consider the nature of scientific presuppositions which are clearly relevant to this conclusion. Thus quite apart from the question of causation that we are now discussing, we would maintain that this, because of the nature of scientific presuppositions, is not the sort of conclusion that can be validly obtained by scientific reasoning.²

Christians who have fallen into this same trap produce a "God of the Gaps". In doing this they allow that science has shown how certain things happen, but then they quickly point out that as yet science has not explained the origin of life, how this form changed to that, etc. Thus they find room for God in the gaps, those regions where scientific research has not yet yielded the answers, and allow science to explain those areas where it can be demonstrated beyond all doubt that it is correct. But as scientific research proceeds the gaps become less and less and therefore the "God of the Gaps" becomes less and less essential.

This type of thinking must be opposed whether it is by atheist or Christian for it fails to grasp certain important truths. It must be asserted that God usually uses means to accomplish his purposes. He sends the rain that plants may grow and mankind be fed, though he might have chosen some more direct method. In everyday experience Christians do not say that God does not act through people and things, but in some fields this same concept seems to raise difficulties.

Thus I wish to examine some scripture texts which assert the activity of God in areas where we have no difficulty in believing that the scientific mechanism is an explanation and a cause (at a certain level of meaning of that word) of the phenomena.

Psalm 118:24 reads, "This is the day that the Lord hath made." Do we feel any conflict between this verse and the scientific explanation that the revolutions of the earth on its axis produces day and night? Again Amos 4:13 referring to God states, "For lo, he that formeth the mountains and createth the wind...." Yet I have never seen a tract denouncing the idea that mountains are often formed by such processes as block faulting, folding, volcanic activity or differential erosions.

as being contrary to this verse. No difficulty seems to be experienced in accepting the idea that God used these mechanisms, which are the result of complex cause and effect chains, to make the mountains. The same argument also applies to the statement "creates the wind".

The Christian must assert that all the activity of "Nature" is in fact the activity of God, and the fall of Newton's apple or the circling of the planets, far from being an example of something that is independent of God are in fact part of the orderly plan of the Creator.

Natural generation is attributed to God in many parts of Scripture, but this is not taken to deny natural processes, most of which must have been, to some extent, known in Bible days. For example, "... He formed locusts in the beginning of the shooting up of the latter growth" (Amos 7:1). The production of grasshoppers is the activity of God though doubtless all the normal natural processes were involved.

1 G.G. Simpson, C.S. Pittendrigh and L.H. Tiffany, Op. cit, P.26.

2 Supra.

Chapter 8

MORAL OBLIGATION AND SCIENCE

From time to time there appear in the newspapers statements made by scientists as to what ought to be done about very many different issues. Many of these statements are reasonable and contain very good advice. However, there is a need for very clear thinking at this point as to the grounds on which such advice is given, otherwise we may find ourselves committed to programmes, aspects of which may appal us.

To illustrate this point I will take as an example one which has few emotive overtones. The simple case of Dr. A saying "logging of timber ought to be prevented in the water catchment areas." Now when Dr. A makes this statement he appears to be making a scientific statement, but is he? As a scientist he can say:-

- (1) Logging can cause erosion which will silt up the reservoirs.
The cost of partially repairing the damage will be quite high.

- (2) The presence of men in the catchment areas will make it possible for disease organisms to contaminate the water supply.
- (3) If these organisms are not to be a hazard then the contaminated water will have to be treated in some way.

These are simple scientific statements, the truth of which could be investigated by normal scientific methods, but none of these statements (or other statements of the same type) can be used as the sole ground for a statement of moral obligation that "logging of timber ought to be prevented...." All that the scientist can say, as a scientist, is that if you permit logging then these consequences will follow.

It is possible that you may think that these consequences, erosion, silting of reservoirs and disease, are good things and ought to be encouraged. If you do, I shall believe that your value judgments are wrong. Value judgments can not be made on scientific grounds alone and cannot be refuted on scientific grounds alone. The basis for value judgments must be found elsewhere. Scientific investigations can and do provide valuable information in the form: "if A is done then B will follow unless C happens", or, in simpler form "if A then B". This information can be highly relevant when deciding upon a course of action, but it cannot inform us that "A" ought to be done. It is not within the scope of science to provide a standard by which value judgments can be made; this must come from elsewhere.

It should be quite clear that it is not proposed to discuss from where this standard must come, or the relative merits of various standards, though the writer himself believes in a revealed standard.

