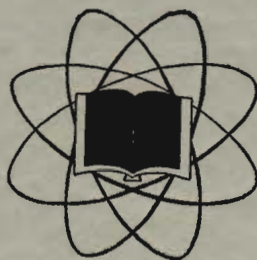


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*The fear of the Lord is the beginning of wisdom. Psalm 111:10*

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## TABLE OF CONTENTS

The Nature of the Gene and the Theory of Evolution . . . . .	2
John C. Sinclair Graduate Student UCLA	
A Reading Course In General Anthropology . . . . .	5
James O. Buswell III, M.A. Assistant Professor of Anthropology Shelton College, Ringwood, N. J.	
The Reconstruction or Cataclysmic Theory . . . . .	9
Peter W. Stoner, M.S.	
The Philosophical Implications of the Christian Religion . . . . .	14
John F. Gates, S.T.D. Chairman of the Bible and Theology The King's College, Delaware	
Public Health In American Samoa . . . . .	20
Anthropology . . . . .	21
Archaeology . . . . .	22
Biology . . . . .	24
Geology . . . . .	25
Philosophy . . . . .	26
Psychology . . . . .	27
Sociology . . . . .	28
Of Interest . . . . .	29
New Members . . . . .	30

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# The Nature of the Gene and the Theory of Evolution

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The theory of evolution today is based on the natural selection of gene mutations as the mechanism for the changes it requires. Other theories in the past have been discarded for lack of evidence though some people still cling to them. Lamarckism, the use and disuse theory, is one example.<sup>1</sup> Some feel so many occurrences in the normal gene relationships are chance that it is easy to imagine the probability of favorable changes that can lead to evolutionary progression. For instance, the various gene combinations such as yellow and green seed color in the pea, are random occurrences dependent upon just which parental chromosomes unite in the cross fertilization of hybrids, and also dependent upon random shifts of particular genes between chromosomes in crossing-over. (In the formation of sex gametes each of the normal pair of chromosomes split and come to lie alongside of each other. This bundle is halved and then each half is halved by two successive cell divisions, giving four cells with one chromosome of each kind in them. These are the haploid sex cells. The genes that lie in the same chromosome are, of course, inherited as a group. It sometimes happens, however, that a certain percentage of the chromosomes exchange parts of their length when they separate in the halving process, due to their intertwining. This is crossing-over. In man, sex is determined by which sex chromosome of the male, X or Y, chances to unite with the female X chromosome. In all of these chance occurrences, the gene itself and the spacial orientation of it along the chromosome remain the same. Variety is possible from this sort of mendelizing but no progression from an evolutionary point of view. The garden Dahlia is, functionally, an autotetraploid, that is, it has four of each kind of gene instead of two as in the more usual diploid plants. In certain crosses between magenta and ivory colored flowers, pigmented by cyanin and apigenin respectively, it was noticed that anthocyanin production was suppressed in the presence of flavone. Further investigations showed that interaction occurred in the production of all four of the pigments responsible for flower color in Dahlia. In other words, there was competition between these pigments in their parallel production from a common, limited source or intermediate; and this competition was proportional to the dos-

age and competitive value of the flower color genes governing the synthetic processes. When much anthocyanin was produced, there was less flavone; when much butein, less anthocyanin and/or flavone; and so on.<sup>2</sup> A new color variety in Dahlia does not then mean a new gene but merely a new gene combination.

Now, what are genes, these units that are so important in fashioning our bodies from a single cell and enabling it to function as a living entity? Biochemically a gene is a large protein molecule associated with desoxyribonucleic acid, and capable of autocatalytic or self-duplicating properties. The nature of the gene biologically is inferred from defects in organisms lacking the normal gene or possessing a mutant form of it.

A pyrimidine synthesizing gene in *Neurospora*, a mold found on bread, has three different mutant alleles or forms. One allele is unable to grow without a supplement of pyrimidine in the culture medium, irrespective of the temperature at which the plant is grown. Two other alleles will grow without a pyrimidine supplement at 25°C, but need it at 35°C. One of them shows normal growth, the other subnormal.<sup>3</sup>

Mutant	Hydrolyzed nuclei acid required for half maximal growth. (mg/ml/)	
	at 25°C	at 35°C
pyr-3a 37301	3.3	3.15
pyr-3b 37815	0.0	2.4
pyr-3c 67602	0.38	2.3

From experiments such as this one, the unitary principle of gene action is postulated. Haldane says, "roughly speaking we may say that each gene is responsible, not for a unit character, such as a form or color, but for a unit biochemical process. In general, when a gene is responsible for a step in a synthesis, it probably acts by catalyzing the synthesis of an enzyme. Besides controlling catalysis, genes may control membrane permeability, and doubtless many other biochemical processes."<sup>4</sup> Carr says, "Often several different variants (alleles) of one gene can be accumulated, and these seem to affect the same biochemical or morphological process, but by different degrees, confirming our suspicion that we have then a graded series of upsets of a single mechanism."<sup>5</sup> Beadle says, "The numerous instances in which a single gene substitution in an organism results in a block in a single meta-



bolic step have led to the hypothesis that many or all genes have single primary functions".<sup>6</sup> Cases are known where a single gene mutant affects many different processes and forms but are traceable to a single defect. One example of this is the vestigial gene in *Drosophila*. The main effect it produces is the typical reduced wing; but it also causes the scutellar bristles to point forward and upward, prolongs the time of development, decreases viability, makes wings divergent, and causes rudimentation of balancers. These effects can be interpreted as a lack of some growth substance. The bristle effect may be a secondary one.<sup>7</sup>

Whether the gene effect is due to the spacial orientation of regionally differentiated chromatin, as Goldschmidt thinks, or to the primary action of localized segments of the chromosome though modified by position effects is still an open question.

Goldschmidt believes that the similarities between point mutations and position effects are most logically interpreted as the same. The properties of so-called genes are those of small chromosome segments which function differently when the order of their architecture is changed. Visible changes of order are ordinary position effects, and invisible changes of order are ordinary point mutations. The existence of such an architectural mutant effect neither presupposes nor proves the existence of a non-mutated gene. Most geneticists speak of the demonstration of a gene, when only a mutant locus has been found. The overlapping sections of the position effect are in favor of the assumption that the normal action is not the function of a gene, but of a segment of undefined length, possibly of tapering length.<sup>8</sup>

Sturtevant counters that chromosomes are regionally differentiated, physiologically and visibly. Particular and identifiable regions are necessary for particular reactions in the organisms, and these particular regions behave as units in heredity, that is in crossing-over. These three propositions prove the existence of the gene. When Goldschmidt says that phenotypic effects of sectional deficiencies are best considered as due to position effects rather than to a loss of genes, he has failed to recognize the simple fact that in many cases such sectional deficiencies have been produced by crossing-over between inversions, neither of which has such a position effect. All the sequences of loci present in the deficient chromosome can be shown to have no such effect, and the missing sections can be shown on independent grounds to have exactly the properties missing in the deficient chromosome.<sup>9</sup> Goldschmidt and Sturtevant are evidently in disagreement.

What happens when a gene mutates? Any answer to this question must consider that mutants

can change back to the wild type. Mutants are allelic to the wild type at the same locus, by definition. Catcheside says, "In the pantothenicless (5531) and lysineless (4545) mutants, which have never yet been known to revert, it is suspected that the genes may have been lost either in part or totally. Mutants capable of back mutation though heterocatalytically inactive are able to reproduce themselves accurately, through not having lost the essential autocatalytic activity."<sup>10</sup> What actually happens when a gene mutates is not known, but the change cannot be very drastic, for it can back-mutate to the normal form, unless it is lost. Mutations leading to the reassumption of the wild phenotype have been noted frequently in bacteriological studies.<sup>11</sup>

It is impossible to be certain that any given mutation is due to a change in the composition of one or more genes rather than in the arrangement of unchanged genes with respect to each other.<sup>9</sup> That is in a position effect. A mutant allele is recognized by a distinctly different action in the organism. This difference might spring either from the mutant allele producing an enzyme with an altered specificity (an enzyme catalyzing a different chemical reaction) or an enzyme with the same specificity but with an altered degree of activity. Most experiments support the latter view, and in general almost all mutant alleles appear to possess the same specific activity as the wild type but to a lesser degree. No case of mutation of a gene to an allele which mediates the production of an enzyme of altered specificity has so far been encountered.<sup>10</sup> It would be difficult to detect it if it were suspected. Then too, it would be impossible to know whether or not a closely related gene is involved in an apparent change of specificity, as crossover may not occur between them. This means that we have no way of being sure that a chemical change has resulted when a gene mutates, but even if it has, it has never been known to change the gene's characteristic behaviour.

Recently a type of mutant has been discovered that some geneticists feel is an exception to this rule. It was discovered in *Neurospora* by Houlihan and Mitchell. It enabled a Pyrimidineless mutant (37301) to grow in a culture media without added Pyrimidine, and so was called a suppressor mutant because it suppressed the effect of the Pyrimidineless mutant.<sup>3</sup> During the uncertainty that precedes a better understanding of the suppressor mutant, many evolutionists will claim it as the basis of evolutionary change.<sup>12</sup> In other words, the search for evolutionary significant mutants has been narrowed to a single recently discovered phenomena known as a suppressor mutant; but I am sure that when these mutants are more thoroughly

studied they also will be found in multiple, graded alleles and will show back-mutation, hence any progressive change is improbable. It is noteworthy that they are found in a compensatory capacity. These may represent the normal way by which defects biochemically and embryologically are regulated.

It is not known whether the suppressor takes over the lost enzyme function or merely alters the cellular environment so that the mutant enzymes, unstable in the normal environment, become stabilized. In *Drosophila*, suppressors are known that suppress two or more mutations known from genetic evidence to be concerned in different physiological reactions. In these cases it is highly improbable that the suppressors have taken over simultaneously the functions of the normal alleles of two or more diverse genes.<sup>10</sup>

In conclusion, it is evident how sparse our knowledge is of the nature of the gene or how it controls morphogenesis and physiology. It appears however, that genes are closely associated with steps in metabolic pathways, possibly through sin-

gle enzyme systems and that mutations affect the rate, onset, or termination of these enzyme systems but not their specificity. We have no evidence that a gene has ever mutated into a new and different one with a specificity controlling a new biochemical process. Yet evolution requires this sort of change. In view of this, is it not time to reconsider the natural selection of gene mutations as the mechanism by which Phylogeny has occurred?

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# A Reading Course In General Anthropology

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## III Anthropology and the Study of Evolution.

Throughout the history of anthropology it has consistently been identified with the hypothesis of organic evolution. Indeed, evolution has been considered so fundamental a part of the subject that R. R. Marett, referring to a brief, formal statement of the scope of anthropology, added:

"To put some body into it, however, it is necessary to breathe but a single word. That word is: Darwin.

"Anthropology is the child of Darwin. Darwinism makes it possible. Reject the Darwinian point of view, and you must reject anthropology also."<sup>1</sup>

This kind of association is, unfortunately, still held in the popular mind today. One consequence of it is that some Creationists, rejecting evolution have rejected anthropology and its allied fields of genetics and paleontology as devices of the Devil, to be shunned by Christian students.

Another consequence is that students registering in beginning anthropology courses in the universities still occasionally expect to have to read *The Origin of Species* and to be taught Darwinian evolution. It must be emphasized that, except in some specialized zoology courses, the universities of our day do not teach evolution. They take it completely for granted.

Marett's opinions are, of course, out of date. It is our purpose here to attempt a more valid definition of the relation of evolution to the study of anthropology.

\* \* \*

Except in physical anthropology, as we shall see, the lines between the science of man and the hypothesis of organic evolution have been distinctly drawn. Professor Albert L. Kroeber, referring to Marett, writes:

"Accordingly, a designation of anthropology as 'the child of Darwin' is misleading. Darwin's essential achievement was that he imagined, and substantiated by much indirect evidence, a mechanism through which organic evolution appeared to be taking place. The whole history of man, however, being much more than an organic matter, a merely or strictly Darwinian anthropology would be largely misapplied biology. One might almost as justly speak of a Copernican or a Newtonian anthropology."

Thus it is evident that anthropological thought today need not retain any filial regard for a Darwinian paternity, in any over-all, theoretical sense. Kroeber points out one aspect of the explanation for this present association, as he adds:

"What has greatly influenced some of the earlier anthropology, mainly to its damage, has been not Darwinism, but the vague idea of progress, to the organic aspect of

which Darwin happened incidentally to give such support and apparent substance that the whole group of evolutionistic ideas, sound and unsound, has luxuriated rankly ever since."<sup>2</sup>

The organic aspect of anthropology, physical anthropology, while not preoccupied with Darwinian theory, is committed to organic evolution as if there could be no question about the matter. The following quotations are typical of the expressions of the basic postulates, though not all in the same vein:

"Man is an animal, and, however greatly his present state differs from that of the rest of the animal kingdom, we must accept that he arose from subhuman ancestors by a process of evolution."<sup>3</sup>

"Man is the result of a purposeless and materialistic process that did not have him in mind. He was not planned. He is a state of matter, a form of life, a sort of animal, and a species of the Order Primates, akin nearly or remotely to all of life and indeed to all that is material."<sup>4</sup>

"The 'theory of evolution' is an overworked term, in its popular usage, and unfortunate besides, because it implies that, after all, there may be something dubious about it. Evolution is a fact, like digestion. I have never seen my own digestive processes, but I would not be so fatuous as to cast doubt on their existence by talking about the theory of digestion."<sup>5</sup>

Despite all these assumptions and displays of logic, sound or unsound, it is not impossible to show that there can be a scholarly, objective and unprejudiced, yet *non-evolutionary* approach to the data of physical anthropology. The lines can be drawn just as distinctly here as they have been between the rest of anthropology and the evolutionary theory. We must be sure, however, that we understand exactly what "evolution" is, as used by the evolutionists of today. We must be careful to discriminate between the genes, mutations, fossils, and processes of change, on the one hand, which are factual and demonstrable, though predominantly associated with evolutionary explanations; and on the other, that aspect of evolutionary theory and interpretation which is the projection of the factual to the point where the fabric of the story is woven by threads of supposition alone.

\* \* \*

How, then, can we separate the one from the other? If the whole of anthropology can be studied from a non-evolutionary point of view, with the proper use of all the factual data involved, a rigorous analysis of this differentiation must be applied.

Here we find Simpson's threefold division of evolutionary modes<sup>6</sup> helpful in thinking about and using the term analytically. He divides the evolution-

ary process conceptually into 1. Speciation, 2. Phyletic evolution, and 3. Quantum evolution.

Briefly, speciation, a term well known to taxonomists, is the genetic process of variation in nature. Phyletic evolution is speciation occurring over a long period of time. Quantum evolution is a term Simpson has borrowed from physics which only to a limited degree is analogous to the patterns of evolution as he sees them. A more explicit description will follow the discussion of the other two.

