

ONE ERROR OF DALRYMPLE CORRECTED

ROBERT E. KOFAHL*

Received 20 February 1984; Revised 5 April 1984

Abstract

Dalrymple's attack on a creationist calculation of radiometric dating is found to be incorrect.

The capable and well-known geochronologist, G. B. Dalrymple, has participated in the current evolutionist counterattack upon the creationists in an article in *Federation of American Societies for Experimental Biology*.¹ While some of his criticisms of creationist literature may or may not have some validity, one at least is in error and suggests that overeagerness to vanquish his opponents has led Dr. Dalrymple into some unjustified and erroneous charges.

One of the publications which Dr. Dalrymple attacks is *The Creation Explanation* by Kofahl and Segraves.² On page 3034 of his critique he says:

Examples of fictitious data are not uncommon in the creationist literature. For example, in their book *The Creation Explanation*, Kofahl and Segraves make the following statement, for which they reference a paper by Virginia Oversby:

A series of volcanic rocks from Réunion Island in the Indian Ocean gives K/Ar ages ranging from 100,000 to 1 million years, whereas the Pb-206/U-238 and Pb-206/Pb-207 ages are from 2.2 to 4.4 billion years. The factor of discordance between "ages" is as high as 14,000 in some samples.

The problem with this assertion is that the uranium/lead and lead/lead ages that Kofahl and Segraves cite do not appear in Oversby's paper. . . . She did not calculate any ages for these lava flows, nor did she report any data that could be used to do so (emphasis added). I do not know where the uranium/lead ages came from, but I suspect that Kofahl and Segraves took the liberty of doing some calculations of their own. In any event they clearly do not understand either what Oversby did or the meaning of her results.

We have given an almost complete quote of Dalrymple's criticism of our book. Is it justified? No, it is not. We did indeed "(take) the liberty" of doing our own calculations. But his claim that Oversby's paper did not contain the data necessary for calculating lead/uranium ages of the rocks in question is so obviously false that one could wonder if he even read Oversby's article. She gives in her Table 1 the U-238/Pb-204 values for twelve rock samples from a number of lava flows on the island. Then in her Table 2 she gives the ratios of Pb-206 and Pb-207 to Pb-204 for each of the respective rock samples. What more is needed for the calculation of a lead/uranium "age"? Only the respective isotopic ratios for so-called "primordial lead," the commonly used values for which are easily available.³ In addition the ratio of U-238 to U-235 is needed for calculation of lead/lead "ages."⁴ So we took the liber-

ty of calculating the following results in the lead/uranium systems, comparing them with the potassium/argon results cited in Oversby's Table 2:

The Pb-206/U-238 values range from 2.8 to 3.00 billion years.

The Pb-206/Pb-207 values range from 4.42 to 4.45 billion years.

The K/Ar values cited by Oversby range from 0.073 to 1.98 million years.

Note that the lead/uranium "ages" have a fair range, while the lead/lead "ages" are almost twice as great but have only a small relative range of values. However, these consistent lead/lead values are apparently not considered by chronologists to be meaningful. In any event, the lead/uranium "ages" range from 1,300 to 18,000 times as great as the potassium/argon "ages" in particular rock samples, and the lead/lead "ages" range from 2,200 to 42,000 times as great as their companion potassium/argon "ages."

The point which we made in *The Creation Explanation* is that whereas at Réunion Island the K/Ar results are accepted as correct, in other instances such as the 1880-1881 lava flows in Hawaii, the K/Ar results are known from historical data to be incorrect.⁵ So how is one to determine which "ages" are the right ones? The answer is, as all creationists know, those results are accepted which accord with overriding theoretical considerations. So it is usually possible to find reasons for observed anomalies. Thus, the Hawaiian rocks contain "excess radiogenic argon" retained because of solidification before degassing. Conversely, in the case of the Réunion Island rocks, the high lead/uranium ratios, supposedly produced during a multi-billion year sojourn in the earth's crust, were brought along with the magma when it was expelled to form the island.⁶ These explanations may satisfy most chronologists but, we ask, how can we ever be sure that any particular atomic ratio actually corresponds to the true age of a rock sample?

We think we could direct Dr. Dalrymple to some real errors or inadequacies of our book which he may have been too rushed to catch. No book is without fault. Ours is being thoroughly revised and, we hope, made more accurate and useful, as well as more honest. Our enemies fast help to make us more learned men, as Luther observed long ago.

Acknowledgment

I am indebted to Dr. Robert H. Brown, member and former Director of the Geoscience Research Institute, Loma Linda, CA, for invaluable counsel in our earlier calculations and in the refining of this paper.

References

1. Dalrymple, G. B. 1983. *Federation of American Societies for Experimental Biology Proceedings*, 42:3033-3038.
2. Kofahl, Robert E., and Kelly L. Segraves. 1975. *The Creation explanation*. Harold Shaw Publishers, Wheaton. p. 201.

*Robert E. Kofahl, Ph.D., is Science Coordinator, Creation-Science Research Center, P.O. Box 23195, San Diego, CA 92123.