The idea that science does not provide a value standard is not revolutionary, but is often in danger of being forgotten. Nor is this point one that is made exclusively by Christians.

Haldane states:- "A biologist can do two things besides discovering facts.... He can tell his fellows how to achieve ends which they desire already..... But he can never tell them what is worth doing. That is always an ethical, not a biological, question."¹

And Huxley says;- "Science is morally neutral; Science has no scale of values; only religion can help; only religion has a scale of values....."²

Christian scholars who take the same view include C.S. Lewis, who discusses the whole problem of values in "The Abolition of Man." In the second chapter of this book, entitled "The Way", he considers the possibility of erecting "real" or "basic" values instead of the traditional values represented by what he calls the "Tao". Under the terms "real" or "basic" values would be included in those attempts to erect a value system from science. Scientific statements are always

in the indicative: "If A then B", but value judgments, "Thou shalt.." "Thou shalt not....", "This ought to be....", are either in the imperative or conceal an imperative. Lewis points out that "either the premises already conceal an imperative or the conclusion remains merely in the indicative."³ Other Christian writers taking a similar stand include Clark⁴ who concludes that experience cannot furnish a ground for a universal moral obligation.

Bronowski⁵ argues for truth and value in science, and in a sense he is correct, but what he fails to do is to distinguish between values without which science could not function and values which are the product of scientific method. No-one, so far as I know, has tried to maintain that science could function without values. If most scientists did not show integrity in their published work science would soon be in chaos. The problems resulting from even one serious fake, namely Eoantronus dawsoni (Piltdown man) are sufficient to demonstrate the dependance of science upon common honesty. This however only demonstrates that science could not have continued to develop in a society which failed to take a high view of the value of truth. A strong case can be made out that many of the presuppositions of value, find their origin and justification in the Hebrew-Christian faith, but even if one does not accept this claim, it is apparent that the value presuppositions of science cannot themselves be the product of science.

If the approach that I have suggested is valid then we will treat with considerable respect all statements of the form "If A then B" that are made in the name of science, and these may be used together with value standards derived from elsewhere to make value judgments. However, when there is a statement made, in the name of science, of the form "A ought to be done", we shall look to see what value standard is being used -- being quite sure that, even if we find we can accept this standard, it must rest on some ground other than that of experimental science.

Perhaps it would be as well to consider one such value statement made in the name of science. In a Melbourne newspaper Professor G. Gamow Professor of Physics at the University of Colorado was reported as saying, while speaking of the problem of genetic load that is borne by the human race as a result of medical science,

"The only solution to the problem appears to be a modern-day Sparta in which children who do not measure up to set standards are killed off."⁶

Although some aspects of the scientific side of this article are open to challenge, let us assume it to be correct and examine his value judgments. These seem to include:-

- (1) That the human race ought not to perish.
- (2) That the continuance of the race into the future is of more importance than the lives of children here and now.

- (3) That any effects upon the moral character of individuals, and hence of the race, caused by the destruction of children would be of no consequence or would be outweighed by other factors.
- (4) That man is not answerable to any Higher Power for what he does with children or that the Higher Power would approve.

None of these value judgments can be backed by science because they are, by their nature, quite outside its scope.

All this is not to say that the problem of genetic load is not serious, or that a good case could not be made out from a Christian standpoint for not conceiving seriously deformed children, but these judgments as to what ought to be done rest upon ethical and not scientific grounds. How ethically desirable results can be accomplished may well be determined by scientific enquiry, but the goals, themselves, cannot be.

- 1 J.B.S. Haldane, "Human Evolution -- Past and Future", Genetics, Paleontology and Evolution, (1949), P.405.
- 2 J. Huxley, Quoted in Farrago, (3rd March 1949), P.5.
- 3 C.S. Lewis, The Abolition of Man, London, Geoffrey Bles, (1947), P.29.
- 4 G.H. Clark, "Special Revelation as Rational" in Carl F.H. Henry Ed Revelation and the Bible, Tyndale Press, (1959), P.35.
- 5 J. Bronowski, The Common Sense of Science, Penguin Books, London, (1960), Ch.8.
- 6 G. Gamow, The Sun, Melbourne, 14th January, 1960, P.3.