First of all, we can speak of speciation as "evolution." Both Mixter and Bullock have been very explicit in defining the extent to which speciation may be legitimately held to by the creationist as a scientific concept for the variation of things in nature.<sup>7</sup> Simpson defines it this way:

"The process typical of this mode of evolution is the local differentiation of two or more groups within a more widespread population. On the smallest scale, this process involves group differences so minor and so fluctuating that they are given no taxonomic designation and have no clear evolutionary significance, although the event may prove that they are the beginning of changes that do become permanent and important. At a slightly higher level local groups attain temporary equilibrium, but the condition is not fixed or irreversible; the groups are approximately subspecies in taxonomic terms. If, or when, definite isolation of the groups occurs, there is a splitting of the population into two or more separate closed systems, which are at first species, but may by a continuation of the same sort of process and other processes become genera or somewhat higher units."<sup>8</sup>

He further points out that:

"This first category is almost the only mode accessible for study by experimental biology, neozoology, and genetics. It embraces almost all the dynamic evolutionary phenomena subject to direct experimental attack."<sup>9</sup>

With regard to the operation of speciation, Mixter has pointed out that "Any change at all of any amount, no matter how small, may be called evolution. So believing that the descendants of Adam and Eve are now members of different races is believing in evolution in this restricted sense."<sup>10</sup>

We thus may agree that here is one aspect or mode of evolution in which, for all practical purposes, we must "believe in," or acknowledge as at least operative in all of nature.

The term "evolution" may also refer to another category of data and processes. "The evolutionary mode to be discussed as phyletic," Simpson explains, "involves the sustained, directional (but not necessarily rectilinear) shift of the average characters of populations. It is not primarily the splitting up of a population, but the change of the population as a whole." He also points out that "this mode is typically related to middle taxonomic levels, usually genera, subfamilies, and families."<sup>11</sup>

Just as we must recognize speciation as a process of variation continually operating in all of nature, so we must recognize that the fossil remains, the objects which are able to be measured and analyzed,

are not merely "figments of the imagination and plaster of Paris."<sup>12</sup>

"Aside from isolated discoveries that contribute less directly to the study of evolution, nine-tenths of the pertinent data of paleontology fall into patterns of the phyletic mode. It has naturally resulted that paleontologists have over-emphasized this mode and have overgeneralized on the basis of it, just as most experimentalists have overemphasized and overgeneralized from the speciation mode. Nevertheless, the phyletic mode is one of very wide occurrence, consequently of major importance, and the abundance of paleontological data makes it one of the best known."<sup>13</sup>

We have here, embodied in the term "evolution" tangible data and intangible processes which are open to the investigation and experimentation of all, before we even get to the implications and interpretations of them.

Before proceeding, some further general considerations are necessary before introducing the third way in which "evolution" is used.

Because of the fact that the only alternative to a creationist explanation for the origin and prehistory of man is an evolutionary one, it can be expected that scholars in this field will be predominantly creationists or evolutionists depending upon their acceptance or rejection of supernaturalism. Accordingly, the degree to which organic evolution is taken for granted in our educational system and intellectual life today is a direct indication of the dearth of recognized creationist authorities in these fields.

Whatever the immediate or remote historical explanations for this may be, it is a fact that creationists are not producing the accepted textbooks, and the authoritative literature is almost wholly devoted to an evolutionary point of view.

The result is, however, that the evolutionist has, in the last fifty years, become exceedingly frank either about the problems that face him, or in the over-confident expression of the over-all picture of evolution in grand strokes which ignore the difficulties—in both cases realizing that there is no recognized anti-evolutionist to challenge him in any competent manner. Thus there is no need for suspecting that the evolutionist is merely trying to pull the wool over our eyes, so to speak, or that he is ever deliberately falsifying his data. There are enough professional specialists nowadays who would tear him apart in the public journals, since the data is so widely available for all to examine.

Turning then to the literature, we find these characteristics exemplified in the writings from both sides of the Atlantic. Evolutionary anthropologists in this country, it seems, are not so prone to commit themselves on the subject of origins as some British and European authors are. They prefer, generally, to leave cosmological and origin matters to the astronomers and philosophers. It is the pro-



cess of change since then that they are interested in. For example, Howells writes in his simplified text on physical anthropology:

"We are totally bewildered, of course, about the beginnings of life and the reasons for our existence, and these are questions which have been grist to the mills of philosophers and myth-makers alike. But we know, roughly, what happened along the way, and that is the story of human evolution."<sup>14</sup>

Most of what Howells emphasizes is in terms of speciation, except where he states that "The human line, in fact, can be traced back only to the fishes."<sup>15</sup> As a matter of fact, paleontologically, man cannot be traced back as far as man!

Let us take, for example, one modern evolutionist's attempt to trace man from the fishes.<sup>16</sup> First of all, the fishes themselves:

"When we come to the rise of the fishes we are again confronted by problems, by gaps in succession and, in some instances, by apparent paradoxes. It has to be confessed once more that there is no clear evolutionary way helpfully outlined by even moderately well-preserved fossil examples. The family tree of these early vertebrates has well developed branches, but in our reconstructions of it the main trunk has often to be represented only by broken lines." (P. 98)

Next, the amphibians:

"These limbs are without doubt derived from the paired fins of fishes but the actual stages in this process are as yet unknown, although Dr. Robert Broom and others have made interesting suggestions." (P. 114)

And then the reptiles:

"The evolutionary lines of the amphibia are not clear. . . . Somewhere in the amphibian chain was a link, probably close to *Diplovertebron*, that gave rise to a reptile, probably in the Carboniferous days, for in the Permian true reptiles were established." (P. 121)

And from reptiles, mammals:

"Why is it that, with all our knowledge and our material, we cannot pick out the transitional form, that the link is always a missing link? . . . For our present purpose it must content us that probably in South Africa and probably from a kind of reptile near to the Cynodonts in its organization, sprang the first mammal, the great-great-grandfather of us all." (P. 133)

Finally, primates:

"The paleontologist is therefore faced, like the builder of great bridges, with one solid pier of information, the first fossil mammals, on the one side, and on the other, the primitive Monotremes and Marsupials. His task is to build forward from the one side and backwards from the other, till the historical pathway is complete." (P. 199)

So we see that evolution as a total explanation for the development of man is, at best, a must-have-been proposition.

\* \* \*

We are ready now to introduce the third of Simpson's modes of evolution, "Quantum" evolution, which has to do with the explanation of these great gaps in the picture traced above. Simpson refers to them as major discontinuities of the record. His discussion of the subject deals a little more in detail with particular lines than Swinton does. The following are some of his revealing observation:

"... essentially continuous transitional sequences (of

forms between these gaps) are not merely rare, but are virtually absent . . . nowhere in the world has any recognizable trace been found of an animal that would close the considerable structural gap between *Hyracotherium* (the earliest fossil horse found) and the most likely ancestral order, the Condylarthra.

"This is true of all the thirty-two orders of mammals, and in most cases the break in the record is still more striking than in the case of the perissodactyls, for which a known earlier group does at least provide a good structural ancestry. The earliest and most primitive known members of every order already have the basic ordinal characters, and in no case is an approximately continuous sequence from one order to another known. In most cases the break is so sharp and the gap so large that the origin of the order is speculative and much disputed . . .

"This regular absence of transitional forms is not confined to mammals, but is an almost universal phenomenon, as has long been noted by paleontologists. It is true of almost all orders of all classes of animals, both vertebrate and invertebrate. A fortiori, it is also true of the classes, themselves, and of the major animal phyla, and it is apparently also true of analogous categories of plants."<sup>17</sup>

By this time it should be quite clear that there is a body of data, the essential data of physical anthropology, which can validly be abstracted from the total philosophy of evolution, and considered separately from it. And it should also be clear that there is another distinct abstraction which can be conceptualized as the framework upon which the data is arranged. The data does not by any means cover the framework, but the frame is there just the same.

But what of the evolutionists' explanation for the exposed parts of the frame? Simpson's Quantum evolution is merely representative. It involves a combination of the following factors: 1. a small population, 2. a pronounced shift in the environment, and 3. a speed-up in rate of evolutionary (genetic) change, the chance combination of these three making it possible to quickly adapt an entirely new organism to a new environment before the population could increase at any one generation-adaptation stage in the comparatively brief continuum. Obviously under such circumstances good continuous fossil records would not be left. Simpson says of this mode of evolution: "It is, however, believed to be the dominant and most essential process in the origin of taxonomic units of relatively high rank, such as families, orders, and classes. It is believed to include circumstances that explain the mystery that hovers over the origins of such major groups."<sup>18</sup>

He also shows explicitly that it is a hypothetical thing by reviewing the evidence for it as "recorded paleontological sequences" plus "indirect" evidence of such transitions, plus evidence from population genetics "that such a mode of evolution has a probable mechanism and would be expected under given conditions."<sup>19</sup> He also refers to it as an "inferred phenomenon."<sup>20</sup> Thinking, then, of evolution as a threefold concept, it is here in the

"quantum" mode or aspect of the theory, and here alone, that the creationist parts company with the evolutionist and tells him that a revealed, supernatural account of the origin of the major taxonomic groups is just as sound and reasonable as any "inferred phenomenon" no matter how valid the facts from which it is inferred.

\* \* \*

The greatest percentage of references to evolution in the literature today is concerning the interaction between genetic variability and adaptation to environmental change, either in terms of a few generations (speciation), or of the same processes operating over long periods of geologic time (the paleontological or "phyletic" aspect). It is within these two spheres of argument that so many anti-evolutionists have come to grief, usually because of lack of information and unfamiliarity with the data. It is not surprising that Simpson could dispense with a consideration of Creationism in a public lecture in Philadelphia in 1950 with words to the effect that "Creationists are found today only in non- or anti-scientific circles."

One of the chief drawbacks to anti-evolutionists, from Darwin's early critics to the present (familiar as some of their leaders are with the data), is that their activities and literature have been almost completely wrapped up in arguments over petty fragments of the record, assuming that to attack evolution as a total philosophy one must show the data upon which the false assumptions are based to be untrue. Instead of offering a positive, non-evolutionary interpretation of the data themselves, they have been guilty of treating it with scorn and sarcasm for no other reason than that the evolutionist has done something with it first.

What results is that both parties claim to have truth on their side and at the same time charge the other with falsity and ignorance. The creationist attacks the evolutionist's total philosophy from the standpoint of revelation, while the evolutionist answers back with scientific data. Since the evolutionist is seldom caught up in an argument over revelation, the creationist is inevitably drawn to argue on the evolutionist's own ground in terms of genetic processes or paleontological remains, where he is generally over his depth. The creationist must carry the argument to the plane of abstraction where, for the moment, facts are left behind; where hypotheses, theories, and interpretations replace the genes, the mutations, and the bones. There the whole argument must be grounded upon the fundamental assumption of supernaturalism, or else materialism. There alone, as we have tried to point out above, need the creationist part company with the evolutionist, and with his total philosophy.

About the facts, it is better to be informed and to concur on at least a minimum of relevancies than to argue about irrelevancies. About the interpretations of those facts, the creationist's position is more than a match for the evolutionary hypothesis whether in objectivity, in completeness, or in reasonableness.

\* \* \*

In conclusion, we have tried to show how the subject of anthropology may be studied without involving oneself needlessly in the evolutionary hypothesis.<sup>21</sup> What has been advocated is not compromise, though some will no doubt interpret it that way. Rather is it a plea for Christians to take the facts of science and do something with them. This requires, of course, that each define "scientific facts" for himself, by becoming so well acquainted with them that the distinction between them and their interpretations is made absolutely clear to begin with.

We have an "interpretation", a "framework" for all the facts about which we do not need to appear unobjective, nor to apologize, namely Revelation. Let us not be guilty of causing unbelievers to reject our "framework" because we reject their facts.

1. Marett, R. R., *Anthropology*, New York: Holt, 1912, p. 8.
2. Kroeber, A. L., *Anthropology* New York: Harcourt, Brace, 1948, p. 6.
3. Carter, G. S., "The Theory of Evolution and the Evolution of Man," in *Anthropology Today*, A. L. Kroeber, ed., Chicago: U. of Chicago Press, 1953, p. 327.
4. Simpson, G. G. *The Meaning of Evolution*, New Haven: Yale U. Press, 1949, p. 344.
5. Howells, W. W., *Mankind So Far*, New York: Doubleday, 1944, p. 5.
6. Simpson, G. G., *Tempo and Mode in Evolution*, New York: Columbia U. Press, 1944, chapter VII.
7. Mixter, R. L., *Creation and Evolution*, A. S. A. Monograph Two, and Bullock, W. L., "The 'Kind' of Genesis and the 'Species' of Biology," *Journal of the A. S. A.*, June, 1952.
8. *Tempo and Mode*, p. 199.
9. *Ibid.*, p. 202.
10. *Creation and Evolution*, p. 2.
11. *Tempo and Mode*, pp. 202-203.
12. There may occur to the reader matters such as museum reconstructions, or the recent exposure of the Piltdown fraud. For a discussion of these and other matters concerning the reliability of fossil data, see the following:  
Simpson, G. G., "Some Principles of Historical Biology Bearing on Human Origins," Cold Spring Harbor Symposia on Quantitative Biology, Vol. XV, *Origin and Evolution of Man*, 1951, pp. 55-65. Mixter, R. L., "Fossils Suggest Creation," in *Creation and Evolution*. Buswell, J. O., III, "Piltdown Man," *Journal of the A. S. A.*, March, 1954.
13. *Tempo and Mode*, p. 203.
14. *Mankind So Far*, p. 3.
15. *Ibid.*, p. 5.
16. Swinton, W. E., *The Corridor of Life*, London: Jonathan Cape, 1948.
17. *Tempo and Mode*, pp. 105-107.
18. *Ibid.*, p. 206.
19. *Ibid.*, p. 207.
20. *Ibid.*, p. 209.
21. The bibliographical discussion for the study of evolution will accompany that for the study of prehistoric man in the next installment.

# The Reconstruction or Cataclysmic Theory

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## FOREWORD

There are many different statements of the Reconstruction Theory. The statement in this article attempts to be somewhat inclusive of the various forms of the theory. I am sure that each proponent of the theory will find parts which he will consider as not belonging to the theory. This type of treatment seems necessary in order that the article may deal with the various parts of the theory held by different persons.

It should be clearly understood that no attempt has been made to criticize the authors of the Reconstruction Theory. The faith of those teaching the theory is not being attacked. I believe their faith to be as strong and sincere as the faith of those who see the great dangers of the theory.

The purpose of this treatment is not to offend any one but, if possible, to place our Christian faith on a higher scientific level, to save the faith of Christian young people entering college and to help open the door for evangelical work in the colleges of our country.

The reconstruction theory is very old and has been taught by the conservative church over a long period of time. It is an interpretation of the first chapter of Genesis and is something like this: In the beginning God created the heavens and the earth *perfect*, ready for the habitation of man. Life then developed on the earth very slowly. Very primitive forms came first, then more and more complex forms until all of the forms of plants and animals had evolved. Some believe they were created, others think they evolved by the evolutionary principle. The early forms left remains in the earliest and deepest strata while more and more recent forms occupied higher strata. This constituted all of the geological ages and accounts for all of the fossils found in the earth. Then Satan sinned and was cast out of heaven to the earth. The earth was destroyed and it *became* without form and void and dark, destroying all life. Then about 6,000 years ago God reformed the earth and recreated the life upon it in six 24-hour consecutive days. This last creation was so rapid that no remains can ever be found to record these creative acts of God.

The main arguments used to support this theory follow:

1. God is a perfect God and cannot do anything imperfectly. Therefore the first verse of Genesis means that "In the beginning God created the heavens and the earth *perfect*." Since God created the earth to be inhabited ("He formed it to be inhabited.") it came from his creative act ready for man.

2. Since the geological ages are very long, running into hundreds of millions of years, and since the days of Genesis are evidently 24-hour days, there can be no relation between the days of Genesis and the geological ages. Since Ussher worked

out a very careful dating of the scriptural occurrences through the genealogies back to Adam and found it to be only about 6,000 years it can be only about 6,000 years back to the first day of Genesis. Since the first day of Genesis deals with the reformation of the earth we must place the geological ages between the first and second verse. Thus all of the geological ages occupy a long period of time between verse one and verse two.

