
Pro Rege

Volume 1 | Number 3

Article 5

March 1973

Response to Alloformitarianism

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Recommended Citation

Hodgson, Richard G. (1973) "Response to Alloformitarianism," *Pro Rege*: Vol. 1: No. 3, 20 - 22.

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A quarterly faculty publication of
Dordt College, Sioux Center, Iowa

impart to the students an understanding of creation as it actually is? If such teaching is Christian teaching, then much secular education in natural science is already actually Christian education.

Such a view, however, neglects the effect of sin on man. Men do suppress the obvious. They do not of themselves admit that the power of God is the reason that coherence exists in nature. Education is Christian only when it takes into account the whole picture. In presenting the whole picture to the student, the teacher should explain how the power of God unifies what is studied. Error or incompleteness in such an explanation will cause the student to have a distorted view of creation. Christian education in natural science is not merely "ordinary" natural science with an added statement concerning God as Creator; it is education which teaches the student why no phenomenon can exist--can have

meaning for man--without God as Creator.

Thus, in Christian education in natural science it is not enough to teach isolated phenomena. A way of praising God in education in natural science is to recognize that He has led man to study creation and understand it. Even though man is limited, he has been enabled to put together some of the parts of creation and to see that there is a God-ordained whole. If our students are taught these things and learn to believe them, then they are taught for the King.

1. Discussion of this thesis beyond what is given here can be found in R. Maatman and G. Bakker, Contrasting Christian Approaches to Teaching the Sciences, The Calvin Col-Monograph Series, Grand Rapids, 1971, and R. Maatman, The Bible, Natural Science, and Evolution, Reformed Fellowship, Grand Rapids, 1970, Chapters 7 and 12.

FOR THE RECORD, incidentally. . .

by James Koldenhoven

RESPONSE TO ALLOFORMITARIANISM

In the last issue of *Pro Rege* Professor Gary Parker sought to examine uniformitarianism, a fundamental assumption underlying much of modern geology. It is always good to reexamine fundamental assumptions involving our Biblical faith and the scientific enterprise. I appreciate my friend's thought-provoking effort.

I believe, however, that Professor Parker may have been rather abrupt in his treatment of uniformitarianism. I believe that a caricature

of uniformitarianism has been presented. I fear that the casual reader may be led to conclude that the results of modern geology are mere reflections of unbiblical presuppositions, and that the reader may react by downgrading scientific study as a vain enterprise. There are, of course, unbelieving geologists--unfortunately a large army of them--with unbiblical assumptions whose interpretations must be treated with caution. They live in the same world that we

Christians do. They examine the same rocks, the same volcanoes, lava flows, and fossils as we do. And in the main they, as all other scientists, tend to be scrupulously honest in reporting their data. Although some of them, in their interpretations, may jump to conclusions (especially in the area of biological evolution), there is a basic honesty in dealing with observational data in the scientific community. I feel this is, in some sense, a work of God's common grace. I think the principle of uniformitarianism must be presented and examined in the same spirit of honesty.

The uniformitarian principle was first proposed by James Hutton of Edinburgh in 1785, and popularized by the English geologist Sir Charles Lyell in the 1830's. It holds that "... rocks formed long ago at the earth's surface may be understood and explained in accordance with physical processes now operating" (Gilluly, Waters, and Woodford, *Principles of Geology*, 3rd ed., 1968, p. 18). Thus the geologist assumes that water has always flowed downhill. This is a simple statement, but one with profound implications, because the study of erosion and sedimentation has a prominent place in geology. I am not aware of any evidence that water ever did anything but run downhill (if given the chance), and the Bible, God's infallible Word, does not give us a basis for believing otherwise.

Of course the uniformitarian principle involves many other things beside water and gravitation. The rate at which igneous rocks cool, the movements of glaciers, and, quite possibly, the movement of the tectonic plates of which the Earth's crust is composed, are other examples. Admittedly it involves extrapolation from the present into the past--in some cases into the distant past. Unfortunately, Mr. Parker fails to emphasize that most geologists do not take uniformitarianism as an absolute dogma; indeed he gives a contrary impression. In almost every geology textbook it is cautioned that, while uniformitarianism is a basic working hypothesis, there is danger in extrapolating too far. One must always have the warrant of physical data to support one's theories and conclusions. Consider, for example, the caution expressed in Gilluly, Waters and Woodford (*ibid.*):

The Uniformitarian Principle, like any other scientific generalization, rests on the circumstance that no known facts contradict it... Yet, the principle must be interpreted carefully and rather broadly. Although there is good evidence to believe that geologic processes have always operated in the same way, they did not always operate at their present rates or intensities.