Chapter 9

BACK TO THE CONFLICT

An examination must now be made of the supposed conflict between the statements of Scripture and the theory of evolution. Before this can be done it is desirable to be quite clear that such things as the lengths of geological time, the order of the fossils in the stratigraphical sequence and the times and existence of the various Ice Ages are facts of geology and as such do not depend upon the theory of evolution for their veracity. Further, the evidence for these geological facts is so overwhelming that it is quite pointless to dispute them. The Christian Apologist is faced with two questions at this point. First, can Scripture be reconciled with the facts of geology? And second, what extra difficulties are raised by the theory of evolution per se and can these difficulties be reconciled with Christianity?

Most discussion has centred upon the early chapters of Genesis and in particular chapters one and two. Here also is the question of the literary form of each of these chapters and the relationship between them.

Many attempts have been made to relate the first chapter of Genesis to the facts of Geology. Some of these have been more reasonable than others. To be worthy of consideration, any such co-relation must do justice to the text of Scripture, expounded according to good exegetical practice, and to the facts of geology. Solutions which are unlikely and depend upon gaps in present knowledge are in danger of proving to be a broken reed.

Ramm¹ has discussed in some detail the various attempted reconciliations. There are, I think, three views worthy of serious consideration. Perhaps the oldest of these is the one that takes the days of Genesis and equates them to periods of time (not exact geological periods) and produces an overall general agreement. There are three objections to this theory that should be mentioned. There is the linguistic question of whether the Hebrew word translated "day" in our English versions can carry this "age" interpretation. The creation of the sun and moon on the fourth day, with light and darkness upon the first day, and the extremely strong evidence that the earth is not older than the sun all raise difficulties. Finally, there is a considerable variation in the exact correlations suggested by the different writers, of the days of Genesis with the geological time scale. However, these objections, while serious, may not be as formidable as they first appear.

Another view, suggested by Wiseman², Thompson³, and others, is based on the supposed literary form of Genesis 1. In this, the creation

narrative is divided into two parallel parts. The first three days depict the creation of the fixed background, viz:- the heavens and the earth; the water and the atmosphere; the land and the green plants. The next three days depict the creation of things that move in each of these respective spheres, viz:- the sun and moon; the marine animals, birds (insects); land animals and man. It is of course true that parallelism is a feature of Hebrew poetry and this interpretation has much to commend it. However, the form of Genesis 1 appears chronological and this view does not do justice to what I believe to be the rather remarkable parallelism between the order of Genesis 1 and the known geological order, even admitting the problems associated with the fourth day.

So therefore I wish to suggest a third view. This approach begins by asking how could this revelation have come? It could have come in the form of words, but it may have come as a vision, similar to the prophetic vision, on six or seven successive days. If this was so and the writer, an intelligent layman, wrote down in phenomenal language, what he saw, then the account in Genesis 1 is a perfectly reasonable one, if the visions were from the standpoint of one located upon the earth. This view accounts for the parallelism between the Scriptural account and the geological facts, while not requiring the technical exactness that we have already seen to be foreign to Hebrew thought and language. The appearance of the sun and moon on the fourth day could be explained if the terrestrial atmosphere up to this time contained much cloud, perhaps somewhat similar to that of Venus today. (this is admittedly conjecture, but certainly not impossible or unreasonable on present knowledge)

Which view is accepted is of little consequence, but what must be emphasised is that data in Genesis 1 are not irreconcilable with the known geological facts.

Now to the question, does the theory of evolution raise any additional difficulties to those considered above? The most likely objection to be raised by those who oppose the theory of evolution is that the creatures reproduced "after its kind", (Genesis 1:21, etc.) and this precludes the changing of one species into another. However, as we have already seen above the word "kind" cannot mean "species" and further, the species concept is a product of modern science and is not usually understood by the objectors themselves. Some more recent writers have tried to make "kind" equivalent to some higher taxonomic group, as for example the contributors to the Symposium on "Evolution and Christian Thought Today", but these have failed to reach any common agreement as to what taxonomic level this term is to be applied. This is hardly surprising as "kind" is not a taxonomic term and belongs to an entirely different thought form. It is much better to take "after its kind" as meaning the observable fact that the offspring of animals and plants resemble their parents. This may not sound a very profound meaning, but even up to quite recent times beliefs that animals originated in all types of strange

ways were common. One writer mentions how it was believed that ducks originated from pieces of wood that fell into the water.

If we accept this interpretation of "after its kind" there is no conflict with the theory of evolution. No evolutionist denies that like produces like. Evolution is usually considered to proceed at such a slow rate that changes of evolutionary significance usually would not be noticeable between parent and offspring. In this passage "after its kind" asserts order in nature. This is something meaningful both to the early Hebrews and to us today.