3. Since the Bible says nothing as to how life came to the earth in this long period between verses 1 and 2, some are willing to accept the evolutionary explanation for the origin of all life before the first day of Genesis. A pre-Adamic race apparently existed before the first day of Genesis for God said to man "Be fruitful, and multiply, and replenish the earth, . . ." (Gen. 1:28) God would not have said "replenish" if man had not been here before. The same can be said for the other forms of life.

4. Satan sinned, lost his position as the covering cherub and was cast down to the earth and the earth was destroyed. This idea is supported by the following references: Jeremiah 4:23-26; Isaiah 24:1, 19-20; 45:18; 14:9-17; Ezekiel 28:13-19; and Luke 10:17-18. This justifies our changing the word "was" to "became" and making the second verse read "And the earth *became* without form, and void, . . ."

5. The days of Genesis are necessarily 24-hour days. There is such a close relation between plants and animals that it was necessary that they come into existence at about the same time. Certain types of plants cannot propagate without the bee, others require a special type of fly. God created plants for the food of animals and man. If he had created plants millions, or hundreds of millions of years before man and the animals, there would have resulted a terrible waste of this food. God is not wasteful.

6. The reconstruction theory by completely separating the days of Genesis from the geological ages has removed a great stumbling block from the minds of college students. They may now accept both the Scriptures and science and encounter no conflict.

Let us now consider these arguments for the reconstruction theory, item by item.

1. The introduction of the word "perfect" to the first verse of Genesis violates one of the most important rules of scriptural interpretation, namely: we must neither add nor subtract anything from

the scriptural statement. John emphasizes this principle in Revelation 22:18-19 when he writes: "If any man shall add unto these things, God shall add unto him the plagues that are written in this book: And if any man shall take away from the words of the book of this prophecy, God shall take away his part out of the book of life. . . ."

I would not object to the argument that God does everything perfectly. I do object to any man adding the word "perfect" to any scriptural statement and then interpreting the meaning of the word. This word "perfect" has given the church trouble before. Men believed that the circle was the only perfect curve and, therefore, every planet moved around the sun in a perfect circle. When there seemed to be trouble with the circle they had the planet move in a small circle whose center moved around a larger circle and the center of the larger circle moved around a still larger circle, etc. A planet moved around a very small circle and the center of this circle moved around a circle a little larger whose center in turn moved around a still larger circle, and finally, whose center moved on a circle around the sun. When the first astronomer suggested that the planets moved around the sun in an ellipse he was forced by the church to recant to save his life. Today we know that the ellipse is just as perfect a curve as is the circle.

We know today that a diffuse nebula, as described in the second verse, is just as perfect an astronomical body as was the earth when man was created. Furthermore God tells us just what steps the diffuse nebula went through in being prepared for the habitation of man. Those steps agree perfectly with modern science. Anyone can read them in the first chapter of Genesis and in books of science.

Should the church be guilty of adding to the very first verse in the Bible? God forbid!

There are two revelations of God. One is in the Scriptures and the other is in nature. The layers of the earth record the acts of God's creation and show their order. The chemist discovers the intricacies of the creation, in the way matter is built up from atoms and molecules, in the way atoms are built up from protons, electrons, neutrons, etc. The physicist discovers the laws governing the physical universe; laws of gravitation, of forces, of motion, etc. These are the laws which God laid down when the universe was created, laws to keep the universe orderly. The astronomer discovers the created universe, the composition of each part, how it moves, how it is held together, its probable origin and possible future. The biologist discovers something of the tremendous intricacies of living things and the tremendous wisdom involved in their creation.

These two revelations of God *must* agree. Any apparent disagreement demands, at once, a recon-

sideration of our scriptural interpretation and a very extensive re-examination of the scientific data involved.

2. The geological ages are very long. They represent great periods of time, some of them hundreds of millions of years. Radioactive materials in these layers reveal their ages or at least the general magnitude of the age. If we were to doubt the greatness of these ages we would doubt the working of the physical laws of God. We could as well doubt that hydrogen and oxygen can form water or that if you were to drop a heavy lead ball it would fall downward.

The datings of Ussher, although very carefully made, are no longer considered to be even approximately accurate by many anthropologists or by many careful students of the scriptural genealogies. Most of our students of genealogies believe that the word translated "begat" refers to a descendant, not necessarily a son or a daughter. This seems to be borne out by Deuteronomy 4:25 "When thou shalt beget children, and children's children, . . ." Many authorities are very sure that great gaps occur in all of the genealogies. This seems possible since Matthew 1:1 reads: "The book of the generation of Jesus Christ, the son of David, the son of Abraham." Certainly there are tremendous gaps here. I asked a prominent student of the genealogies what he would set as the lowest estimate of the age of man, taken only from the genealogies. He said he thought that 50,000 years was the absolute minimum, but it might be much longer. We do not have a definite statement of the age of man in the Scriptures. We should not be dogmatic about the 6,000 years.

The remains of man appear primarily in the upper sedimentary layers of the earth and cannot from the layers themselves be dated with any high degree of accuracy. The age of such remains are usually dated by the amount of sediment which has been deposited above them, but the rate at which this sediment was deposited over a period of 100,000 years has probably varied tremendously. The probable error here constitutes a sizable factor of the estimated age. However, there is a new method called the carbon-14 method of dating which has great promise. This method is being improved by Dr. Laurence Kulp of Columbia University, a member of the American Scientific Affiliation. It is expected that within a very few years it will be possible to date, with a fair degree of accuracy, all remains of man back to at least 100,000 years. Until this is accomplished, we can only say that all evidence, both scriptural and scientific point to an age of man far greater than 6,000 years.

If we place the geological ages between verse 1 and verse 2 we immediately move verse 2 to a re-

cent period of time. Science cannot place verse 2, with the earth without form, void and dark within the last 6,000 years or even the last 60,000,000 years. Neither can you place the beginning of night and day in verses 4 and 5 or the separation of the oceans and the clouds in verses 6 to 8 only 6,000 years ago. Any science teacher, non-Christian or Christian, can show a recent date for verse 2 to be ridiculous. No, verse 2 is not recent.

Again suppose we try to place the geological layers between verses 1 and 2 and then let the earth become without form, void and dark. (Nathan Stone of Moody would add as basic meaning of the original words "of unmeasurable magnitude and in great commotion.") The only astronomical state of any body fulfilling this description is certainly a diffuse dark nebula. Here the atoms are separated from each other and many of the electrons are removed from the atoms. Now, suppose you place all of the geological ages with their layers between verses 1 and 2 and then let the earth become a diffuse nebula and again collect the nebula to form the earth, where would all of the fossils and layers be? No, the geological layers all followed verse 2. But I hear someone say that they believe that my interpretation of verse 2 is wrong. (Any astronomer will give the same interpretation.) They believe that it means that only the life was destroyed upon the earth. If so, it must have been all of the life on the earth or else no recreation would have been needed. If all of the life were destroyed on the earth, the layers of the earth would clearly record the event. There is no such record. We are forced to place the geological ages and their geological layers after verse 2, and in fact, the fossil-bearing layers after verse 10.

Are we going to place the geological layers between verses 1 and 2 and thereby make much of the remainder of this chapter contradict known facts of science? God forbid!

3. The original word translated "replenish" carries no meaning of filling again. It simply means, fill the earth. There is no scriptural evidence of a pre-Adamic race. Science indicates that the human race has been continuous since its first advent to this earth.

4. A second principle of scriptural interpretation is that we must not take a passage out of its context.

The idea that Satan sinned, was cast out of heaven and the earth was destroyed and it *became* without form and void can only be supported by violating the above principle.

Let us look at the references.

Jeremiah 4:23-26, "I beheld the earth, and lo, it was without form, and void; and the heavens and they had no light. I beheld the mountains and lo,

they trembled, and all the hills moved lightly. I beheld, and lo, there was no man, and all the birds of the heavens were fled. I beheld, and lo, the fruitful place was a wilderness, and all the cities thereof were broken down at the presence of the Lord, and by his fierce anger."

What is the passage talking about? Look at the context. Verse 10 is talking about Jerusalem. Verse 31 is talking about the daughters of Zion. This passage is clearly talking about Jerusalem and the children of Israel. Jerusalem and the daughters of Zion, certainly, did not exist between verses 1 and 2. This passage is taken out of its context.

Isaiah 24:1, 19-20, "Behold the Lord maketh the earth empty, and maketh it waste, and turneth it upside down, and scattereth abroad the inhabitants thereof . . . The earth is utterly broken down, the earth is clean dissolved, the earth is moved exceedingly. The earth shall reel to and fro like a drunkard, and shall be removed like a cottage; and the transgression thereof shall be heavy upon it; and it shall fall and not rise again."

Verse 5 ". . . because they have transgressed the laws, changed the ordinance, broken down the everlasting covenant." Certainly this is speaking about the Jewish people. Verse 15 "Wherefore glorify ye the Lord in the fires, even the name of the Lord God of Israel . . ." This also refers to the Jewish people. Verse 23 ". . . when the Lord of hosts shall reign in mount Zion and in Jerusalem . . ." Here we are not only speaking about the Jewish people, but about Christ's reigning in Jerusalem. Certainly the Jewish people did not exist between verses 1 and 2, nor did they have the everlasting covenant, nor did Christ reign on Mt. Zion between verses 1 and 2. This reference is absurdly taken out of its context.

Isaiah 45:18 "For thus saith the Lord that created the heavens; God himself that formed the earth and made it; he hath established it, he created it not in vain, he formed it to be inhabited; . . ."

Verse 19 ". . . I said not unto the seed of Jacob seek ye me in vain:"

Verse 18 is interpreted by the proponents of the reconstruction theory to mean that God created the earth ready to be inhabited as it came from his hand. Verse 18 like verse 19 implies a purpose. It appears to mean that God had a purpose in creating the earth and that purpose was that it should be inhabited. The condition of the earth is given in Genesis 1:2 and the steps that God took in preparing this earth for the habitation of man are related in the rest of the chapter.

Ezekiel 28:13-19 "Thou *hast been* in Eden the garden of God; every precious stone *was* thy covering, the sardius, topaz, and the diamond, the beryl, the onyx, and the jasper, the sapphire, the emerald, and the carbuncle, and gold; the workmanship of thy tabrets and of thy pipes *was prepared* in thee in the day that thou *wast* created. Thou *art* the anointed cherub that covereth; and I have *set* thee so: *thou wast* upon the holy mountain of God; *thou hast walked* up and down in the midst of the stones of fire. *Thou*



wast perfect in thy ways from the day that thou wast created, till iniquity was found in thee. By the multitude of the merchandise they have filled the midst of thee with violence, and thou hast sinned: therefore I will cast thee as profane out of the mountain of God: and I will destroy thee, O covering cherub, from the midst of the stones of fire. Thine heart was lifted up because of thy beauty, thou hast corrupted thy wisdom by reason of thy brightness: I will cast thee to the ground, I will lay thee before kings, that they may behold thee. Thou hast defiled thy sanctuaries by the multitude of thine iniquities, by the iniquity of thy traffick; therefore will I bring forth a fire from the midst of thee, it shall devour thee, and I will bring thee to ashes upon the earth in the sight of all them that behold thee. All they that know thee among the people shall be astonished at thee: thou shalt be a terror, and never shalt thou be any more."

In general the tense in prophecy seems to have but little significance. Most prophecies are written in the past tense. (See Isaiah 53.) In this prophecy we have a remarkable case of change of tense. Here the past tense appears to have been used when the event was past and the future tense appears to definitely refer to future events.

Aside from naming Satan as the covering cherub, everything is past tense from the start of the thirteenth verse to the middle of the sixteenth verse, where the future tense starts with: "therefore I will cast thee as profane out of the mountain of God." Compare with this Revelation 12:7-12, particularly the ninth verse which reads: "And the great dragon was cast out, that old serpent, called the Devil, and Satan, which deceiveth the whole world: he was cast out into the earth, and his angels were cast out with him." The Ezekiel passage and the Revelation passage evidently refer to the same event. Certainly, the Revelation passage is future and is to take place at the time of the great tribulation period.

The next event in Ezekiel is: "I will destroy thee, O covering cherub, from the midst of the stones of fire." The destruction of Satan is forecast in Revelation 20, particularly the tenth verse. "And the devil that deceived them was cast into the lake of fire and brimstone, where the beast and the false prophet are, and shall be tormented day and night for ever and ever." This occurs at the end of the millenium and is still more future than the previous event.

At the seventeenth verse Ezekiel changes to the past tense again: "Thine heart was lifted up because of thy beauty, thou hast corrupted thy wisdom by reason of thy brightness." This is referring to Satan's early sin.

Ezekiel again turns to the future: "I will cast thee to the ground, I will lay thee before Kings, that they may behold thee." Again Revelation 12 and 20 refer to the same future events.

Again the past tense is used: "Thou hast defiled thy sanctuaries by the multitude of thine iniquities, by the iniquity of thy traffick."

The remainder of the Ezekiel passage is prophesied

in Revelation 20. A part takes place before the millenium and the rest at its immediate end.

Isaiah 14:9-17 "Hell from beneath is moved for thee to meet thee at thy coming: it stirreth up the dead for thee, even all the chief ones of the earth; it hath raised up from their thrones all the kings of the nations. All they shall speak and say unto thee, Art thou also become weak as we? art thou become like unto us: Thy pomp is brought down to the grave, and the noise of thy viols: the worm is spread under thee, and the worms cover thee. How art thou fallen from heaven, O Lucifer, son of the morning! how art thou cut down to the ground, which didst weaken the nations! For thou hast said in thine heart, I will ascend into heaven, I will exalt my throne above the stars of God: I will sit also upon the mount of the congregation, in the sides of the north: I will ascend above the heights of the clouds; I will be like the most High. Yet thou shalt be brought down to hell, to the sides of the pit. They that see thee shall narrowly look upon thee, and consider thee, saying, Is this the man that made the earth to tremble, and did shake kingdoms; That made the world as a wilderness, and destroyed the cities thereof that opened not the house of his prisoners? . . ."

This passage describes Satan's sin. It describes very similar events to those of Ezekiel, but is addressed to Satan at the time of his fall, which time again is described in Revelation 12 and 20.

Luke 10:17-18 "And the seventy returned again with joy, saying, Lord, even the devils are subject unto us through thy name. And he said unto them, I beheld Satan as lightning fall from heaven."

The prophecies of Isaiah 53, regarding Christ are all written in the past tense, but refer to future events. I believe this is also a prophecy, made by Christ, referring to the future. It cannot refer to the same events referred to in Isaiah and Ezekiel. Satan is still our accuser in heaven as witnessed in the book of Job and in Revelation 12:10 " . . . for the accuser of our brethren is cast down, which accused them before our God day and night."

Satan continues to be our accuser up to the very last when he is cast out of heaven and starts the great tribulation period.

## 5. The days of Genesis.

The days of Genesis might be 24-hour days, but that is not necessary. Notice the following references where the same word, day, is used as that in Genesis.

The day of destruction	Jb. 21:30
The day of distress	Gen. 35:3
The day of plague	Nu. 25:18
The day of wrath	Jb. 20:28
The day of temptation	Ps. 95:8
The day of trouble	Ps. 102:2
The day of vengeance	Prov. 6:24
The day of adversity	Prov. 24:10
The day of prosperity	Ec. 7:14
The day of death	Ec. 8:8
The day of Midian	Isa. 9:4
The day of anger	Isa. 13:13
The day of salvation	Isa. 49:8
The day of evil	Jer. 17:17
The day of Jerusalem	Jer. 38:28
The day in which the walls were built	Mi. 7:11
The day of Jesus Christ	Phil. 1:6
Your concordance will add many more.	

