

design capability and purpose (see Romans 1:19, 20).

4. Rather than total evolution being proved, all that is really known is that organisms vary markedly due to changes in genetic makeup and due to interactions with the environment (and changes in environment due to migration, isolation, catastrophic change). Much of this evidence of variation is circumstantial, but some of it is valid and coercive, such as that which comes from breeding experiments.

5. God has designed the living world of different types of organisms to survive by adapting to changes in conditions. He has given each kind a distinctive genetic makeup capable of variations so that each kind can adapt to change. Individuals cannot survive; particular variations within a kind do not all survive (extinction); and even some kinds may not survive catastrophic changes in environment (for example, dinosaurs became extinct either before the Genesis Flood, or in the climate and environment following it).

Conclusion

It is certainly true that Christians derive their faith in God from the Bible. It is also true that Creationists, Theistic Evolutionists, and some Naturalistic Evolutionists believe in an ultimate organizing power and process, based on observations of the universe and nature. The difference is that Agnostic Evolutionists believe that this ultimate principle is non-personal, non-intelligent, and is a fortuitous set of eternal laws of

nature and that intelligent beings are the product of these laws and forces.

Creationists and Theistic Evolutionists, on the other hand, believe that a living, intelligent, powerful Being is the ultimate source of the universe, the non-living world, living things, and human society. Considering the ambiguous faith required by those who believe in both evolution and the Bible, we find it hard to justify the position of the Theistic Evolutionist. God thwarts the wise and reveals himself to "babes" (Matt. 11:25-27), and to the mature (2 Cor. 2:15).⁴

Notes and References

¹Not a random recombination since in normal meiosis specific genes are linked with specific chromosomes. See Simpson, Pittendrigh, Tiffany, *Life: An Introduction to Biology*. New York: Harcourt, Brace and World, 1957.

²Clark, R. E. D., *The Universe: Plan or Accident*, Philadelphia, Muhlenburg Press, 1961, pp. 15-25. Morris, Henry, *The Twilight of Evolution*, Grand Rapids, Baker, 1964, pp. 33-37.

³"Evidence is coercive [when] it admits of only one interpretation." Evidence is pervasive when it is subjective and capable of explanation from more than one point of view." Marsh, F. L., *Evolution or Special Creation?* Washington, Review and Herald Publ., 1963, pp. 4, 6.

⁴"It is not . . . a question of whether God has deceived scientists concerning the matter of origins if Genesis should turn out to be true. The real question is whether God has deceived those who have taken the Book of Genesis seriously if the modern uniformitarian and evolutionary view of origins should turn out to be true." Whitcomb, John, Jr., *The Origin of the Solar System*. Philadelphia, Presbyterian and Reformed Publ., 1964, pp. 28, 29.

A COSMOLOGICAL DEVELOPMENT

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A major developer of the steady-state theory, Prof. Fred Hoyle, has reversed his position. He has announced that he has discarded this widely known cosmological formulation. Such a change in the thinking of a leading astronomer is relatively unimportant to the fundamental Christian. Yet, it is another evidence that modern science is imperfect and limited severely in the area of cosmology. Cosmological speculations, as such, are not anti-Christian; however, cosmology must contain a truly Biblical cosmogony to be acceptable to the Christian.

In recent months, modern astronomers have witnessed one of the most important theoretical developments of this decade. Prof. Fred Hoyle, of the University of Cambridge and one of the leading theoreticians in astronomy today, has repudiated the controversial steady-state theory.¹

Hoyle, together with Hermann Bondi and Thomas Gold, was one of the developers of the steady-state theory in 1948. Since that time he has been one of its chief proponents and has succeeded, through his popular writings, in making the theory widely known.

The steady-state theory, in common with other cosmological theories, has as its goal the under-

standing of the universe, including the question of its origin. According to this theory, the universe is in a continual state of expansion.

To account for the expected decrease in the average density of galaxies in the universe, it is assumed that new matter is created **out of nothing** in empty space. This matter condenses into new galaxies. The rate of creation of matter just balances the expansion of the galaxies so that a galactic observer would see essentially the same picture of the universe at any time, no matter where his location in the universe.