So far an attempt has been made to show that there is not necessarily any conflict between some interpretations of Genesis 1 and the facts of Geology or of evolutionary theory. But what of Genesis 2:4 and subsequent verses? Here the problem is more difficult. The literary form seems to be different from that of Genesis 1:1-2:3 and many critics have attributed it to a different author. It is important to recognise the difficulties inherent in these chapters and not to confuse them with difficulties due to the theory of evolution. Firstly, it should be realised that even on Bishop Ussher's long-since-discredited dating, Genesis 2-11 cover a period of over 2,000 years. It may perhaps represent a period of over 300,000 years or more, if Adam is to be regarded as the first Homo sapiens. Thus we cannot expect great detail in these chapters. Some sections may appear to be in conflict not only with science but also with Genesis 1. This apparent conflict is probably due to problems in exegesis. It is the writer's view that Chapter 2 does not describe the creation of the earth but the preparation of a small area of it for one representative man, Adam, and his wife, Eve. There seems to be evidence that much of these chapters is in highly symbolic language. This is not to say that they are either untrue or unimportant. The essence of a symbol is that it is a symbol of something, not of nothing. Evidence of this symbolic character is found in such phrases as "the three of the knowledge of good and evil" (Genesis 2:17) "the tree of life" (Genesis 3:22). It is doubtful if either of these trees would form the proper material for botanical study. Further evidence for this is in Revelation 22:14 where "the tree of life" again appears in a context that is undoubtedly highly symbolic.

We who have grown up in western culture would like a colour sound motion picture of the events described in these chapters, or at least a verbal description that would correspond to such, but in these chapters we have something that is different. Nevertheless they do succeed in conveying certain theological concepts quite clearly, even if they do not enable us to reconstruct the exact setting in the way that we would desire. The difficulties with these chapters are not theological but exegetical.

Since there is a considerable number of exegetical problems of some difficulty in these chapters, without regard to the theory of evolution, it should not be surprising that there is no simple solution to the

problem before us; but to dismiss them as mere fable is to show no more wisdom than do those who attempt to dismiss the scientific theory of evolution in the same way.

With regard to the scientific knowledge and early man, it would be fair to say that more work is needed to elucidate the situation. A reasonable number of human fossils and a much larger number of artefacts have been found, but the detailed picture is by no means clear. It must be remembered that in geological work man is defined as an animal that makes and uses tools, and there is no necessity for this definition to be co-extensive with that of a "living soul" of Genesis 2:7, though of course it may be. From the scientific side the relations between Homo sapiens, H. neanderthal, Sinanthropus pekinesis, Pithecanthropus erectus, etc., need to be elucidated, while from the Biblical side it would be interesting to know whom Cain feared in Genesis 4:14, when he married (of course this could have been a sister), and who were the two parties designated the "sons of God" and the "daughters of men" in Genesis 6:2. (The usual explanation involving angels is in direct conflict with our Lord's statement in Mark 12:25). Thus there is a hint in Scripture that there may have been other intelligent beings about at this time.

Modern population genetics envisages a population, rather than one or two individuals, diverging under isolating factors, to form a new species. This may be felt to be in conflict with the apparent Biblical view of an original pair. Here, however, certain things must be remembered. First, there is no need to believe that speciation always occurs by the same mechanism in all cases. Second, one may believe that, in the change to man, God interfered in some special way, though the writer believes that this is an unnecessary postulate if one accepts that the whole of the Universe, in all its details, is fulfilling its Creator's plan. Third, Adam and Eve may be representative man rather than the only human pair. How this affects theology will be considered in a later chapter.

In conclusion, the difficulties in reconciling Genesis 1 and evolution are not insurmountable and the situation with Genesis 2 and 3 is complicated by lack of information both scientific and Biblical. The situation is not such as to justify statements like that of Paton when he says, "The evolutionary hypothesis is diametrically opposed to what Genesis teaches on Creation", but rather to encourage the belief that more information may help to solve the remaining problems. The information required is not only scientific but also that dealing with literary forms in the ancient world.