These are certainly not all 24-hour days. The days

of Genesis could be either longer or shorter than a 24-hour day.

Genesis 2:4 is a very striking case. "These are the generations of the heavens and the earth when they were created, in the *day* that the Lord God made the earth and the heavens, and every plant of the field before it was in the earth . . . ." Here all of the days of the first chapter are referred to as "the day." It is impossible for all of these days to be 24 hour days.

Some say that the use of morning and evening in the first chapter forces a 24-hour day, but look at Psalm 90:5-6 " . . . They are like grass which groweth up. In the morning it flourisheth, and groweth up; in the evening it is cut down, and withereth." This certainly is not a 24-hour day.

After some of the creations God told them to multiply and fill the earth. This practically requires a lapse of time between the acts of creation. Certainly, God gave them time to multiply and fill the earth. Plants in the sea necessarily became quite abundant before fish could live. Plants on the land necessarily became abundant before the creation of land animals.

The days of Genesis may have been very short periods of time, days of creation, then a geological age elapsed while that form of life multiplied and filled the earth. When the earth was ready for a new form of life, God made another creation.

These days of creation may have been 24-hour days, they may have been of less than a second duration, they may have been many years. They may have been geological ages, but I do not favor that interpretation. Psalm 33:6-9 "By the word of the Lord were the heavens made; and all the host of them by the breath of his mouth . . . For he spake, and it was done; he commanded, and it stood fast." This seems to imply short periods of creation.

The argument that plants could not exist without animals does not seem to be logical. The fossils in the earth certainly bear mute evidence that they did not appear at the same time. The fact that one type of plant requires a certain type of insect for its propagation is not proof that it always has had such a requirement. Nor is it proof that this particular type of plant was a part of the original creation of plants. Man has developed many new plants. Possibly insects have been responsible for the development of some types also.

The argument that God is not wasteful, and he would be wasteful if he created plants for food long before there were animals or man to use them, is a philosophical argument which is meaningless.

The great forests grew and fell one on top of another until our great coal beds were formed. Were they wasted? Were the materials that formed our great oil reservoirs, that formed our great graphite beds wasted? It is possible that more waste exists to-

day with man in control than ever existed before he came on the scene.

6. Did the reconstruction theory remove a stumbling block from the minds of Christian students?

The Christian student is taught the reconstruction theory in the church; he enters college and has it proved to him that: there was no destruction of the earth after it was inhabited; life on the earth was not destroyed by a great cataclysm requiring a complete new creation; that light did not appear on this earth 6,000 years ago; that land did not rise from the water 6,000 years ago, or 60,000 or 60,000,000 years ago; that the age of life on this earth has been at least 2,500,000,000 and in many cases hundreds of millions of years elapse between the advent of one general form of life and the next general form. A sad result follows. Nearly all of these students lose faith in the Bible. Certainly, they should question their teaching, to see if they are scriptural, but very few do. I have personally had the privilege of re-establishing the faith of several hundreds of students who were taught the reconstruction theory in a conservative church, and then lost their faith in college because of the reconstruction theory.

Accepted science, today, is literally at the door of the church asking the privilege of proving that the Bible is the inspired word of God. If we are willing to work with Christian men of science we can do great things for the faith of our Christian young people, and we can reach many non-Christian students in the colleges.

We of the church point the accusing finger at the state colleges and say that they are wrecking the faith of our young people. My own experiences indicate that the teaching of the reconstruction theory is wrecking the faith of more students than all of the atheistic professors put together. God forbid that we of the church shall so continue to give teachings which are unscientific and unscriptural. It would be very difficult for the church to change the teachings of these atheistic professors, but it could easily correct its own dangerous teachings.

May God prompt the ministers and Sunday School teachers of the conservative churches to carefully examine the scientific materials which they are teaching.

The findings of science today are such that they may be used by the church to prove, that of a certainty, the Bible is the inspired word of God.

The books *Modern Science and Christian Faith* and *Science Speaks* are both published by Van Kampen Press. They both constitute an important start at showing scientifically that the Bible is accurate and is God's word.

The American Scientific Affiliation is an organization of Christian men of Science. It stands ready to aid the church in this most important undertaking.

# The Philosophical Implications of the Christian Religion

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It may at the outset appear as very strange to some that there should be any link between the spheres of philosophy and theology; that there should exist any connection between that which by its very nature is rational, philosophy, and that which is revealed, theology. To many, these articles may seem exceedingly far-removed from the "practical" aspects of Christianity. However, we are by no means the first to suppose that a connection between the domains of philosophy and theology not only exists, but is very vital to the support and advancement of the Gospel. Augustine, Bishop of Hippo; Irenaeus; Tertullian, the converted Roman lawyer; Thomas Aquinas, the "Angelic Doctor;" most of the reformers and a host of other worthies too numerous to mention believed, despite their differences, that there is a rather close co-ordination, an actual cooperation, between the quest given impetus by man's thinking powers, as exemplified in philosophy, and the answer to the quest, as exemplified in theology and revelation. Nor does the fact that many a philosopher has failed to recognize the significance of the revelation militate against or vitiate the truth of the foregoing assertion. To phrase it in another way, God thinks and speaks; man hears; whether accurately or poorly, whether willingly or unwillingly, whether obediently or disobediently, whether understandingly or not understandingly, MAN hears and then proceeds to think and to act according to the attitude in which he has received the message, the divine communication.

Now, this attitude in which the message is received may be viewed as the "pre-conditioning factor" in the tensional relations that the very given character of the revelation creates, or at least calls forth. Man can not remain the same AFTER he has once heard God's voice, as he was BEFORE he heard it. This is essentially what is meant by "tensional relationships" at least in these articles. If man responds favorably to such revelation; or in evangelical parlance, if he "repents and believes," then the tension is dissolved on the basis of Christ's work upon the Cross. If, however, the revelation is repudiated, or even simply ignored, then the tensional relationships, far from being dissolved, are increased and augmented to the degree and to the point where judgment becomes inevitable, that is "God's grace strained to the breaking point."

A word may here be said as to the emphasis of philosophy. Philosophy proposes metaphysic as read-

ers of the Greek Sage, Aristotle, all know; Christianity assumes a metaphysic as readers of the Hebrew Prophet, Moses, are all aware (Ex. 3:14). Philosophy argues, in its better moments, for the reality of the existence of God, as the well-known "five-fold proof for the existence of God" proposed by Thomas Aquinas exhibits. Revelation, significantly enough, *never* argues for the truth of God's existence. Revelation simply assumes the validity of the proposition "God exists," then progresses to erect its entire ontology, or science of being, its entire epistemology, or theory of knowing, its entire ethic, as embodied in the ten commandments and the Sermon on the Mount, its entire scheme of redemption, as demonstrated by Calvary, its entire construction of eschatology, or things yet to come, upon one eternal and sublime declaration: "In the beginning, God created the heavens and the earth" (Gen. 1:1). One will find no pantheism here, for God created the universe as something distinct and separate from Himself. One will look in vain for any hint of materialism here, for its cause originates not in itself, but in a power above and beyond it. One will discover no traces of the doctrine of the possibility of the eternity of the creation here, for "He spake and it was done." Atheism, Agnosticism, which is sometimes at least just a euphonism for the first word, as well as Deism, Skepticism, etc., are all discounted by this divine evaluation of their inadequacy as legitimate contenders for a valid world-view.

Now, it is to be admitted there are many types of philosophy in general, and of religious philosophy, to which we must confine our discussions, in particular; Platonism, Aristotelianism, Cartesianism, Hegelianism, Kantianism, and of late logical positivism to mention but a small portion of the vast and complex areas of thought. To hope to give even the briefest recapitulation of these would involve us in matters which would take us far beyond our purposes in this series, to say nothing of taxing the reader's mind and patience to the limits of endurance. Suffice it to remark that these philosophical systems of thoughts proposed by their respective founders, Plato, Aristotle, Descartes, Hegel, Kant, and the late John Dewey, all had at least one thing in common, a certain set of governing ideas or principles, without which their philosophies could not even have been formulated, much less promulgated. Since the right of these philosophies, whether true or

false, to possess a "springboard" for their speculations can not be lawfully challenged, does anyone dare to have the temerity to allege to the Christian that he has no right to announce and uphold a set of principles, upon which he can also build his theological edifice? Whether or not these principles are worthy of credence may be another matter, technically speaking. But that those principles must be allowed to be firmly held and clearly stated is beyond debate, except by those who secretly fear, as the Communists, the inherent power of the Christian position to prove itself again and again correct, when allowed leeway to do so! In fact, the most remarkable aspect of the whole situation is that, even when suppressed, as in the past, by the Nero's, or in the present by the Malenkov's, a strong, virile Christianity always expresses itself with or without the licensure of man. What, then, are the presuppositions of evangelical Christianity? To our mind, there are at least four such assumptions without which Christianity might exist in name but not in essence. Viz:

- I. Supernaturalistic.
- II. Historic.
- III. Redemptive.
- IV. Culminative or Prophetic.

#### I. The Aspect of the Supernatural

We make no apologies for commencing at this level: IT IS EXACTLY WHERE THE BIBLE COMMENCES. To begin anywhere else would not merely be a mistake in logic, but would be guilty of treason to the Christian Cause, in that it would give the benefit of argument to the infidel and skeptic. The very first verse of Scripture, already quoted, sets forth a SUPERNATURAL GOD WHO WORKS IN A SUPERNATURAL WAY. If the school-men of the middle ages had been designated to write the first few pages of holy writ, with what elaboration, with what philosophic ostentation, with what acute argumentation would they have perhaps proceeded from the level of the natural to the level of the supernatural, all short cuts carefully avoided!

Exactly the reverse is true, however, of the divine recordings of the genus of history. No philosophical display, no grandiose presentation of argumentation for the existence of the Supreme Being here, no analysis of necessity of contingency, but in one uniquely brief, but all-penetrating statement, "IN THE BEGINNING, GOD CREATED THE HEAVENS AND THE EARTH." God bursts through the darkness of man's thought, and bursting through cries, "Let there be light." "And it was so."

#### II. Historic Aspect

Now the close relationship of history to time and time to history is so apparent that it need scarce be pointed out. Time is the stage on which the drama of all history is well or poorly played. Take the example of the importance of dates, those same dates of which

we are never quite certain or positive; the fall of Samaria in 722 B.C., the sack of Jerusalem in 586 B.C., the reign of Jeroboam in 933-911 B.C., the desecration of the "Holy City" by the hands of the Romans in 70 A.D., etc., all bear witness, whether we can recall them on the spot or no, these dates, we repeat, testify of the moving dialectical scene of history from its original inception to its final eschatological consummation. Augustine, perhaps the first genuinely Christian philosopher, and Bishop of Hippo, saw the importance of this when he pointed out in *The Confessions* that "TIME WAS WITH THE CREATION." Thus when asked the even now oft repeated question, "What was God doing before the Creation?" he would try to demonstrate to his questioner that the inquiry was devoid of sense of meaning, by the fact that the terms of either "BEFORE" or "AFTER" are contingent upon the idea of time. To employ his own illustration, if not his very words, he would take the BIRTH OF CHRIST as an ungainsayable example, and then clearly show that all events BEFORE are referred to in one way, and all events AFTER are referred to in another way.

Thus to ask what God has been doing SINCE the Creation has a genuine answer, and thus is a legitimate question. God has been seeking for LOST men, down through the ages. Since the Creation, or after God had made the world, He has been on a quest, the quest of men. His methods of seeking may indeed vary, but the objective of the search has been the same. "My Father worketh even until now and I work" (John 5:17). "For the Son of Man came to seek and to save that which was lost" (Luke 19:10).

But to demand or even expect an answer to the query "What was God doing BEFORE the CREATION?" is absurd because, as Augustine has stated, "Time was given with the Creation." In other words, time is just as much a part of the Creation, as, say, trees, rocks, stars, animals, man or the whole universe itself. This when we think about it, gives a certain philosophical justification to the doctrine of eternal punishment or Hell. (If, indeed, we need such a justification.) Man is part and parcel of the creative act of God; Time, as we have already implied is likewise part and parcel of the same. Heaven exists as ETERNAL life; Hell, its opposite, exists as ETERNAL death. We Christians make the common, but gross error of thinking of the term or word "ETERNAL" to be put quantitatively different from temporality. That is, we suppose that ETERNAL LIFE is naught but the stretching of the yardstick of our present life, so that we never need to make out wills, purchase our cemetery plot, or summon the undertaker "in glory." Now, we are by no means denying that ETERNAL LIFE includes and embraces these glories, but it goes much further and deeper than that. In a word, there is not alone a quantitative difference, there is and must be a qualitative difference as well.

Perhaps not too much can be made of the following consideration. However, it is at least suggestive. "And they shall be tormented day and night forever and ever" (Revelation 20:10b). There is an implicit inference here that the dialectic of the space-time continuum still prevails in the region of the lost. However, in the heavenly Jerusalem, we are told that, "There shall be no night there" (Revelation 22:25b). As we said before, we are not pressing the issue, but it would seem that while those who are redeemed are impervious to time, those who are lost are yet conscious of time, a never-ending, ever-painful, ever-pressing, concept of time. This would render the punishment for Christ-rejection all the more severe because the weight of conscious responsibility would be akin to a condemned man in the death-cell awaiting an execution not localized to the moment of infliction, as at the throwing of the switch, or the springing of the trap. But, an ever-inflicted penalty all the more terrible because of its unending duration.

### III. Redemptive Aspect

That man as a fallen, sinful being stands in need of the redemptive act of God is one of the cardinal, if not the cardinal presupposition of Holy Writ. "All have sinned and come short of the glory of God." "As in Adam all die, even so in Christ shall all be made alive." Redemption may be defined as, that act of God, whereby He, through no merit of the creature, has nonetheless entered into self-assumed, promissory relationship to save, to pardon, to forgive, and to restore to the Divine favor all those who exercise repentance towards God, and faith in Jesus Christ, and having as its ultimate end the vindication of the fidelity of the Triune God.

Without burdening the reader with an excess of linguistic luggage, it may be well to point out that the preposition translated "for" in our versions does not convey in our language the tremendous force that it possesses in the original. It is the word "HUPER," and the word "ANTI." These terms signify not only the usual notions involved in our word "for," but, the concept instead of, in the room of, in the place of, in exchange for, as a substitute for, as a ransom price of, as a penalty for, another individual. Thus, when a child utters the seemingly simple words, "Jesus died for me," he is verbalizing the most profound truth of all communicated revelation.

Man is faced from the Divine viewpoint with two antinomical positions: the one, the Divine righteousness, the other, his own depravity. This tension in man's being becomes so acute as to invite, yes demand, the awful displeasure of an Holy God. Were there no point of relief, how desperate would man's plight be! However, the tension becomes resolved at the "meeting place of the concourse of the ages" the place called Calvary, where God in infinite grace and love assumes

the responsibility for man's sin, on the condition of man's faith, thus bringing about the Divine synthesis of redemption, forever alleviating man's tension, and meeting the utmost exigencies of the Divine Holiness arising from God's own independent being.