Necessarily, if this theory be true, the average density of galaxies in the universe has remained

constant throughout history. It would seem to be a simple matter to test this through observation. Unfortunately the test requires observation at the extreme limit of optical means and no conclusive data has been obtained.

Recently, however, data from several unrelated areas has seemed to contradict constancy of density of galaxies with time. The cumulative weight of the arguments has caused the reversal in Hoyle's position. He states, "it seems likely that the idea will now have to be discarded, at any rate in the form it has become widely known—the steady state universe."²

Observations by radio astronomers have supplemented those of optical astronomers. Martin Ryle and his associates, also of the University of Cambridge, have counted radio sources rather than galaxies. Their results indicate that the universe was more dense in the past than it is now. In particular, red-shift measurements from a relatively small sample of fifteen quasi-stellar objects yield values which confirm a state of higher density in the past.

Recently a group of Bell Telephone Laboratory scientists have detected a radio background at a 7.3-cm wavelength. No known astrophysical process accounts for this. On theoretical grounds, however, it can be shown that this *might* be a consequence of an original high density in the universe. Similar results follow from observing the helium to hydrogen ratio in stars and nebulae, and in a theoretical explanation of the structure of elliptical galaxies.

Hoyle has now adopted a model of the universe which is best described as an oscillating universe. In this, localized portions of the universe are subject to pulsations which may result in non-uniform high density condensations of

matter. The non-uniformities act as "the seeds for the next generation"³ of galaxies.

The foregoing has briefly summarized the arguments causing Hoyle's reversal of position. It is likely that this is the beginning of the ultimate demise of the steady-state theory. In a sense, the "king" has abdicated and the "followers" are left leaderless.

The question might well be asked at this point, What are the implications for Christianity? To the author's way of thinking, this development, although deserving of widespread dissemination, is relatively unimportant to the fundamental Christian. It is but one of many instances where modern science has failed to reach the level of truth already revealed in the Bible. The fact that the steady-state theory is apparently on its way to joining the already discarded cosmological theories of Einstein, Milne, Lemaitre, Eddington, de Sitter and Godel is only another evidence that modern science is imperfect and limited severely in the area of cosmology, particularly in its cosmogonical aspects. In truth, "the natural man receiveth not the things of the Spirit of God."

God has given a clear cosmogonical statement in the opening chapters of the Bible. Any cosmological theory not founded upon this statement is faulty. Cosmological speculations in themselves are not anti-Christian; however, cosmology must contain a truly Biblical cosmogony to be acceptable to the Christian. This is the challenge which Christianity offers science.

References

¹F. Hoyle, "Recent Developments in Cosmology," *Nature*, October 9, 1965, pp. 111-114.

²*Ibid.*, p. 113.

³*Ibid.*

COMMENTS ON SCIENTIFIC NEWS AND VIEWS

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L. B. Quesnel, in a note in *Nature*, Vol. 211, pp. 659 and 660, 6 August 1966, describes some "snapping movements" seen during the division of *Escherichia coli*. It appears that, during division, the parts, or one of them, writhe about, presumably to "help" the separation. This fact may be interesting as another example of the real complexity of even so humble a creature.

Antibody Formation

On pp. 28 *et seq.* of *Scientific Research* for August, 1966, is an article describing some experiments on the formation of antibodies as a defense against the antigens which can cause infection.

It has been supposed that the antigens somehow controlled the formation of antibodies, may

be by acting as "templates." The experiments described, though, seem to show, by radioactive tracers, that the antigens never get to the cells in which the antibodies are formed. Evidently the process is more complicated than has been supposed.

The notion of the "genetic code," as it is ordinarily expounded, seems to be another theory of "templates." Now that one such theory seems to be in difficulties, it may be well to examine others critically.

On the Nature of Dreaming

A report on p. 14 of the *Whig-Standard*, Kingston, Ontario, Canada, 30 August 1966, deals with suggestions by F. Snyder, of the National