- 1 Bernard Ramm, Op. cit., P.120-156.
- 2 P.J. Wiseman, Creation Revealed in Six Days, London, Marshal Morgan and Scott, (1948), P.15-16.
- 3 J.A. Thompson, The New Bible Dictionary, London, IVF, (1962), P.271.
- 4 Russel L. Mixter (Ed.), Evolution and Christian Thought Today, London, The Paternoster Press, 1959.
- 5 John Raymond H and. Op. Cit. P.3.

Chapter 10THE PROBLEM OF RANDOMNESS

In a previous chapter an attempt has been made to show that the existence of apparent randomness does not imply the absence of a cause or causes but rather the existence of a situation, the causal chains of which are so complex, as to make impossible, in practice, the prediction of the outcome of a given single event. However, it was stressed that the outcome was still in principle predictable.

The evolutionary theory postulates a dependence on such random processes for its mutations, and also in the re-assortment of given alleles. Thus Christians have sometimes rejected evolutionary theory on the grounds that it is an impersonal chance process, but if this is done nothing is solved because there are a vast number of activities of every day experience involving this type of physical randomness. Included among these are such diverse activities as the conception of the individual and "chance" meetings of people, some of which may be of great moment, even in world history. The importance of physical randomness in modern evolutionary theory cannot be logically used, by a Christian, as a ground for its rejection unless he is prepared to declare all other processes involving physical randomness as being also outside the control of God. Since these processes are often of great importance, and the Christian believes God to be both omniscient and omnipotent, this cannot be done. Thus the Christian must believe that mechanisms involving physical randomness must still be able to fulfil the purposes of God.

It is possible to consider how God could cause such a physical mechanism to fulfil His will. Lewis does so in his Appendix, "On Special Providences",¹ though he is not specifically dealing with randomness but with answers to prayer. Further, it is not necessary to postulate a miracle to "allow" God to do this -- though, unless one begs the whole question by asserting that one must work from Naturalistic presuppositions, there can be no logical objection to miracles as such.

Whether or not one feels that Lewis' or any other attempted explanation is satisfactory, the fact remains that situations involving apparent randomness (Barnes' physical randomness) are precisely those which the Scripture asserts to be the kind by which the will of God is made known to man. Examples of this are found in both the Old and New Testaments. In Proverbs 17:33 we read "The lot is cast into the lap; but the whole disposing thereof is of the Lord." The lot is again used in the New Testament (Acts 1:26) to determine the Will of God when a new apostle is to be appointed to replace Judas.

For randomness to be shown irreconcilable with Christianity it would have to be not mere physical randomness; but an absolute randomness of a type over which it could be shown that God could exercise no control. This is a type² of metaphysical randomness, but requires a stronger term than Barnes² "metaphysical randomness". I doubt if an example of randomness over which God could exercise no control has ever existed, whilst Barnes quotes examples of his use of "metaphysical randomness" term.

Before leaving this topic it is worth noting that not only does Scripture teach that the will of God is revealed in situations of randomness where the physical causes of the events are, in principle at any rate, determinable, but also in situations where the apparent direct causes are the wills of men, for example Rehoboam's stern reply to the demands of Jeroboam which lead to the division of the Kingdom. This could no doubt be explained in terms of reasons why Rehoboam followed the advice of the young men rather than the old, but Scripture asserts "it was a turn of affairs brought about by God" (2 Chronicles 10:15 RSV). Likewise Peter asserts that Jesus was both "delivered by the determinate council and foreknowledge of God" and was crucified by his hearers "by wicked hands" (Acts 2:23). Thus it seems clear that the Scriptural view is that the activity of God is not prevented by the existence of a physical or human mechanism but rather that usually He works through such means.

- 1 C.S. Lewis, Miracles, Op. Cit., P.208.
- 2 Gordon E. Barnes, Op. Cit., P.189-191.

Chapter 11

THE THEOLOGICAL CONFLICT

The centre of the conflict is situated in the realm of theology. Christian theology forms a unified structure and if any one of its basic doctrines can be destroyed then the whole structure is endangered even if it does not collapse entirely. The theory of evolution is said to attack several basic Christian doctrines including: the doctrine of man and his fallen state, the incarnation, the atonement and the inspiration of Scripture. There can be no doubt that, if these doctrines are rendered untenable by the theory of evolution, then Christianity and evolution are irreconcilable thought forms. In this chapter an attempt will be made to show that this supposed contradiction of Christian doctrine rests upon certain misunderstandings.