The doctrine of man as created "Imago Dei" (in God's image) underlies the Biblical concept of redemption. That this does not mean a physical, but moral, rational and emotional image should be immediately apparent to all above the cradle roll level in Sunday School. Along with the concept of the aforementioned "Imago Dei" there runs a parallel truth of "creature-responsibility." Now where there is such responsibility, unless words are utterly meaningless, anything like absolute determinism, the baptized named for "Fate" is outside the pale of reason. If I am to be held responsible or accountable for my actions, I must have bestowed upon me the right to exercise the power of choice or, to put it bluntly, the free-will. However, free-will can only be properly evaluated in man's original status, i.e. man's state before the fall. We judge we can do no better than to let the greatest of all pre-Reformation theologians, St. Augustine, Bishop of Hippo speak for us. "Free-will was given for *choice* and not for sin, but since man has chosen sin, he can do nothing but sin, until and unless alleviated by Divine grace." We realize that this is a high position with a high price. But may God make us willing to bear at least this much of the Cross. With this position rigid as it may appear agree the words of the Apostle Paul: "So then, they that are in the flesh cannot please God." The unregenerate man is in essence a covenant-breaker. The unregenerate, the unsaved, the unconverted are unable to please God. Thus, when he performs the most simple act, as drinking water, it must be a sinful act because the covenant-breaker while using the Creator's benefits, the cold water, is still denying the Creator's sovereign authority over his life.

On the other hand, what of the regenerate man? He is no longer a covenant-breaker, but a covenant-keeper. Though it may be at the subconscious level, it is true that when the genuinely regenerate individual performs a simple act, as drinking water, he does it with a thankful, obedient heart. In a word, the heart of the unregenerate is an unconverted, unredeemed, unsanctified heart. "But ye are washed, but ye are sanctified, but ye are justified." Thus it is evident that regeneration goes much deeper than a mere provisional method for guilty sinners to escape the Hell which is their just desert. As one has long ago said, "Heaven will not be filled with pardoned criminals, but with redeemed saints."

Redemption thus includes the whole totality of man, regardless as to how theologians may care to divide him. There is no aspect of the creature that has been left unredeemed by the Creator. Man is redeemed physically; man is redeemed metaphysically. Man is



redeemed Spiritually; he is redeemed ontologically. The blood of Christ not only covers all man's sin, but all man's being as well. Through the process of redemption eternal rapport has been established between the august Creator and the finite creature.

Oh, matchless love divine  
How shall this tongue of mine  
The great, glad tidings tell  
Of wondrous grace divine  
That I a child of Hell  
Should in His image shine  
The Comforter has come.

#### IV. Culminative or Prophetic Aspect

The proper understanding of Christianity cannot be reached, however, until we consider that final reference, that ultimate goal towards which Christianity points by promise, precept, and warning. Beginning with the simplest of all statements in the so-called Lord's Prayer "Thy kingdom come, thy will be done" and culminating with the intricacies of the interpretation of the Revelation there is an unfolding scheme of eschatology which must be firmly united to that corpus of revelation which has preceded it in the Old Testament setting forth in sometimes beautiful, sometimes lurid, sometimes promising, sometimes terrifying features the concept of a final omega to history. Properly understood, Christianity is the only religion with a definite eschatology. The Greeks, for example, had no proper appreciation of the idea of an end, an ultimate to history. Up to a certain point the philosophers to whom Paul spoke on Aeropagus were at least in civil rapport if not in philosophic agreement "but when they heard of the resurrection of the dead some mocked" (Acts 17:32). The doctrine of the immortality of the soul was by no means a new doctrine to the philosophically-minded Greek. Plato had enunciated and elaborated it in his famous dialogue the *PHAEDO* and still more fully in his work the *PHAEDRUS*. Not only did Plato hold that the soul shall have continuous existence after death, but that the soul has had existence in a pre-existent state eternally before birth. This will be all recollected as we call to mind Plato's parabolic device of the "Winged Steeds." The one steed is represented as the noble animal gazing into the brilliant light of the sun and signifies the rational aspect of the soul, the reason. The other steed, however, cast his eyes downward choosing not to gaze into the sun, but rather to fix his eyes on the transient ephemeral things of earth. This ignoble steed, or horse, portrays metaphorically the passions and emotions. Thus does Plato, by this literary device, attempt to construct a rationale for the present sinful state of man. In non-technical terms, this is Plato's attempt to explain the fall without the benefit of Genesis 3. The punishment for the deflection of the soul who did not continue to look at the bright light of the sun, the being of God, was that of being placed in a body. This has given rise to the famous Platonism of soma-sema, "the body a sepulchre." In other words,

for Plato the punishment for sin was to be placed in a mortal body. In one of his dialogues Plato says that as the body of a condemned criminal is impaled upon the stake, so the soul is impaled upon the cross of the body. Plato is irresistible in his logic. The best thing possible is for the soul to rid itself of the prison house of the body. A note of caution must be sounded here, however, lest it be thought that Plato contemplated suicide. For one to commit suicide is like a condemned man serving out his time, but who at an unguarded moment breaks jail. "For such a person, there could be no hope, as he would be deliberately resisting the punishment imposed upon him not as a barbarity but as a remedy." However, the doctrine of the soma-sema is quite foreign to Christian theology. True it has from time to time in the history of the church been imported expressing itself in extremes of fasting, flagellations, self-imposed tortures, and celibacy, but all this is an extraneous importation into Christian thought. The body of man as part of creation shared part of creation's blessing. Sin may be localized in the body. The body may on occasions be the instrument of sin, but the body is never the originating cause of sin. One may speak figuratively and say that my hand sinned in performing an act of theft, but the hand would lie limp at the side if it were not for the covetous mind dictating the act. Thus the body, far from being a prison house, is under God the divinely-appointed channel through which the purposes of God for the life which now is comes to realization. Thus to return to the bearing of all this on the doctrine on last things we note that the new element, or one of the new elements, which Paul enunciated in his address upon the hill of Mars was a Christian doctrine of the resurrection. Now the doctrine of the resurrection, important as it is in itself, does not find its end in itself, but the doctrine of the resurrection of the individual must be ever focalized upon the doctrine of our Lord's resurrection. "Now if Christ be not resurrected from the dead, we are of all men most miserable . . . but now is Christ risen from the dead and has become the firstfruits of those that slept." Thus in a real sense the first step in the final eschatology of Christianity has surprisingly been achieved for the first step from the rather long chain of events was forged on the fulcrum of God's sovereignty when He raised Jesus from the dead, the third day, the first day of the week. Thus revelation supplies that of which philosophy knows nothing. If philosophy will accept it, well and good. But even if it chooses to join its laughter with the men of Athens, the Christian doctrine of the resurrection cannot be silenced by the laughter, even of the philosopher. Thus the first distinctive contribution of the Christian revelation to that of rational speculation is the contribution of resurrection. There are those who try to by-pass this by speaking of the Spiritual resurrection. We need only point out that the word "resurrection" is meaning-

ful only as a contrast to death and burial. A spirit neither dies nor can it be buried, therefore in that sense it cannot rise again except in the sense of being reunited with the body which it deserted at death. The physical body, however, undergoes both death and burial or similar dispositions and thus does rise, shall rise again. The Bible reveals that there shall be a resurrection of both the just and the unjust "out from among the dead" (*ek ton nekron*).

The second main phase of the Christian scheme of eschatology is that of the judgment. The Christian idea of the judgment differentiates sharply in its concept from that of other ideas of judgment. Referring again to Paul's address on Mars Hill we read these words which should strike terror into the heart of every sinful and unbelieving individual.

Inasmuch as he hath appointed a day in which he will judge the world in righteousness by the man whom he hath ordained; whereof he hath given assurance unto all men, in that he hath raised him from the dead. Acts 17:31.

The Greek text, significantly enough, does not employ the regular future tense of "KRINO" or to judge, as one might expect, but rather uses the somewhat periphrastic device of the verb "MELLO" plus the normal infinitive formation. It is generally held by Greek scholars that this particular grammatical formation connotes a certain swiftness, a certain sense of that which is impending, or that which is liable or even probable to take place at any given moment. The verb auxiliary used with the principle verb "KRINO" to judge, therefore intensifies and emphasises the thought of the judgment to a far greater degree than would the simple future. I know that I *shall* die, but at the moment it does not give me much concern; but if it were told me that I were about to die, how different might be my reactions to that piece of intelligence. The thought, however, is not so much to stress the nearness of the time, but the suddenness of the manner. This hour, the hour of the playing of the instrument for our pleasure; the next, the blowing of the trumpet of judgment summoning us to give an account for our deeds. This hour, the hour for the investing of our talents—the next, the hour of reckoning for our stewardship. This hour, the hour of play and frivolity; the next, the hour of anguish and consternation. As in the Biblical account of Belshazzar and his impious feast, the handwriting on the wall brought swift and irremedial destruction, so the long, gaunt, fiery finger which shall write the verdict of our lives is ever pointed in our direction. "That same night was Belshazzar the king slain." "And their destruction slumbereth not" (II Peter 2:3b). All of this, to be sure, was also directly antithetical to Greek philosophy. The Greeks believed in the ever-reoccurring, dialectical process of history; that is to say, that there would never be an abrupt, final end to history. But the Pauline address, yea the Biblical

revelation cut sharply across man's thinking in this respect. Not only is history to end, but God will end it, and will end it in and through the Person of Jesus of Nazareth! How forcibly! How dramatically! How ominously do these words fall not only upon the ears of the Athenian philosophers, but upon the philosophers of our civilized cities today. For fearful as the thought may be of annihilation by the atom or hydrogen bomb, the thought and the prospect of the termination of civilization by the intrusion of the Crucified is even more threatening. If one doubts this, let him but turn to the closing chapters of the Bible and behold there the spectacle of utter panic which seizes hold upon the godless. And what is it that causes their great trepidation? Is it the threat of strange, wierd beings from other planets in space ships coming to overmaster the human race? No! Is it the terror of weapons yet unconceived, horrible mechanism of warfare which causes such consternation? No! Is it some dire calamity of nature such as floods, flowing lava from an erupting volcano, or terrifying earthquake, or other natural disturbance which thus calls forth such almost craven fear in the hearts of normally brave, stout-hearted men? It is no one of these things singly, nor all of them conjointly. It is but a single glimpse of a face—the once smitten, spat upon, countenance of the man of sorrows and men seek and court disaster which under natural circumstances they would do their utmost to avoid. Avalanches are preferable to a meeting with such a being if only the avalanches will bury them so deeply that they cannot be resurrected. The grim, silent, stony rocks, whose hearts can feel no compassion, or whose breast knows no pity, are now chosen rather than to meet face to face with the Judge of all the earth. Is not this Calvary in reverse? Roman soldier, where is now thy crown of thorns that thou didst once place upon the head of the lowly Nazarene? Judas Iscariot, does not the jingling of the thirty pieces of silver of betrayal money make thy fate a little easier to bear? Go and offer it now to the Judge. Perhaps an act of bribery will save thee from the most dire punishment. Men who did gamble for His clothes at the foot of the Cross, where are the garments for the hiding of the nakedness of your miserable souls? Yea, executioners, who drove the nails into the throbbing flesh and sinews of the Son of God, is there no petition for forgiveness raised for thee now? "All the world has become guilty before God."—God in Christ, the Man Christ Jesus. As Plumptre has so well expressed it in the French and which we now take the liberty to render into what we trust is reasonably exact English:

For a Jew, to say that Jesus will preside at the judgment, is the same as saying that He is the creator. Also, I do not know of a clearer proof than the immense impression produced by the Galilean than this simple fact . . . that after He had been crucified, it was a Pharisee, as Paul had been, who was able to see in Him the Judge of the living and the dead.<sup>1</sup>

Different shades of interpretation, variant schemes of the prophetic schedule, arrangements and rearrangements of the nuances of Christian eschatology have been many, and will probably continue to be so in their relative state of imperfection, until "that which is perfect is come." But of this one essential, hard, basic, tremendous fact of revelation there can be no debate or controversy, at least among those who profess to any degree to honor and esteem the objective word of God. And that one essential, hard, basic, tremendous fact of revelation, a revelation yet to be revealed is that Christ, that God in Christ, that Christ who is God will come at the end of the age personally and in judgment, "in flaming fire taking vengeance on those who know not God and obey not the Gospel." As steel moves toward a magnet, so creation tends, perhaps slowly but nevertheless assuredly, to that inevitable, inescapable day, to that inevitable, inescapable event, to that inevitable, inescapable MAN, the MAN Christ

Jesus. The man on time's horizon is the timeless man who will at his epiphania end the dialectic of time. I have stood in the center of the great, resounding hall of time. Methinks I have heard the footsteps of the so-called great of earth as they have stalked its corridor. They have somewhat deafened me at times by their heavy ominous tread. But the hall is strangely silent now. With bated breath I wait—one more footfall, one more tread, one more heavy step upon the threshold, one more ponderous knock upon the door, and then the hall of time itself shall be no more. The waiting room of eternity shall vanish and you and I shall be in His presence with greatest joy or greatest of anxiety. The currents of philosophy run deep, but they have this in common. They bear us with frightening swiftness to the judgment seat of Christ.

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<sup>1</sup>Plumtre, as quoted by R. J. Knowling in *The Expositor's Greek New Testament*, Vol. II on the Acts of the Apostles; Wm. B. Eerdmans Publishing Co., Grand Rapids, Michigan; 1951; p. 379.

# Public Health In American Samoa

*Editor's Note:* The following is a portion of a broadcast over WVUV in American Samoa by Dr. Fred S. Brenneman, Director of Public Health, Pago Pago, Tutuila. In addition to the work discussed, he is also concerned in the Department with Sanitation, Insect and Rodent Control, and Port Inspections.

Dr. Brenneman is a member of the American Scientific Affiliation.

Public Health is a major concern of any government. The Department of Public Health of American Samoa has been active since the beginning of American interest in Samoa.

There are two main interests of the Public Health Department. One of these is the care of the sick; the other one is the prevention of sickness. We believe that we should be interested in these two areas with equal emphasis for all. In order to give the best service, it must be rendered without any favors being shown to one group over another, regardless of race, color or creed.

This evening we wish to give to you a general picture of the scope and nature of the work of the Department of Public Health. In subsequent broadcasts we will give you more detailed information regarding the different departments of our work. We believe it is also of interest to you to know something more definite about the people who serve you. We hope to give you a short sketch of the personnel in our department in later broadcasts.

The main divisions of this department are the hospital services and the public health services. There is a third area of our work which is concerned with the operation and maintenance of these two divisions. This is the over-all administration.

In the hospital division the important services are (1) the professional staff, (2) the technical facilities and (3) the School of Nursing.

The professional staff consists of those people who see the patients and care for them. At present in addition to the Director of Public Health there are two doctors of medicine. Both of these doctors are very busy. It is planned that in the near future there will be two more doctors of medicine. These four carry the responsibility of all the medical work of the hospital. Under their direct supervision we have a group of medical practitioners. These men have been trained to do medical work under the supervision of the medical doctors.

Another very important group of professional people in the hospital are the nurses. At present we have three American registered nurses, each of whom has an advanced degree in Nursing Education. One of these is the Superintendent of Public Health Nursing, one

of them is Superintendent of Hospital Nursing, and the other is an instructor in the School of Nursing. We are in need of two more registered nurses and are at present making plans to secure them. The nursing staff, which gives the bedside care to the patients, consists of 53 graduate nurses and 62 student nurses. The student nurses do some practical work caring for the patients in addition to their classroom work.