3. The values which we used for primordial lead are Pb-206/Pb-204 = 9.346 and Pb-207/Pb-204 = 10.218. The values for decay constants are $k(\text{U-238}) = 1.55125\text{E-}10$ and $k(\text{U-235}) = 9.8485\text{E-}10$, taken from "Proposal for Simultaneous Adoption of New U, Th, Rb, and K Decay Constants for Calculation of Radiometric Dates," by Richard Lee Armstrong, Dept. of Geological Sciences, University of British Columbia, Vancouver, B.C., Canada V6T 1W5, published informally about 1975. The formula for the lead/uranium age is

$$t = \frac{2.3026}{1.5513 \times 10^{-10}} \log \left[1 + \frac{(\text{Pb-206/Pb-204})_{\text{correctd}}}{(\text{U-238/Pb-204})} \right]$$

The corrected value of the measured ratio, Pb-206/Pb-204,

is obtained by subtracting from it the corresponding primordial lead/lead ratio.

4. The value used for U-238/U-235 is 137.88, taken from Armstrong, *Ibid.* The formula for the lead/lead "age" is

$$\frac{\left[\frac{\text{U-235}}{\text{U-238}} \right] \left[\frac{\text{Pb-206}}{\text{Pb-207}} \right]_{\text{correctd}}}{1} = \frac{e^{k_{235}t} - 1}{e^{k_{238}t} - 1}$$

The solution for t must be obtained by a reiterative process which is easily programmed on a hand calculator.

5. Funkhouser, John G., and John J. Naughton. 1968. *Journal of Geophysical Research*, 73:4601-4607.
6. This explanation was proposed to me by Prof. James Gill of the University of California at Santa Cruz, an experienced geochronologist.

EDUCATIONAL COLUMN

TEACHING ABOUT ORIGIN QUESTIONS

JOHN N. MOORE*

Received 16 July 1984

Abstract

With this article the author begins a series in which he draws upon a decade of classroom experience in teaching about origin questions. He encourages creative, innovative "solutions" rather than litigation regarding teaching about first origins. Thus the series of articles is intended to generate calm and clear understanding of "how to" teach in a fair and just manner. This article contains a discussion of the validity of two contrasting viewpoints about origins.

Introduction

To protect the integrity of a pluralistic educational curriculum, a positive alternative to the majority "establishment" interpretation of first origin questions is needed in American schools. A viable contrasting position to the "conventional wisdom" of the mechanistic, animalistic origin of human beings is needed as an integral part of curriculum in both public and parochial schools. However, teachers must understand "how to do it," if they are to supplement the exclusive, monopolistic ideas of "evolutionary" origin of modern male and female human beings.

All educators need to recall that the exercise of academic freedom is fully legal in the United States. Thus wherever questions of ultimate origin of the universe, or life on the earth, or mankind arise there are *no legal prohibitions* against open, candid discussion of different interpretations of objective, scientific data in science classes, or in any social studies, history, or anthropology classes.¹

Analysis of many, many cultures results in the conclusion that many, many "creation stories" have been developed. Yet, upon careful consideration of all available "variations," it is imperative for all educators to understand that *only two primary* viewpoints or interpretative approaches on the origin of all things are involved: (1) a theistic viewpoint, or (2) a non-theistic viewpoint. In short, either the Eternal, Personal Creator God was *the* source of *all* things or He was not.

*John N. Moore, M.S., Ed.D., professor emeritus of natural science, Michigan State University, is now Director of Origins Educational Service, 1158 Marigold Ave., East Lansing, MI 48823. Dr. Moore expands his position in this article in greater detail in his book, *How To Teach Origins (Without ACLU Interference)* published in 1983 by Mott Media, Milford, MI 48042 (\$14.95).

The heavens and the earth and all that is therein were created by the Eternal, Personal Creator God, as believed by many of the "founders" of the modern scientific discipline. Or, all things in the universe, in the solar system, in plant form and animal form came into existence in some way from Eternal, Impersonal Matter-Energy, which is the position held by the majority of scientists today. For this on-going discussion of "Teaching about Origin Questions," the latter, majority alternative will be labelled Total Evolutionism, and shall be understood as the fully contrasting viewpoint to that of Total Creationism that identifies the former, "traditional" viewpoint. These are *the two* fundamentally contrasting points of view for different interpretations about first origin questions. (Admittedly variations and modifications of each are possible, but basic comparative statements are provided in Table I.)

Two Contrasting Viewpoints

A clear indication of the grand magnitude of the position of Total Evolutionism can be found in the lead article by the famous evolutionist Dr. Ernst Mayr in the *Scientific American*² of September 1978. That issue contained nine articles on the status of evolutionary thinking at that time and was distributed widely as a "public service." Presumably, according to Dr. Mayr, biological (organic) evolution was preceded by chemical (molecular) evolution, which was preceded supposedly by atomic (cosmic) evolution. (And social studies specialists have extended evolutionist thinking to propose societal (social) evolution as a type of "postlude" to "biological evolution.")³

A majority of professionally qualified scientists support teaching the youth of America the objective, scientific facts that can be used to support Total Evolu-