examine, rather than to accept pronouncements by scientists in blind faith.

Teleology, a word which is all but unknown to most Christians today, should be quite familiar to students who have taken our physical science course. For too long the idea of purposiveness or design in nature has been rejected as old-fashioned and unscientific.

Teleology is presented clearly in a number of areas in our book; such as: (a) Some of the intricate mechanisms of the human eye are discussed in the section on optics. (b) The amazing details of the ear and the wonders of the human voice are described in a chapter on sound. (c) The protection afforded by the ozone layer of the stratosphere is covered under the chemistry of oxygen. (d) The function of the earth's magnetic field in shielding the earth's inhabitants from cosmic rays is discussed in the chapter on magnetism. (e) The unique properties of water and their significance for living organisms are taken up in a chapter on water.

Other teleological arguments are included at appropriate points; therefore, such examples of God's handiwork should carry a strong message to the mind that is not blinded completely by sin.

Other Pedagogical Distinctives

The effect of drugs, alcohol, and tobacco on the human body are presented as the primary **physical** pollution problem. The authors are in favor of reasonable environmental protection, but are opposed to hysterical and hasty measures.

Because present-day industrial technology is so highly advanced, engineering and industrial applications of scientific principles as well as research laboratory examples are given.

Many different scientific ideas are pictured through the use of cartoons. The use of humor can do much to increase student interest and aid in the grasp of nebulous models. Sterile scientific discussions may be satisfactory for graduate classes, but the ninth grader needs to be stimulated before he will attempt to grapple with an abstract idea.

ON THE DISTINCTION BETWEEN RELIGION, PHILOSOPHY, SCIENCE, AND HISTORY

HAROLD L. ARMSTRONG*

Careful attention is given to what is meant by "religion," "philosophy," "science," and "history." Religion has to do with right relation to God. Philosophy involves one in the study of all things, and creation and origins would rank only as one area of study among many. Science is organized knowledge and methods of investigation of the natural environment. Therefore, creation, origins, and evolution cannot be studied scientifically. History is developed from written records. The "fossil records," then, cannot be considered as history.

When the question of a special subject for this Annual Issue of the *Creation Research Society Quarterly* was being discussed, the proposal was made that we look into differences between religion, philosophy, and science.

Such a discussion is needed, at least partly, because when mention of creation in the schools is proposed, the objection that creation has to do with religion rather than with science is raised usually. Sometimes it is said that questions about origins have to do with philosophy.

Thus a discussion of this whole matter—the question, under which heading investigation of origins comes—would seem to be very much worth while.

As will be noticed, while articles were written and this *Quarterly* issue was prepared, the topic broadened considerably. That is not undesirable, and was to be expected. Incidentally, the reason for adding history to the list will appear later.

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Everyone has had the experience of listening to arguments, which were interminable, because the terms utilized were not well defined. Different people were using the same words to mean different things. Lest that happen here, let us consider what we mean by "religion," "philosophy," "science," and "history."

Religion

The usual dictionary[1] definition of religion is: "system of faith and worship; human recognition of personal God or gods entitled to obedience." This might be re-phrased a bit to say that religion is a way of being in the right relation with the Supreme Being. (If polytheistic religion were being considered, one might say: "higher beings.")

Note that the essential aspect—and this agrees with the definition in the dictionary—is the notion of right relation. It is not just a matter of intellectual belief; nobody would call the devils who "believe and tremble"[2] religious. Also, this fits in with St. James' definition of religion.[3]

It follows, then, that to mention creation in school as a possible origin of the universe is not an exercise of, or an attempt to propagate, religion. Nothing is said about right relation.

Philosophy

Here the discussion becomes more involved. First, consider two meanings which are not related to the present point.

Sometimes "philosophy" means a general outlook, or a body of presuppositions, as in one's "philosophy of life." In that sense either creation or evolution might be a philosophy.

Sometimes "philosophy" is used in a wrong sense, to mean speculation as opposed to sound investigation. That is really not a legitimate use of the word. Indeed, one finds cases in which evolution, at any rate, is a "philosophy" in that sense.

The usual dictionary definition of philosophy is: "pursuit of wisdom or knowledge, esp. of ultimate reality or general causes and principles."[1] In a manual of (Neo-)Scholasticism philosophy is described as: "the science or understanding of all things through their most general reasons."[4]

This follows Aristotle, who considered philosophy, under the name "philosophic wisdom," "the most finished of the forms of knowledge"; and who concluded that it is "intuitive reason combined with scientific knowledge."[5] Thus philosophy, in this sense, is a more general form of the same thing as the more special sciences—Aristotle sometimes called them "partial"; whereas today they are labelled "departmental" sciences.

The difference lies in the fact that philosophy is not restricted to some particular kind or aspect of thing, but deals with everything. For that very reason, philosophy is confined to more general matters, and details are developed under the departmental sciences. For the same reason, the points of departure and principles of philosophy involve those ideas which are common to all men.

Philosophers do not depend, primarily, on the results of special investigation and experiment; although, of course, they may sometimes have occasion to take cognizance of these things.