There is also a dental section of the hospital under the supervision of one American doctor of dental surgery. There are at present three Samoan dental practitioners and there is one who will join our staff in the beginning of 1954.

In the technical section of our Department of Public Health we have other very important professional personnel. Without well-qualified persons and good equipment in the field of laboratory examinations, in the field of x-ray service and in the field of pharmacy, no medical service could function. Another area of technical service is in the records department. It would be impossible to carry on good measures of preventive medicine without very careful records. This is also true with regard to the care of the patients in the hospital.

The service of this department to the people of Samoa would be very inadequate without public health taken to the dispensaries and villages so that people at a distance from the hospital may receive these benefits. The dispensaries at Amouli, Leone, Ofu and Ta'u have been established and are rendering a very important service. These as well as the nurses in the various villages, are under the direct supervision of the Superintendent of Public Health Nursing.

Since October, 1953 this department has also been responsible for the maintenance of the Leprosarium and the care of the patients there. Previously this department was concerned with lepers and their care, but chiefly with diagnosis and cooperation with the work at Makogai. I wish to emphasize the following comment and it will be emphasized repeatedly. It is a matter of very great importance and also, no doubt, of very great comfort for all of us to know that leprosy is not a contagious disease. It is also good to know that it is not an infectious disease. The problem of leprosy is a problem of treating the patients who have the disease and removing the ungrounded fears for all of the rest of us.

This brief outline of the Department of Public Health would be incomplete and the department could not function without the operational detail represented in maintaining supplies. These supplies include medicine, dressings, new equipment, equipment repair and last, but not least, food and meal service.

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## ANTHROPOLOGY

by

James O. Buswell, III, M.A.

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### Malan publishes statement on *apartheid* for U. S. Reformed Fellowship

In December, 1953, a group of ministers in the Christian Reformed denomination in Grand Rapids, through the editor of the Reformed Fellowship magazine *Torch and Trumpet*, sent a letter to Dr. Daniel F. Malan, Prime Minister of the Union of South Africa, himself an ordained minister in the Dutch Reformed Church, inviting him to write a statement on the *apartheid* policy. Since the United States and Canada press have been so against *apartheid* it was felt that by this means both sides could be fairly evaluated and better understood by those of Reformed persuasion.

It is to the credit of the Editorial Committee of the Reformed Fellowship that they have thus achieved what, it seems, no other publication in this country has been willing or able to do, namely, to publish Dr. Malan's own views on *apartheid*.

Malan's response, a letter to the editor, John H. Piersma, is published in the April-May, 1954 issue of *Torch and Trumpet*.<sup>1</sup>

Hardly any explanation need be made regarding the description and present significance of the *apartheid* policy since our newspapers have been continuously reporting the social and legislative details of the program ever since before Dr. Malan became Prime Minister of the Union in 1948. Nevertheless, in order to better appreciate some of the complexities of the problem, it is necessary to examine, however briefly, some of the details relevant to an informed, Christian appraisal.

The Dutch settlers arrived in South Africa in 1652. When the British finally took over the Cape in 1814, they found themselves the newcomers amidst a population of about 30,000 predominantly Dutch *natives* with a tradition of over 160 years already behind them. The second generation citizens had no more idea of Holland as their homeland than the descendants of the Pilgrims had of England by the time of the Revolutionary war!

This is one of the vital aspects of the picture in South Africa today: the nationalistic and linguistic division between the Europeans themselves.

The rest of the picture of racial complexity in the Union is better known. Of its more than twelve and one-half million population, the racial composition, according to a recently published survey, *The Peoples of South Africa*,<sup>2</sup> is as follows:

Cape Malays .....	62,602
Asiatics .....	358,738
Coloured (mixed) .....	1,016,019

European .....2,588,933

African .....8,410,935

The principle underlying preoccupation of the white rulers is the self preservation of their own society and way of life. This in itself, of course, is an understandable position. However, the principles upon which the policies to achieve such self preservation are based are the chief points at issue in every *apartheid* debate, not only in Pretoria, but in the capitols and Main Streets of the world. The internal affairs of one nation have become the business of all people who see the dangerous implications for a Christian view of racial relations anywhere.

Let us look at a few of Dr. Malan's statements upon which the thinking of the administrators of *apartheid* are based. He speaks of the "fundamental difference between the two groups, White and Black." The criterion of skin color is the crux of the whole matter. What modern anthropological science regards as *racial* differences can not be considered "fundamental" because "race" is a strictly biological term in this sense, and all races of mankind are biologically "fundamentally" alike.

What *apartheid* philosophy considers "racial" differences, anthropology has been teaching for the last fifty years to be socio-cultural differences with no possible correlation with skin color or any other morphological criteria. Nevertheless, Dr. Malan's position is as follows: "The difference in color is merely the physical manifestation of the contrast between two irreconcilable ways of life, between barbarism and civilization, between heathenism and Christianity, and finally between overwhelming numerical odds on the one hand, and insignificant numbers on the other."

If, then, skin color is to be the sole criterion for all economic, social, political, and physical considerations, where does this leave room for the African who is not a barbarian but civilized; who is not heathen but a Christian? Let the European in power make any standards or qualifications he desires as to education, intelligence, ability, language, manners, bodily hygiene,— "civilization"—or religious affiliation; let him apply them as strictly, or make them as relentlessly exacting as he pleases, and the world will take but passing notice of a unique sociological stringency. But let him designate skin color as the "physical manifestation" of such standards and, it would seem, he has at once lost all sociological, not to mention all spiritual perspective in the matter.

One of the things that seems to us to be the most unjust in the present Government of South Africa is the repeated attempt to gain idealistic ends by means of legislative manipulation. The records both of the educational policies and of the Ministry of Native Affairs in the past three years frequently conflicts with certain idealistic claims of the *apartheid* program. For example, Dr. Malan lists as the "spiritual basis of



apartheid" seven principles enunciated by the Missionary Council of the Dutch Reformed Church in South Africa. Among them it is stated that "... it does not begrudge the non-White the attainments of a social status commensurate with his highest aspirations." However, the program of *apartheid* seems to be attempting very definitely to legislate just what those "highest aspirations" shall be. The theoretically defensible (if it had been put into operation two hundred and fifty years ago) Group Areas Act, designed to separate the business as well as the residence communities of the non-whites from the whites, is economically and socially disruptive to say the least. In the cities where the Indian business establishments in many cases outnumber those of the whites, its intended implementation and any calm commercial continuity or survival are mutually exclusive. It would simply disintegrate the economic balance of scores of communities. And it is always the non-whites who are to be moved, and must seek their own social and economic reintegration in designated localities.

Other legislation aimed at defining those "highest aspirations" involves the complicated and endless attempt to manipulate the racial political representation in order to assure a winning margin in crucial voting.

Still another example is that of the recent legal measures taken by Dr. Malan to restrict Negroes to certain occupations and levels of employment. It was reported by the Minister of Native Affairs that this legislation would "determine the categories of employment and occupations that would be permitted for various races." He also "insisted that Negroes now in industrial and urban employment must be regarded as temporary, even if long time residents."<sup>3</sup>

Further examples could be cited: Jim Crowism with, now by law, expressly, no intention of providing equal public facilities—from park benches to post offices; a recent amendment to the Native Land and Trust Act, empowering the Ministry to make Negroes homeless wherever they are found living on white-owned farms in excess of the number permitted the farmer, without providing any alternative accommodation or means of livelihood<sup>4</sup>; and the actual limitation of certain academic programs for Negroes for fear they might develop aspirations for things higher than they could ever hope to reach.

Even through the study of the history of South Africa, of its peculiar and complex problems, one can not hope to fully understand the *apartheid* point of view unless one has lived there, and then not unless one is really conversant with the Afrikaner philosophy. By this standard, I confess, I am unqualified to express an opposing opinion. The only excuse for such expressions is that the pattern of policy and publicity, not of the press alone, but of the publications of the Union and its representative offices in America, is so clear in each succeeding statement, that it is not at all diffi-

cult to isolate and assess the underlying ideologies against a background of principles, sociological as well as theological, which are applicable over a much larger portion of the globe than the Union of South Africa alone. Dr. Malan's letter to the *Torch and Trumpet*, unique, for an American publication, in its authorship, is, disappointingly, anything but unique in what it says, conforming to the basic pattern not only in ideology, but in organization and content as well.

The subject deserves a more lengthy analysis, rather than one of such brevity as this is, in order to avoid distortion. However, it is something that needs to be reported to Christian thinkers so that considered opinions might be formulated, and the frequent error of associating critiques of the Malan regime with Communism might be also avoided.<sup>5</sup>

What of the position of the missionary in South Africa? What is the church's stand on *apartheid*? What position should our own denominations and church councils take? Should they put themselves on record as taking any position at all? What is our responsibility toward the churches in South Africa who have taken definite sides in the matter? This type of question represents another phase of the problem too big for the present discussion, but which has far-reaching implications for all Christians about which we should think and pray.

1. It is noted that "The position here taken and the statements made are wholly those of our distinguished guest, and should in no wise be construed as reflecting the editorial opinions of this magazine."
2. Issued by the State Information Office, Pretoria.
3. New York Times, February 19, 1954
4. New York Times, February 23, 1954
5. Conservative Christians criticize religious liberals for unnecessarily stirring up racial problems. A policy like *apartheid* however, advancing in the name of religious conservatism gives liberals as well as Communists their opportunity.

Shelton College  
Ringwood, New Jersey  
August 1, 1954

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## ARCHAEOLOGY

by

Allan A. MacRae, Ph. D.

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### Could Moses Write?

When critics first began to deny the Mosaic authorship of the five books with which the Bible begins, the assertion was made that it would have been impossible for Moses to have written the Pentateuch, since writing had not yet been invented.

Archaeology has now brought to light a complete refutation of this particular argument. Not only was writing widely used in the days of Moses, but, in fact,

there are several possibilities as to the type of script which he might have used.

The first clear evidence of this became available soon after men learned to read the hieroglyphic writing of ancient Egypt. Although these pictures, inscribed on great stone monuments, were visible in many parts of Egypt, their meaning had remained an insoluble mystery for centuries. Then, in 1798 the so-called Rosetta stone, bearing an inscription in hieroglyphics, with a parallel in another ancient Egyptian script known as demotic, and a second parallel in easily understood Greek, was discovered by Napoleon's engineers. In 1802 it was captured by British soldiers and taken to the British Museum in London. As if to compensate for this, the interpretation of its hieroglyphic signs remained unknown until it was worked out, after twenty years, by a brilliant young Frenchman named Jeon Francois Champollion.

To our idea, the hieroglyphic writing is a very cumbersome thing. Pictures in it may represent the class to which a word belongs, or give an idea of the meaning of the word, or indicate a group of consonants, or even a single consonant. It is not strange that many years went by after the discovery of the Rosetta stone before anyone was able to decipher it, and that it took much further study before the knowledge of hieroglyphics could be said to be well established. However, once the principal features of the language had been well worked out, it was possible to read historical inscriptions, and even difficult poetical writings, with a very high degree of accuracy. We know with certainty that this writing was widely used in Egypt at least a thousand years before the time of Moses. The Bible describes Moses as being "learned in all the wisdom of the Egyptians" (Acts 7:22). It would be strange indeed if he were not able to write the Pentateuch in the hieroglyphic signs, if he desired to do so.

This however, is not the end of the story. In 1887 an Egyptian peasant woman, digging in the rubbish heaps at a place called Tell El Amarna, found several hundred small pieces of clay, many of them about the size of a cake of soap, with queer little wedge-shaped marks on them. A friend carried them several hundred miles north to Cairo, where he attempted to sell them. Egyptologists looked at them and declared that this was not hieroglyphic writing, and that they were of no value. Eventually an antique dealer bought them for a very small sum. Later, a student of Mesopotamian antiquities, happening to come through Egypt, and desiring to buy an Egyptian souvenir, happened to come across these strange tablets. Picking them up, he found that he could read them with little difficulty and that actually these tablets, though found in the southern part of Egypt, contained writing in the script and language of distant Mesopotamia. It would seem that the cuneiform (or wedged-shaped) type of characters, which Babylonians used on clay tablets, and even the Baby-

lonian language itself, was the *lingua franca* of the time. These tablets consisted of letters to and from the Pharaoh of Egypt and the kings of cities in Canaan and of countries further away from Egypt. These tablets, which are known as the El Amarna tablets, present a priceless source of knowledge of the life of Palestine at a very early time.

If Moses was learned in all the wisdom of the Egyptians, it would not have been impossible for him to have written the Pentateuch in cuneiform. This theory has an advantage over the suggestion that he wrote it in hieroglyphics, since the hieroglyphics are closely linked to the Egyptian language and would be difficult to use for another language, while the cuneiform writing is more adaptable to various languages, and, in fact, twenty different languages have been already found to have been written in the cuneiform script. Whether the Pentateuch might have originally been written in Egyptian, in Babylonian, or in Hebrew itself, cuneiform would have been a possibility. Some scholars have even held the view that there are certain characteristics of the Pentateuch which fit particularly well with the hypothesis that it was originally written in cuneiform, though others think this to be unlikely.

However, even this is not the end. Early in the present century certain inscriptions were found in the Sinaitic Peninsula between Egypt and Palestine, in the very area through which the Israelites must have gone on their way from Egypt to Palestine, but probably from a time considerably earlier. These inscriptions were in a new type of writing, never before known. They bear certain similarity to Egyptian hieroglyphics, but there are far less characters. Study of this writing went forward very slowly, but recently it has been established that it is the precursor of every alphabetic system of writing known to the world. It was carried into Palestine, and from it developed the old Phoenician writing, which is the earliest form of Hebrew writing, and was used by the Israelites prior to the exile. From this was developed the later type of Hebrew characters. It was carried from Palestine eastward toward Syria and Arabia and into India. It was carried overseas to Greece, and was the foundation of our Greek alphabet. From there it was carried north to Russia, and was the foundation of the Russian alphabet. It also went overland from Greece to the Etruscans, and from them to the Latins, and became the foundation of our Latin alphabet, which is now used for most of our western languages. Every system of alphabetic writing of which we have any knowledge, was either a direct development of this one, or, in a few cases, an artificial system based upon it. Since it began in the Sinaitic Peninsula, before the time of Moses, there is no reason to question the possibility that Moses could have used this system in writing the Pentateuch.

In recent years, new materials in this earliest system of alphabetic writing have been found, not only in

Sinai, but also in Palestine itself. It is most interesting to note that in November 1949 a tablet was discovered, containing writing of a type which was modelled after this Sinaitic alphabet, which arranged the letters in such a way as to prove that even as early as the fourteenth century B.C. their order was similar to that used in our Hebrew, Greek, and Latin alphabets today.

Thus it is evident that there were several methods of writing available in which Moses could have written the Pentateuch, one of them actually being the type of writing from which our present Hebrew characters developed. If this knowledge had been available at the time when the theories of source criticism of the Book of Genesis began to spread, one wonders whether the destructive theories would ever have been able to develop to anything like the point to which they have been carried.

#### Regarding Noah's Ark

In the Philadelphia Inquirer of July 26, there was a report that an American explorer, named John Libi, was quoted in Istanbul as saying that he had found traces of a vessel that might prove to be Noah's Ark, in connection with an ascent of Mount Ararat in Eastern Turkey. According to the account, Mr. Libi said that he was unable to approach the remains closer than 100 yards because of great blocks of ice surrounding the ship.

Similar records have appeared in France in various newspapers and magazines this spring, stating that a French explorer, Mr. Navarra of Bordeaux, had found the ark embedded in ice in an extinct crater on Mt. Ararat.