It is concerning the nature of man himself that serious conflict is supposed to exist. The Bible teaches that man was created in the image of God (Genesis 1:27), that he was good (Genesis 1:31) and that later he fell into sin (Genesis 3). It is usually agreed that the "image of God" must refer to man's moral and spiritual attributes and not his physical appearance as God is "without parts or passions." If we allow that God created by means of an evolutionary process, in spite of the apparent randomness previously considered, there is no reason why the product of this process should be any the less in the image of God than would be the product of any alternative process that He may have chosen to use.

Genesis 1:31 informs us that everything that God made was "very good". It is not quite certain what this phrase means. If we take it as referring to man's initial sinlessness this raises difficulties as it clearly refers not only to man but rather to everything that God had made. It seems most reasonable to consider it as meaning that the whole of creation fulfilled the purposes of God. This would include the idea of man's initial perfection, but is much wider in its scope. Man's initial innocence can, of course, be inferred from his being in the image of God and indeed from the whole of the second chapter of Genesis. Again there is no ground for believing that God could not have created a man, and indeed a universe, that fulfilled His purposes by an evolutionary process just as well as by any other method.

The doctrine of the fall of man is the one that some writers believe to be threatened by the theory of evolution. They believe that the theory of evolution teaches that man is inevitably progressing forward and upward to new heights of perfection physically, morally and intellectually. This idea even invaded some Hymn books in the form of the well-known "These things shall be." In spite of the fact that much popular Writing on evolution may convey this idea it is as foreign to biology as it is to Scripture. Evolutionary change is to adapt the organism better to its environment, and does not carry moral or ethical implications. Evolutionary change is not thought of as always producing a more complex organism, some evolutionary paths lead to structural degenerations, as in the case of the sea-squirts (Tunicata): others to stagnation, as with the Brachiopod, Lingula: or complete extinction, as was the case with the Cystordia, the Blastoidea, the Eurypterida and numerous other groups of animals.

Some would object that in the case of man at any rate progress has occurred. Thus man "fell upwards" if he fell at all. There are two things that might be said in reply to this. Unfallen man was ethically superior to the rest of the animals, but if he was a product of God's plan then there is no objection to this from Scripture. Present day man, whom the Bible asserts to be fallen, knows what he ought to do, in many cases, yet fails to do it, that is to say he is immoral. The other animals have not this sense of moral obligation, that is, they are amoral. Thus to assert that man is now morally

superior to the animals is to assert that immorality is ethically superior to amorality. This is at least doubtful. Many Christians have felt that fallen man is inferior to the amoral creation. An example of this is found in the hymn by Narayan Vaman Tilak in the lines:-

"The e'en the dust upon Thy feet
Outweights me utterly."

Another threat is seen by some in that some modern evolutionary theories take the view that a population, rather than a pair of individuals, is involved in the evolution of a new species. There is considerable evidence from population genetics to support this view, though speciation may not have occurred by the same method in every case, and speciation may not have occurred by this method in the case of man. This suggestion that speciation may occur by different methods will be objected to by some on the ground of an unnecessary multiplication of hypotheses, and they will feel that Occam's Razor should be applied. However, Occam's suggestion of preferring the theory that requires the smallest number of unknown agents, is by nature a presupposition and is not sacrosanct and has indeed been challenged by Bronowski.¹

Let us assume for the moment that it was established beyond any doubt, that earliest man consisted of a small population of men and women rather than of just two people, would this render the fall of man an untenable doctrine? Some theologians are of the opinion that it would, but I am by no means certain that this would logically follow.

Paul writing in his first letter to the Corinthians compares Christ, the Second Adam, to Adam, thus:-

"For since by man came death,
by man came also the resurrection of the dead.
For as in Adam all die,
so also in Christ shall all be made alive." (I Cor. 15:21-22 R.V.)

Christ and Adam are both considered as Representative Man. The Scripture draws a very close comparison between Christ and Adam, both were initially sinless, both were subjected to temptation (though under very different conditions), through Adam came death and through Christ came life, to those who are "in" the respective Representative Men. Now it may be legitimate to conceive of Adam, who with his wife fell into sin, as being a representative of this small group of earliest Homo sapiens. This suggestion requires that direct descent is not a sine qua non for Representation. In the case of the Lord Jesus Christ it is quite clear that direct descent is not a necessary condition for Representation, so there is no need to consider it to be the case with Adam. Thus Adam could have represented men who were not his children but his contemporaries. This also involves the idea of corporate responsibility. In our individualistic society

we are less familiar with, and less sympathetic to, the idea of corporate responsibility, but many parts of Scripture exhibit this concept. Thus even if Adam and Eve were merely representative of a group of earliest man, some hint of the existence of which may be given in Genesis 4/14-17, the doctrine of the universal guilt of man could still be maintained and we would not be forced into some form of Pelagianism.