It might be mentioned, incidentally, partly because of the sad mis-use of the word, that *metaphysics* is a branch of philosophy in the sense just expounded, having to do especially with considerations of what can be said about things by virtue of the fact that they are, that they exist.

Actually neither creation nor evolution is primarily a matter of philosophy in the sense expounded. It is true that philosophers may have something to say about the matter: for instance that it is ridiculous to suppose that things came about without a reason, or that there must have been a beginning. In these ways, notions considered under philosophy could certainly be used to support creation, not evolution. But, then, philosophy pertains to everything; yet, philosophers are no more concerned with origins than with many other things.

Science

Here the multiplicity of meanings will be really serious.

First of all, the word is often used as an "O K word," as Potter used to put it. For instance, we are told that science has found that such and such a pill is useful. Clearly this meaning has little to do with the question being considered; although it is sometimes used in exactly the same way; if we are told, for instance, that "science has proved evolution."

Sometimes "science" means any more or less organized body of knowledge. One might speak, for instance, of the science of flycasting, or the science of chess. This usage likewise is not relevant to the present discussion.

Generally science concerns studies of things which are true, and involves reasoning to reach some conclusions. This is still too broad a statement for the present purposes. Science would be scarcely distinguished from philosophy. And science might include things that should be excluded. In the Middle Ages, for instance, theology was called the queen of the sciences.

To be specific, "science" should be restricted to natural or experimental science. To a large extent, these terms coincide, although it is easy enough to find distinctions. As a restriction, "experimental" really means that which is based on experience.

In some cases the experience may be that which is available freely in the circumstances of the natural environment; in others, it may be the specially arranged experience which is called experiment. It would seem to be a matter of circumstances which predominates.

Physics or chemistry, for instance, depends largely on contrived experiments; whereas geology (in so far as it is geology, not e.g. chemistry) or meteorology depends on what the investigator finds. Sometimes either source of information might be available. (I have sometimes wondered whether much of the information, obtained at considerable expense by the use of the huge accelerators in nuclear physics, might not have been had free, so to speak, by the study of cosmic rays.)

As for natural science, well, it must be a study, involving reasoning, of nature and the natural. What, then, is meant by "natural"? First of all, the natural happens without human interference. Thus natural science is distinguished from e.g. engineering. Indeed, natural scientists may con-

trive experiments; but they want the experiment to show what would happen should the same circumstances arise without human interference.

But things happen, without human interference, which could hardly be called "natural." To paraphrase Aristotle a bit, one might say that the natural is that which happens always or for the most part.[6]

This is why experiment, in practice, is so important. "Always or for the most part" means always or for the most part under the widest possible range of circumstances. And often artificially contrived experiments are required to see what does happen under a wide range of circumstances; one purpose of experimentation is to vary the circumstances widely.

These considerations finished, what can be said about the original question?

It is clear that creation, considered as creation, is not a matter for science. (Note that "creation" may be used in two senses: sometimes it means the *act*, sometimes the *results*. I am considering the former here.) Nothing can be said about creation "always or for the most part." For there was only one act of creation; it was utterly unique.

As for evolution, if it is a matter for science, it is so in so far as science denies it. No one has observed that "always or for the most part" living beings turn into other kinds. Quite the contrary; only the fact that like begets like is supported by observation. So evolution is either outside science or contrary to it.

At the same time, it is true that men in science may have something to suggest about creation, and creation may be a source of some leads for men in science.

The way in which consideration of the laws of thermodynamics supports the belief that there must have been a creation has been considered often in this and other publications. Consider, for the moment, the matter from the other end, so to speak.

Specialists in thermodynamics sometimes make much of "postulates of impotence"; statements that something or other, for instance to make heat flow from a colder to a hotter object, is impossible.[7] Some men have questioned whether it is possible, or desirable, to base a science on such principles.[8] However, no one can deny that they have a practical value. The principle that it is impossible to have perpetual motion, for instance, can, if believed, save inventors from years of fruitless work.

Now a belief in creation should provide a sort of postulate of impotence: that it is impossible, by the methods of science, to reach conclusions about origins. As in thermodynamics, the process might be used in either way.

One might argue from a belief in Creation that any **scientific** determination of origins is impossible, and thus save a lot of fruitless work. On the other hand, one might grant first that it is impossible to find out about origins scientifically.

This might be done in the same way as perpetual motion can be handled in thermodynamics: by pointing to the steady record of failures. Then it must follow that origins are outside the ordinary range of happenings; i.e., they are by creation.

Thus neither creation nor evolution comes under science, as part of the subject matter. Either creation or evolution can, of course, be presupposed.

A belief in creation can be useful in science. Not only because of a principle of impotence gained which, if admitted, can save useless work; but also, as Berkeley suggested,[9] a proper place for teleological considerations can be gained, and the proper uses of things can be identified.