There is, of course, more danger in extrapolation in some areas than in others. It is extremely dangerous to extrapolate from the current stock market trend to make a judgment concerning the level of the Dow Jones Average a year from now. Much the same goes for the market in cattle and hogs. On the other hand, we can extrapolate with considerable certainty from the Earth's present orbital motion to determine its past and future positions, even for thousands of years. Extrapolations based on fundamental physical constants, for example, should not be spoken of in the same manner as predictions of a stock or commodity markets analyst. I find the lack of such a distinction in the article distressing at many points. Of course in any field, even celestial mechanics, one could extrapolate beyond the precision of one's data, but the honest and responsible scientist will refuse to do so.

It is better, I believe, to accept the uniformitarian principle as a rough working hypothesis in the field of geology, rather than opt for an "alloformitarianism", which is little more than a doctrine asserting that the disjunctions in the creation are of such magnitude that it is more a Chaos than a Divine Order. Where Scripture sheds light on the interpretation of the creation we must be careful to walk in that light. We cannot use uniformitarianism to deny God's works of creation and providence. But neither can we be content with a world of chaos and disjunction, as if the Sovereign God does not have an overriding order and purpose in and for His creation. The fruit of a chaotic world and life view is skepticism about the validity of trying to investigate the creation, the scientist's true task. A not inconsiderable factor in the development of scientific inquiry in the Western world is the fundamental as-

sumption of monotheism. If there is one God only, then there should be a reflection of divine order (in spite of the distortions of sin) in the creation. The true scientific enterprise has been to discern what we can of that divine order. Although we only know in part (I Cor. 13:12), God in His kindness has been pleased to reveal much to the patient and persevering investigator and observer, both believer and unbeliever.

Another statement in the article particularly disturbs me. It is said, "Catastrophists were once ridiculed for suggesting that large celestial bodies interacted with the earth somewhere in the past, but new measurements on the moon's recession from the earth suggest that it must have been dangerously close to the earth in the fossil period." (p. 11)

While I am not sure what is meant by the vague phrase "the fossil period", the impression is given that catastrophists have been martyred by ridicule for suggesting that large celestial bodies "interacted" with the Earth. I think this martyrdom has largely taken place in the heads of the catastrophists. I am not sure what kind of "interaction" is here in view, but since ancient times men have generally acknowledged some form of interaction between the

Sun, Moon, and Earth. Consider tides and gravitation. That the Moon is slowly receding from the Earth due to tidal action and the conservation of angular momentum--far from being a recent discovery--has been known for many decades. In the 1890's in fact, George Darwin (son of Charles) used this datum to argue that the Moon originated from the Earth. (This Darwinian theory has been generally discarded by the scientific community).

There are a number of other points in the article which perhaps deserve comment, including the use of Biblical quotations which are arrayed against the caricature of uniformitarianism which is presented in the article. By persistently insisting that uniformitarians extrapolate in an unlimited manner (see footnote 11 on p. 16 for example) when in fact they all acknowledge that the Earth had a definite beginning--which most certainly must serve as a cut-off point to extrapolation--Mr. Parker misses reality, and his argument becomes an empty exercise.

by Richard Hodgson
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MY FRIEND PUBLISHES

My friend and colleague in the English Department, Mr. Merle Meeter, has written a book, Literature and the Gospel (Presbyterian and Reformed Publishing Co., 1972--paperback, \$3.50). Meeter has previously published two small volumes of poetry, Canticles to the Lion-Lamb and Prince of God.

Subtitled "Biblical Norms for Literature," Meeter's latest book is designed to show "That the most important literary principles or norms, for structure as well as content, are... either definitively enunciated or peerlessly illustrated in the Bible" (from the Preface). From this thesis the author does not waver. The Bible