All Bible-believing Christians believe in the historicity of accuracy of the Biblical story of the flood. They have no doubt that Noah and his family escaped destruction in this world-wide catastrophe, only because they were in the ark.

It is, of course, not at all impossible that the ark could have become covered with ice and been preserved all these thousands of years. At the same time, there is no Biblical statement that such an event occurred. It would be equally possible that the ark completely disintegrated prior to the time when the area where it landed would have been covered with ice.

Mr. Navarra has expressed his intention of returning to Mt. Ararat, taking explosives with him, so as to be able to break into the ice far enough to get a piece of the wood. It is to be hoped that he will gather sufficient evidence on this second visit to prove beyond question whether it is actually a vessel or not. Final judgment must wait until this wood can be submitted to carbon-14 tests, so that its age may be ascertained with certainty.

Until more is known about this, it is well to maintain a skeptical attitude. Abundant evidence is available from archaeology, bearing on the dependability and

accuracy of the Bible. Only harm, and not good, is done by broadcasting any alleged evidence which does not rest on solid fact. To use as collaboration of Scripture any arguments which are at all uncertain, may easily be a boomerang which will in the end have the opposite effect of that desired. Christians, however, should watch with interest for further news of these developments in the Ararat region.

Philadelphia, Pennsylvania

July 31, 1954

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## BIOLOGY

by

Irving W. Knobloch, Ph.D.

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### The Role of Chromosome Rearrangements In Evolution

In the last issue we assessed the part played by gene mutations in evolution. It was pointed out that the term "mutation" is used quite broadly in the literature and that many so-called "mutations" are *not* point or gene mutations but are due to other phenomena. The difficulty of pinning a point mutation down was also indicated. We might add here the definition of point mutations as given by Stadler "— (point mutations) are those alterations in the germ plasm for which a mechanical chromosome basis cannot be detected."

In this article we wish to cite some evidences of changes in phenotypes originating by chromosome rearrangements. Goldschmidt, by the way, regards this method as the fundamental agency of phenotypic differentiation.

There are four main types of chromosome rearrangements recognized. A *deletion* or *deficiency* involves the loss of a portion of a chromosome and, at synapsis, one of the homologous chromosomes has a loop in it where synapsis could not occur because of the deficiency. A *duplication* comes about when a certain chromosomal segment with its genes is repeated. An *inversion* would refer to a case where a segment is found in an inverted order to that normally present. A *translocation*, as the name implies, is the transfer of a part of a chromosome to a non-homologous chromosome. Such cases are usually reciprocal. *None* of the above types are point mutations. What evidence is there that rearrangements are important in speciation?

Dubin found that the "hairy gene" in *Drosophila* was recessive in a normal chromosome but dominant in a translocated chromosome. This sort of thing is called a "position effect" and acts deceptively like a point mutation. The effect is due, however, to a translocation. Makino found that the fish *Misgurnus anguillicaudatus* has 26 pairs of chromosomes and

*Barbatula oreas* has 24 pairs. All the chromosomes in both fish are rod-shaped except two pairs in *B. oreas* which are V-shaped. He took this to mean that the phenotypic differences between the fish were due to translocations in what were originally distinct chromosomes.

Sturtevant and Morgan showed that in cross-over experiments between other genes near the "bar eye" gene, the so-called mutation from "bar eye" to "double bar eye" and to "normal eye" was due to unequal crossing-over, i.e. a duplication. Individuals with one bar gene were "normal", those with two bar genes were "bar" and those with three such segments in succession were "double bar". In the fly *Sciara*, two of the species, *ocellaris* and *reynoldsi* are said to differ from each other because of both deficiencies and duplications. McClintock, in work on maize, reported that many types of variegated brown midrib plants were produced because of a duplication of factors.

Some workers in *Drosophila* lean to the opinion that the mutant 'notch wing' is due to a deficiency in the X chromosome and that "curly" and "dichaete" wings are due to inversions of the second and third chromosomes respectively. Dr. F. A. Saez noted that "notched wing" is found in chromosome I and is produced by the loss of a segment of 1.5 units: it is lethal in the males and, when homozygous, also in the females. Thus the flies which continue living with this deficiency are heterozygous." He goes on to say that "the species of *Drosophila* differ among themselves according to the different arrangement of their genes which have resulted from successive rearrangements of the chromosomes during the course of their phylogeny." Dr. G. L. Stebbins in his great work cited below says "It is possible that a considerable proportion of the genetic changes that have been regarded as point mutations are actually minute deficiencies."

In view of the above evidence about chromosome rearrangements it seems fair to state that they probably play a very important role in the formation of what we call species. Point mutations, assuming that they exist, are another method of speciation. Rearrangements are being detected more frequently now than formerly and, in my opinion, their importance will increase. It should be plain that it is *not* necessary to have new genes to have new species. In a subsequent article, we plan to discuss the role of polyploidy in evolution.

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SEPTEMBER, 1954

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## GEOLOGY

by

Karl Turekian, M.A.

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That branch of science dealing with no less a subject than the origin of the universe is called *cosmogony*. The metaphysical analogue is termed *cosmology* and deals with the philosophical significance of the universe.

The science of cosmogony, in its grandest sense, is comparatively recent since it is only now that we have enough physical and astronomical data to allow detailed speculations regarding the origin and development of the universe. This in itself has provided the Christian mind a refreshing interlude from the haughty talk of the last generation regarding the eternity of the material universe. Such terms as "co-eval", "co-terminous" or "co-existent" applied to God and matter are no longer popular among those acquainted with the largest cosmogonical thinking.

With the revision of Hubble's constant in the astronomic realm, the age of the universe and the earth (by radioactive methods) are in agreement indicating that the universe as we know it had its origin in the vicinity of 5 billion years ago. The state of affairs prior to this time cannot be inferred from any physical laws. Any concept of a cyclical self-rejuvenating universe or a steady state (i.e. the continuous creation and annihilation of matter) universe is at best abstract mathematical speculation with no basis for validity except the implicit denial of a beginning. More and more scientists are pushed to a unique origin of our universe in time and space.

Two of the latest offerings in this field are *The Creation of The Universe* (Viking, 1952) by George Gamow and *The History of Nature* (University of Chicago, 1949) by C. F. von Weizsacher.

The author of the latter book is a noted astrophysicist who, among other things, has presented one of the most satisfactory explanations for the origin of the solar system. His ideas dealing with the observed structure of the universe rest heavily on the physics of turbulent motion of gases and clouds. Dr. Weizsacher has found that the second law of thermodynamics compels him to accept a unique origin of our universe. When one reads his philosophical comments in the chapter 'Man: Inner History' one cannot help but feel that this renowned physicist may not be "far from the kingdom of God".

Professor Gamow has probably become well known to the general public through his popular treatises on various aspects of the natural and physical sciences. He has distinguished himself in the field of nuclear physics and has combined in this small book the latest of the

knowledge regarding nuclear processes with astronomic and geochemical information. The marriage has resulted in a highly interesting discussion of the origin of the elements and the resulting cosmic architecture. Dr. Gamow also finds a date for the creation of our universe necessary but sidesteps, with a bit of witty chatter, the issue of what existed before that date and why it all started.

We will deal with the problems of cosmogony in more detail in subsequent articles. It is hoped that as many readers as possible will avail themselves of these well written current publications on modern cosmogonical thinking.

Columbia University  
New York, New York  
August 2, 1954

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## PHILOSOPHY

by

Robert D. Knudsen, Th.M.

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From the first the church of Jesus Christ has been confronted with the problem of rapport with contemporary culture. As soon as it emerged from its period of early growth and had time to look around, this problem occupied its thought. Unfortunately, the solution taken was largely one of accommodation, and we find an invasion of Greek ideas into the church. Even a gigantic figure as Augustine was not free from this influence, in his case Neo-Platonism. With the revival of Aristotelianism and the development of Thomism there was the conscious synthesis of Greek and Christian motives which was the mark of the high Middle Ages.

That the church should busy itself about the problem of culture is not surprising. Not of the world, it is yet in the world. Not only do its members find themselves taken up with worldly preoccupations, but they also meet the problems of witness, of understanding the spiritual movements in the non-Christian world in such a way as to show the relevance of the Christian answer. This has become of supreme interest since the Renaissance and Enlightenment because of the powerful secularization of Western culture. It is a question that has magnified in urgency since the decline of the West has turned into a fall and the humanistic faith both theoretically and in practice has taken severe shock.

Remembering the perennial importance of witnessing, a deeper question, determinative of the rest, must not be ignored. That concerns the inner connection of the gospel with culture. This question is not going unnoticed. The neo-orthodox claim that Modernism capitulated to the Enlightenment secularization of our

culture. In their way they again seek to disentangle Christian faith from this involvement. With Barth this has meant setting an impassable gulf between the gospel and culture, so that it is spoken forth without any attempt to find a point of contact (the "kerygmatic" position). With Brunner, Niebuhr, et. al., there is an attempt organically to relate the Christian faith to culture (the "apologetic" position) without surrendering to the god of secularization. Have they succeeded? Orthodox protestants are becoming more aware that despite their attempts to let Christianity come to its own, the neo-orthodox have offered us a denatured Christianity, perhaps even more so than Modernism.

Orthodoxy or Fundamentalism does not take a homogeneous attitude toward this problem. Fundamentalism wears a coat of many colors. As I see it, the prevailing attitude is that of a dualism between the gospel and the "world." All culture is merely "secular," which means here that it is under the domination of the prince of darkness. A rift in this kind of otherworldliness is appearing. In spite of its obvious insufficiencies, which the author himself would be glad to admit, Carl Henry's *The Uneasy Conscience of Fundamentalism* is a hopeful portent. But so far, the cloud is no longer than a man's hand. I believe that one reason for this slow development is that Fundamentalism has not by and large penetrated to the basic question. It has not asked about the organic relation of faith and culture. When it deals with the Christian and culture, it most often fixates at the practical problem of how to reach the world with the gospel. This apologetic and missionary zeal is commendable, but the realization is lacking that this practical problem depends on the deeper question we have indicated.

To the present that deeper problem has been approached from the conservative side almost exclusively by Reformed Christendom. The problem has not been solved here to everyone's satisfaction, as the current dispute on common grace would indicate, but it is being clearly and forcefully posed and discussed.

The elan for this discussion stems from the revival of Reformed thinking under the leadership of the gigantic figure, Abraham Kuyper. Of him B. B. Warfield could say, "For many years now Dr. Kuyper has exercised a very remarkable influence in his own country. As leader and organizer of the Anti-revolutionary party, and chief editor of its organ...as founder, defender, and developer of the Free University of Amsterdam . . . as a religious leader whose instructions in his weekly journal, *De Heraut*, are the food of hundreds of hungry souls . . . as a force in Church and State in whose arms those who share his fundamental principles trust with a well-founded hope of victory, Dr. Kuyper is probably today the most considerable figure in both political and ecclesiastical Holland" (*Encyclopedia of Sacred Theology*. New York: Charles Scribner's Sons, 1898. pp. xi-xii.).



Kuyper avoided the dualistic position, with its world-withdrawal, and advocated a healthy world-affirming faith. This was not an affirmation of the "world, the flesh, and the devil," to be sure, but an affirmation nourished on the faith that in spite of the present distortions and corruptions of sin, God had created the world good, and that the meaning of redemption is not a flight from the world but a repristination (palinogenesis) of it at its center, and from its center to its farthest circumference. Kuyper did not withdraw from culture, but sought the inner reformation of culture in the light of the gospel for the King of the Church.

The latest product of ecumenical Reformed thought is the proceedings of the International Reformed Congress, held in July, 1953, at the Free Faculty of Protestant Theology, Montpelier, France. This is the same congress that has met at various intervals and in different lands since 1932. The latest gathering discussed the secularization of modern life, and has published its reports in *La revue reformee*, V (1954), nos. 1 and 2.

The intense interest in the question of Christianity and culture is seen by the topics discussed: H. J. Stob, "The Liberty of Man"; Gerhard Wienands, "La notion du travail"; D. V. Ormel, "La secularisation de la conception de la propriete"; Andre Schlemmer, "La secularisation de la cure d'ames"; H. Dooyeweerd, "La secularisation de la science"; Rudolph Grob, "La secularisation de la charite"; W. Stanford Reid, "The Secularization of the Family."

The volume is stimulating reading. There is an up-to-date treatment of the relevant problems. It is not above the lay reader, but is yet stimulating for the technically trained. The text is complete in French, either in original or in translation. To each lecture delivered in French is appended an English summary.

3650 Pontiac Street

Denver, Colorado

August 3, 1954.

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## PSYCHOLOGY

by

Philip Marquart, M.D.

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### Non-directive Counseling Evaluated

The pitfalls of non-directive (or client-centered) therapy is appraised by Orville S. Walters, M.D. in *United Evangelical Action* of May 1, 1954. It is aptly called "this laissez faire method", in which the counselor takes a "hands-off-but-keep-them-talking" role. It is also called a "nihilistic method" and is considered to be doubtful for use in pastoral counseling. "For a humanistically-minded therapist or counselor to prolong the wallowing and floundering of a confused soul in the

morass of his own frustrations and conflicts—when he needs the regenerating grace of God—is like unto a physician stubbornly withholding a proven remedy because of his own prejudice or ignorance, while the patient suffers or dies."

The need for heartfelt religion and evangelistic methods is stressed by the writer, something more than mere intellectual assent. Rather the Gospel message should be given the perplexed person so that there is a "conscious fusion of the hearer's will with the Divine will". The doctor indicates that any Christian is a "priest", according to Scripture, and he should be ready and willing, directly to show the Way to Christ, even though the liberal pastor may insist on using non-directive methods. The Christian physician also should not neglect these opportunities.

The writer attacks the underlying philosophy of this "masterful inactivity", called non-directive counseling, when he says that "the patient needs more than his own resources to overcome his difficulty." It is well-known that this form of counseling is founded upon a belief in some kind of inner ability or inherent goodness of human nature. They say that the counselor should merely re-echo his sentiments and not add anything to the interview of his own values. The counselor must disregard all social and spiritual values and he should never try to change any of the client's values. Such a procedure would seem to be of doubtful value, particularly if the client has a spiritual need, in which the Christian counselor could help. We must therefore reject the underlying philosophy behind this method, but there may be some question whether the method itself may be used by Christians in special occasions in which the directive approach is plainly inappropriate. Perhaps the seeming success of this "hands-off" method may be due to the fact that perplexed persons may have had to face the confusion of two many advisers, who have set themselves up as authorities. This is frequently true in adolescents whose parents have already provoked them to wrath.

The writer remembers the unsaved son of missionaries who were, at that time, in China. This son was the youngest of six children all of whom were getting their education in this country. That meant that this bewildered youth had five advisers who spent most of their time nagging their younger brother. The boy turned from them in disgust and became disgracefully wild. Thereupon, all the well-meaning siblings stepped up their campaign of managing him. I showed the brothers and sisters how they could apply a non-directive method, for the time being, and stop their nagging tactics. When the youth found that he no longer had a group of antagonists, but merely a family who were sincerely interested in his welfare, he finally asked for their help in finding the precious Saviour they claimed for themselves.