The writer fails to see how the mechanism that God used to create man can, in any way, affect the possibility of the Incarnation. This must be assessed upon other grounds. If I have succeeded in demonstrating that the theory of evolution is not in conflict with either the direct statements of Scripture, or Biblical theology then the theory of evolution cannot be held to be inconsistent with a belief in the inspiration and authority of Scripture.

Haldane has objected to what might be called Theistic evolution on the ground that "Most lines of descent end in extinction."² This is not a valid objection to the idea that God could be both an almighty and intelligent Designer and Creator by means of an evolutionary process. As I have pointed out elsewhere³, this involves two fallacies. The first is that survival of a line of descent to the present day has some intrinsic value. That is, the Trilobite whose range extended from the Cambrian to the Permian Period (over 300 million years) are to be regarded as evolutionary failures by man who is threatening his own extinction after less than a million years, merely because he lives later in time. It is to be noted that a value judgment based on purely subjective criteria, is involved here. The second weakness in Haldane's argument is that, if it be granted that God could have created by means of evolution, then this requires that all the animals whose descendants are to give rise to animals that are required at any given time later than their own time, including the present day, must be able to survive and reproduce. Also they must be subject to such selective pressures as will direct their evolution to the required ends. Thus these animals must be members of ecological communities and, as evolution usually involves a change in ecological status, other animals whose descendants do not survive to the present day are necessary to complete these ecological communities.

At the same time they may profoundly modify the selection pressures on those forms whose descendants do survive, thus influencing their present nature.

Theologically it is interesting to compare the selection of one line and not another with the selection of Isaac and not Ishmael, of Jacob and not Esau, as stated by Paul in Romans 9. While there may be problems, it is not difficult to see parallels which point to the activity of the same Omnipotent Being. The problem of the evolution of parasites, also quoted by Haldane, is part of the general problem of pain and evil and this is no more acute if they are the result of

creation by evolution than if they were the result of special creation. The general problem of evil is outside the scope of this book, those wishing to consider this general problem are referred to C.S. Lewis' work on this subject.

- 1 J. Bronowski; *Op. cit.*, P.135.
- 2 J.B.S. Haldane, The Causes of Evolution (Longmans Green & Co.), 1932, P.159.
- 3 W.G. Clarke, Correspondence, Journal of the Victoria Institute, Vol. 91, No.1, (Summer 1959), P.65.
- 4 J.B.S. Haldane, *Op. cit.*, P.159.
- 5 C.S. Lewis, The Problem of Pain, Glasgow, Fontana, 1957.

Chapter 12

ETHICS AND EVOLUTION

Many Christians have insisted that an acceptance of the theory of evolution would brutalize man and indeed they have been able to quote many injustices, the perpetrators of which have sought to justify their action on evolutionary grounds. But the fact that evil has used evolutionary theory as a justification is not a proof that the theory is evil any more than the fact that injustice has been perpetuated by men in the name of Christianity is proof against Christianity. Men, being evil, will use any means to justify their nefarious activities. At times when religion has provided the dominant concepts then these have been twisted to justify their actions, so when science provides the most popular thought concepts then these are likewise twisted.

It is true that some phrases such as "the struggle for existence" and "the survival of the fittest" convey a rather cruder picture of nature than the true one, and they are perhaps rather unfortunate, if useful, phrases. Evolution does not necessarily require such a brutal picture as some writers have pictured. The true picture of the relationships of wild animals is by no means easy to obtain as a large subjective element tends to enter the interpretation of the data. The Crislers¹ have some interesting observations on the relationship of arctic wolves and the caribou, and their work would indicate that perhaps nature might not be quite as much "red tooth and claw" as some have maintained. Whatever the facts are, nature is not more or less cruel because of the theory of evolution, the situation does not change because of our way of interpreting it.