On the other hand, one can hardly think of any instance in which a belief in evolution has actually helped anyone in any scientific work. Lammerts has suggested, in fact, that in the breeding of plants and animals a belief in evolution has been a hindrance.[10]

History

The distinguishing aspect of history, anyone would agree, is that it depends on records. Ordinarily, moreover, these are written records. But there is no particular concern, at the moment, with "natural history," which seems to mean a description of nature, as contrasted with reasoning about it under natural philosophy.

Again, philosophers talk about "historical knowledge." This means the kind of knowledge obtained from the testimony of others. For instance, North Americans believe that there is such a place as Australia, although many persons in Canada and the United States have never seen Australia. No direct concern with this notion is required in this discussion.

However, the difference between history and archaeology should be emphasized. The difference is that history involves records; archaeology, only things. Which is more effective?

This is made evident through a comparison of our knowledge of Europe, around the beginning of the Christian era, with that of the civilizations in the Americas about the same time; or through a comparison of our knowledge of Greece about 500 B.C. with that of Etruria about the same time. As Courville has pointed out: "The vast majority of archaeological finds taken alone are capable of numerous interpretations."[11]

Now as for origins, the only record available, which is worthy of serious consideration at all, is

that of Scripture, and it tells of creation. The "fossil record" is not a record at all, as records go in history; rather the "fossil record" is a series of archaeological finds. And the "fossil record," like the others which Courville mentioned, may be interpreted in several ways.

Actually, archaeology is most useful when used to illuminate the story of times which are already known, in outline at least, by those who read the records of history. This is how the archaeology of Greece or Rome would be used.

Likewise, the information from fossils would be employed most usefully in filling in the story of creation and subsequent destruction in the flood, of which an outline is already at hand in Scripture.

Conclusion

In conclusion, then, creation is not a matter (in the sense of subject matter) of science, nor of philosophy; it is a matter of history. We know that creation happened in the same way as we know that any other event before our time happened: we know it because we have reliable records.

Evolution, if it were true, and if we had any written record, would be a matter of history. But it is not true, and we have no written records to support it. The only evidence which can be adduced for evolution, which is even worth considering is the "fossil records." But we have seen that the fossils do not constitute a record as records are used in history. Fossils are more like archaeological finds, subject to various interpretations. Evolutionary thinking, then, consists of a mistaken interpretation of these finds, and is certainly not science.

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[1]The Little Oxford Dictionary, Fourth Edition. Oxford University Press, 1949.
[2]St. James 2:19.
[3]St. James 1:27.
[4]Cardinal Mercier, A manual of modern scholastic philosophy. English translation by T. L. Parker and S. A. Parker. Third Edition. Routledge and Kegan Paul, London, 1960. Vol. 1, p. 8.
[5]Aristotle, Nicomachean ethics, Book VI, Chapter 7.
[6]Perhaps not in quite these words in any one place; but see Rhetoric Book I, Chapter 10; Physics Book II, Chapter 5; and Physics Book VIII, Chapter 1.
[7]Zemansky, M. W. 1951. Heat and thermodynamics. Third Edition. McGraw-Hill Book Co. Articles 7.5-7.7.
[8]Dingle, H. 1972. Science at the crossroads. Martin Brian and O'Keeffe, Ltd., London, pp. 203-205.
[9]In his book, Principles of human knowledge, which may be found in any edition of his works.
[10]Lammerts, W. E. 1961. Neutron-induced variation of roses, *Pacific Rose Society News*, XXVI (3):7, 16 and 17; and (4):11, 18 and 19.
[11]Courville, D. A. 1971. The Exodus problem and its ramifications. Challenge Books, Loma Linda, California. Volume 2, p. 3. (See particularly the whole of Chapter I.)

TIME UPSIDE DOWN

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A new look at world prehistory is presented. Substantiations are enumerated at length to support the author's contention that much, much evidence has been ignored too long by authors of conventional textbooks. Upside down formations, odd things in wrong places, extensive challenges of dating methods, the fading magnetic field of the earth, stalagmite formation, footprints in stone, petrified wood, reexamination of the Sahara, Neanderthal man, and other oddities found below the earth's surface are itemized. Keys to unlocking mysteries of ancient history are discussed also.

I. Introduction

According to many textbooks, the Antarctic ice cap is 60,000,000 years old. Earliest man was thought to have emerged into history about 1,000,000 years ago.[1,2]

In the National Museum of Turkey two map fragments dated 1513 and 1528 are on display. The maps were compiled from a number of now lost ancient originals which existed long before the time of the Greeks. At the bottom of one of these fragments the coastline of the Antarctic continent is shown, including rivers and mountains.

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The original map, which shows amazing knowledge and accuracy, was made when the Antarctic was ice-free.[3] Antarctic mountains and portions of the coastline depicted on the map were confirmed by scientific studies in 1952 and again more recently.

The evidence of the maps cannot be ignored, according to responsible reviewers who have studied them. Independent evidence of the recency of the Antarctic ice cap came to light with the discovery of 81 mummified seals in some mountain caves, 2500 feet above the present sea level.[4]

The story of the earth as found in the Scriptures and the testimony of scientists in textbooks