When the counselee is a Bible-believing and born-

again Christian, then we should be especially cautious about being too directive toward them. Christ is a better Counselor than we could ever be and we should be careful not to give orders to another Man's servant.\* A student came to me in the midst of a college revival. He sincerely questioned whether he should go forward and make public confession of his errors, as the rest of the students were doing. Since his fellowship with the Lord was not shattered, I felt that I had no right to constitute myself as an all-wise authority. Thus I promptly began to re-echo back to him his inner feelings, as a sounding board, letting him do his own thinking in the matter. When he suggested that we might pray about the matter, we promptly engaged in prayer. Some time thereafter, he obtained his answer, to confess publicly those things that were public matters, and to settle the rest with His Lord alone.

Thus we see that the non-directive method has its usefulness as partial method, when the client has too many weak, human advisers, and when a child of God, in a state of fellowship with his Wonderful Counselor, seeks for counsel which he could better find in Christ. However, we must ever be alert to turn to directive tactics when it is appropriate to bring every client into a closer walk with Him.

\* Romans 14:4.

Wheaton, Illinois  
July 30, 1954

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## SOCIOLOGY

by

Frank A. Houser, M.A.

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Observer after observer of the contemporary American scene has remarked on the loneliness of modern man and his consequent "quest for community". Phrases like "wish for recognition," "desire to belong," "other orientation," and "status drives" are commonly used to describe his search. He lives in a society marked by constant flux in values, in physical and social location, and in institutional forms. Where can a man turn when families are transitory in so many ways, when neighborhoods and friends break up with increasing frequency, when communities seem moved by some inexorable law to become so large that he becomes a digit, when even his religious and moral beliefs are elbowed over the precipice into the morass of relativism? Having been gradually edged away from stable social relations which ministered to his fundamental need of fellowship modern man now cries in a strange, crowded wilderness. In Eric Fromm's words, he longs to "escape from freedom." A frantic few turn to bizarre behavior before the public at large. Some sell out to a

tangible dictatorship where "agonizing reappraisals" are made for them. Most modern Americans caught in the vortex of the urban-industrial milieu grope around in an attempt to preserve some of the uniqueness they possess as persons, and simultaneously "join," "conform," and "socialize" in their quest for community. On the other hand there is the danger of stark individuality sensed so keenly. On the other hand there is a real tyranny of "mass society"—the realm of "group-think" where society is king and every man an amorphous blob.

It is not surprising that much social research is being turned toward aiding men learn to live in groups—to help them develop as persons while simultaneously the group becomes a harmonious whole. This is, putting it mildly, a large order. It is something religious groups are supposed to do. If social science has any success in this direction it will be of considerable service to groups everywhere.

As a matter of fact a surprising amount of very helpful insight has already issued forth from social scientists. The term "group dynamics" is being used to connote studies in this field. A bibliography of works in this area has been compiled by W. Holcomb and is available in the January-February 1954 issue of *Religious Education*. For the reader who wants a quick summary of the type of contributions from the group dynamics people there is a very readable account in *Theology Today*, January 1954. See Theodore Wedel's article entitled "The Group Dynamics Movement and the Church."

Techniques used in group dynamics studies point toward stimulating participation and personal involvement in group life. The assumption is that we become persons *in* community. Every teacher who is permissive in some degree in the classroom can testify how real learning takes place as the student becomes involved in a discussion. He is no longer just a student—he is a *person* actively enmeshed in learning. Thus it is that such techniques as discussion, leadership skills, "buzz sessions," circular seating, and so on enter the group dynamics arsenal. I have found buzz sessions particularly helpful in enlisting the student's interest as well as making the subject relevant to him. It works this way. A large class or group is divided either before the lecture or at its close into small groups of not more than five or six. A question is proposed by the lecturer or chairman, and ten minutes is allotted for discussion. Each "huddle" group digs into the question. It is a real joy to see students who would never venture a word in a class discussion get so involved in their small face-to-face group that they often develop leadership in the group—and become lively learners in the process. After the buzz session each small group reports to the chairman. Genuinely aroused interest is an almost inevitable result.

Not only interest but understanding often results. Mention should be made of Lloyd McCorkle's real suc-

cess in group therapy with prison inmates. Work is also proceeding with psychiatric cases.

Fascinating stories can be told of how problem situations were solved by use of these techniques. This is to say that not only does the individual become a person in the decision process of the group, but the group comes to remarkable harmony to boot. During the last war attempts were made through public lectures to acquaint women with the nutritional as well as patriotic value involved in using certain meat substitutes at the family table. Progress was very slow until lectures were dropped in favor of discussion groups guided by carefully trained leaders. Success was astounding. But after all, those women had made their own decision; no one had dictated to them.

The work of group dynamics is clearly of pertinence to the church of Christ. If the children of light are brought into closer fellowship with one another then both their own needs as well as the cause of Christ will have been served. Of course, there are qualifications to be made on the group dynamics movement. Wedel summarizes it nicely for us. "Are there dangers in authoritarian surrender, Yes, of course. Participation soon runs into the necessity of limits and boundaries to freedom. Social chaos is a possibility. All human life is under authority—the authority of natural and revealed law, as also of the wisdom of science and of tradition. Authoritarianism needs to be distinguished from it. In the Church, obviously, no democracy, even of saints, can replace the authority of God, or of the Ten Commandments, or of the Gospel. But there are, even in a community of Christians, large areas in which we are left free. Surely a Woman's Guild in a parish might be given the privilege of participation in the life of God's people beyond deciding whether ham or chicken is to be on the menu of the next parish supper."<sup>11</sup>

1. op. cit. p. 520.

Wheaton College  
Wheaton, Illinois  
August 4, 1954

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## OF INTEREST

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"Science and Religion in the Middle Ages" by Prof. R. Hooykaas. *The Christian Graduate*. June 1954, pp. 83-85.

This article is a summary of lectures given at the Annual Conference of the Research Scientists' Christian Fellowship in 1953.

"Leprosy and its Challenge to Christianity" by Robert Cochrane. *The Christian Graduate*, June 1954, p. 95-100.

An address composed of such aspects as the Biblical

approach to leprosy, the approach of our Lord, toward it, the present day challenge, advances in treatment and in the relief of deformity.

"Christian Healing Phenomena" *World Science Review*, Jan. 1954, pp. 33-35.

A series of cases is presented which are said to be examples of divine healing.

"Psychical Research" Denys Parsons, M. Sc. *World Science Review* Dec. 1953, pp. 7-1; Jan. 1954, pp. 19-23.

The Secretary of the Society for *Psychical Research* gives a brief account of the history and methods of extrasensory perception.

"Faith Healing" *World Science Review*, Dec. 1953 pp. 1-5.

This magazine (now *Intelligence Digest Supplement*) started an investigation of whether the type of supernatural healing that occurred in early New Testament times is being repeated in recent years.

Succeeding issues are carrying reports of such cases.

The *Intelligence Digest* is carrying a series of articles based on the addresses of Dr. William Graham. In the June 1954 issue is presented "Problems of the Home" and in July "A Way Out of Confusion."

In the former, Dr. Graham presents some down-to-earth suggestions for each member of the family and his responsibility in the institution of the home.

"Is Evolution True?" Lieut.-Col. L. M. Davies, D. Sc., Ph.D. *Intelligence Digest Supp.* June 1954, pp. 14-16.

This short, popular account was originally written for a BBC broadcast but permission to so present it was subsequently denied. Some of the more general objections to evolutionary doctrine are presented, based primarily on the fossil record.

"The Carbon Clock" J. Laurence Kulp. *Intelligence Digest Supp.* June 1954, 1-7.

This is an excellent semi-popular account of the carbon-14 method of dating by one of the pioneers in that field. Included is a brief history of the method, some tablets of results and limitations, as well as possibilities.

"The Piltdown Forgery" Douglas Dewar, F.Z.S. *World Science Review* Jan. 1954, pp. 1-6.

Mr. Dewar discusses the history of the Piltdown finds in some detail. He takes exception to the claimed reliability of the fluorine test used to date these fossils, while agreeing that the jaw bone and skull are from different species.

## New Members

**Paul E. Adolph**, M. D., 1121 N. Scott St., Wheaton, Ill. Dr. Adolph spent twenty years as a medical missionary in China, is now director of the Chicago Medical Missionary Office. He received his M. D. from the School of Medicine, University of Pennsylvania.

**Ernestine H. Berg**, M. D., received her degree from the University of Louisville School of Medicine, is now serving as Intern at Jefferson-Hillman Hospital, Birmingham, Alabama.

**Edwin W. Brown, Jr.**, 41 Oak Court, Snyder 21, N. Y., is a Research Fellow in Medicine at the University of Buffalo. He received his M. D. from Harvard Medical School.

**Merlin L. Clater**, a 1954 graduate of The King's College, King's College, Del. His home address is 329 Liberty St., Bethlehem, Pa.

**George T. Crout**, M. D., Flanagan, Illinois. Dr. Crout took his pre-medical work at Illinois Wesleyan U., M. D. from Western Reserve U. School of Medicine.

**Gerald T. Den Hartog** is a Research Agronomist with the U. S. Department of Agriculture, Beltsville, Maryland. Holds the B. S. degree from Iowa State College, Ph.D. from University of Minnesota. Resides at 5014 Apache St., College Park, Maryland.

**Vernon L. Dennis** is a resident in Obstetrics and Gynecology at Swedish Covenant Hospital, Chicago. Received the B.Sc. and the M. D. degrees from University of Alberta. He plans to leave for Belgium this fall, later to be in Belgian Congo under the Mission Covenant Mission Board.

**Alvin E. French**, M. D., is an Intern at Hamot Hospital, Erie, Pa. Received B. A. from Houghton College, M. D. from Albany Medical College. Preparing for service as a missionary in British West Africa.

**Harold E. Miller**, 3251 Osage, Denver, Colo., is a graduate of Goshen College, and an Instructor at Rockmont College, Denver.

**Leon Arthur Montague** is a dentist at 617 Pine St., Owosso, Michigan. Has an A. B. from Central Michigan College, D. D. S. from Northwestern Univ. Dental School.

**J. E. McLennan**, M. D., with degrees from University of Illinois, is a physician in private practice at 504 Via Alcance, Palos Verdes Estates, Calif.

**Theodore R. Smith**, 84 East Woodruff Ave., Columbus 1, Ohio, is a Research Fellow at The Ohio State University. Has Bachelor's degree in Chemi-

cal Engineering from West Virginia U., M.Sc. from Ohio State U.

**Wallace D. Thornbloom**, with the M. D. degree from University of Nebraska, is at present in private practice at 5245 N. Christiana Ave., Chicago 25, Ill. On leave of absence from Evangelical Mission Covenant as missionary to Belgian Congo.

**Everett Van Reken**, M. D., took his degree from University of Chicago, pre-medical studies at Calvin College. Now in private practice at 1440 S. 61st Ave., Cicero, Illinois.

**J. Martin Webber**, M.D., is a Resident in Pathology, and Fellow in Cancer Control Clinical Research at Miami Valley Hospital. Has the M. D. degree from Albany Medical College; home address 348 Peach Orchard Ave., Dayton 9, Ohio.

**Joseph H. Boutwell, Jr.**, is Assistant Professor of Physiological Chemistry at Temple University School of Medicine. Received B. S. degree from Wheaton College, M. S., Ph. D. and M. D. from Northwestern U.; home address is 213 E. Moreland Rd., Willow Grove, Pa.

**Harold H. Bowerman** is a physician at 7 Clayton Terrace, St. Louis County 24, Mo. Received A.B. degree from Whittier College, M. S. from Washington U., and M. D. from Tulane U.

**John D. Condie**, M. D., is an Intern at Chicago's Cook County Hospital. Pre-med training from University of North Dakota, M. D. from Univ. of Illinois. Resides at 630 S. Hermitage, Chicago, Ill.

**Elmer G. Hamme**, practitioner of general medicine at R. 1, York, Pa. Has the B. S. degree from Pennsylvania State Univ. and M.D. from Hahnemann Medical College.

**G. A. Hemwall**, M. D., is engaged in private practice at 839 N. Central Ave., Chicago 51, Ill. Received his training at Loyola Univ. Graduate School and Medical School.

**Jack Hoekzema**, 10017 Beverly, Bellflower, Calif., is a physician with M. D. from Rush Medical College, took pre-medical work at Calvin College.

**Matthew E. Johnson**, physician residing at 906 Stokes Ave., Collingswood, N. J.. Has A. B. degree from Temple U., M. D. from Jefferson Medical College.

**Maxwell A. Kerr**, is an acoustics-electronics engineer in the Navy Department, Bureau of Ships, Washington, D. C., resides at 200 Meadow View Rd., Falls Church, Va. Has a degree in electrical engineering from Michigan State College.

**Milton G. Marion**, M. D., is engaged in private medical practice at 410 S. Main St., Pennington, N. J. Has B. S. degree from Ursinus College, M. D. from Hahnemann Medical.

**John H. Mehrling**, with an M. D. from Long Is-

land College of Medicine, resides at 110-20 84th Ave., Richmond Hill 18, L. I., New York, and has an office in Brooklyn. Took his pre-medical training at Columbia U.

**Arthur A. Miller**, 7851 Allison Ave., Dayton 5, Ohio, is a highway engineer with the U. S. Bureau of Public Roads. Has A. B. degree from Wheaton, B. C. E. and M. S. from the Ohio State University.

**Josefina M. Orteza's** home is at 408-A Pennsylvania, Manila, Philippines. Received the M. D. degree from University of the Philippines, now serving in Lutheran Hospital, Cleveland, Ohio.

**C. Jackson Rayburn**, M. D., is a Fellow in Surgical Research at Western Reserve Univ. Has M. S., M. D., and Ph. D. degrees from University of Colorado.

**Harvey C. Roys** is a self-employed dermatologist and member of the faculty of Univ. of Washington School of Medicine. Has M. D. degree from Univ. of Oklahoma School of Medicine. Home address 16290 Beach Drive, N. E., Seattle 55, Wash.

**Wendel R. Shank**, 902 E. Reynolds St., Goshen, Ind., has B. S. and M. S. degrees from Columbia Univ., presently serving in the U. S. Army Hospital, EENT Med. Detachment, Ft. Leonard Wood, Mo.

**William D. Sherman**, M.D., is a physician and surgeon at Butte County Hospital, Oroville, Calif. Has the B.S. degree from Univ. of Oregon, M.D. from Univ. of Oregon Medical School.

**Hollis C. Stevenson**, Mooers, N.Y., is a dentist with A.B. degree from Houghton College, D.D.S. from University of Buffalo.

**Stanley P. Stone**, physician, 1430 Angelo Drive, Minneapolis 22, Minn. Received B.A. degree from Macalester College, M.B. and M.D. from Univ. of Minnesota Medical School.

**Arthur H. Svedberg** is a physician in private practice at 3721 Woodridge Rd., Cleveland Heights, Ohio. A graduate of Wheaton College, he received his M.D. from Hahnemann Medical College.

**Roger C. Troup**, M.D., Sudan Interior Mission, Bingham Memorial Hospital, Jos, Nigeria, West Africa. Has B.S. from Wheaton College, M.D. from Southwestern Medical.

**Henry P. Webb, M.D.**, received his training at Hahnemann Medical College, is now in private practice at 6410 Rising Sun Ave., Philadelphia 11, Pa.

**John O. West** took the M.D. degree from University of Southern Calif., now in limited private practice and doing research in the surgical basic sciences. Home address: 740 Fratkin Place, Los Angeles 23, Calif.

**J. Otis Yoder** is Associate Professor of New Testament Greek at Eastern Mennonite College, Harrisonburg, Va. He has Th.B. from this institution, A.B. from Goshen College, B.D. from Faith Theological Seminary, and Th.D. from Northern Baptist Theological Seminary.