There are two real dangers to ethics from popular evolutionary theories. The first of these arises because, in practice, many people have abandoned a belief in God on the ground that evolution has disproved His existence. I have endeavoured to show that the theory of evolution is not a logical ground for the abandonment of a belief in God and of the truth of Scripture, but, so long as this plausible, though false, conclusion is generally held, the theory does constitute a serious threat to Christian ethics. Scripture clearly teaches that where the word of God is not heeded, or as Proverbs puts it "Where there is no vision", "the people cast off restraint." (Proverbs 29:18RV)

The second danger is from the specious argument that we ought to encourage evolution by eliminating the "unfit". Quite apart from the serious scientific difficulty of determining who is "unfit" and what meaning should be given to "unfitness", there is the false pre-supposition that science can, by itself, make value judgments of the type that can result in propositions of moral obligation. This whole problem has been already considered at length.

Thus we may conclude that the theory of evolution does not necessarily result in a breakdown of ethical values, but it has been used by some to encourage such a breakdown.

1 Lois Crisler, Arctic Wild, London, Secker & Warburg, (1959), Passim.

CONCLUSION

To some the foregoing discussion will have been disappointing and perhaps will have been dismissed as heretical. Others will feel that I have given away too much: that I have assumed evolution to be true when they would maintain a defence can still be made for a Progressive Creationist position, or of a somewhat similar position such as that held by the members of the American Scientific Affiliation in their book "Evolution and Christian Thought Today."¹ Now it must be admitted that no theory can be proved to the extent that it is impossible for new evidence to upset it, unless of course subsequent developments make it possible to observe directly the phenomenon involved. In the case of evolution, a time machine would be needed and these, regrettably, are more common in science fiction than in the science laboratory. However, the evidence for evolution is now very strong and cannot be lightly dismissed; but this is not the only reason why I have assumed the theory to be confirmed. A more important reason is that I believe, even in the unlikely event of evolution being discredited, the basic apologetic problems would

remain unaltered. The theory of evolution has emphasised these problems, but it has not created them. If these problems of causation, randomness, etc., can be overcome, and I believe they can, then the theory of evolution need not cause any logical problem to the conservative Christian, but if they cannot, then no dismissal of the theory of evolution can remove the problem, because it is a problem at the level of the facts of nature on our scheme, not only at the level of theory. Thus from the point of view of Christian apologetics, attempts to disprove evolution are at best a waste of time and at worst may seriously hinder the work of evangelism by falsely identifying the Gospel with an ignorant obscurantism. The Gospel must not be linked with any particular scientific theory, however true it may appear at the time, nor must it be linked in opposition to any such theory unless such theory is logically incompatible with revealed truth. Further, it is imperative that very great care should be taken both in exegesis and logic before a scientific theory is so condemned. History contains too many examples of such hasty condemnation.

It is inevitable that tentative co-relations between scripture and scientific discovery will be made and some of these may be both correct and profitable, especially in the field of Archaeology, but they must always be recognised for what they are, and not considered as infallible truth.

The arguments and discussion that have been put forward in this paper may not have been convincing, and this is not surprising as the issues involved are complex, but the main aim of this paper is not to solve, to everyone's satisfaction, these issues, but rather to direct consideration to those issues that are basic in Christian apologetics and to encourage a careful re-appraisal of this old conflict.

- 1 R.L. Mixter (Ed.) Evolution and Christian Thought Today, Paternoster Press, London, (1959).

APPENDIXVERIFICATION AND FALSIFICATION

The objection may be raised by some that the ideas expressed in this book are not such as can be either verified or falsified and hence they will state that much of my argument is meaningless. This charge may be particularly levelled against the concept of God working by means of an evolutionary process.

This charge has been levelled at the whole of Theology, Christian and non-Christian alike, and in its general form is quite outside the scope of this book. There are, however, some observations that may be made on this subject.

The theory of evolution is now so elaborate that it is difficult to conceive of any new fact which could not be fitted into the structure of this theory. Thus the theory of evolution itself is almost unfalsifiable, but not meaningless.

It must be understood that I am not attempting to establish the truth of Christianity or even Theism from the world of nature. The former cannot be done: the latter may perhaps be done to some extent, Romans 1:19-20 might suggest that it can, but this is a complex question. Rather, what has been attempted is to show that if, on other grounds, Christianity is accepted, then the theory of evolution is not such as to be in conflict with it.

Some at least of the major propositions of Christianity are of a type that were in principle subject to verification or falsification at the time. Facts such as the resurrection even today can be defended upon strong evidence as has been done by Frank Morison¹. Christianity as an historical religion at least impinges upon the world of things and people in such a way as to give meaning to its concepts.

1 Frank Morison, "Who Moved the Stone", London, Faber (1958).