

## HOW RELIABLE IS CARBON 14 DATING?

(We print excerpts from two articles which might help on this problem. One is by Harry V. Wiant, Jr., an instructor at Humbolt State Teacher's College at Amata, California. Another is by Lester Harris who is chairman of the Biology Department at Columbia Union College.—Editors)

We quote Wiant:

"Carbon-14 dating has been hailed by a large segment of the scientific world as an accurate technique facilitating the determination of the age of organic remains up to 20,000 years or so in age. This dating method is based on the fact that a certain amount of the nitrogen atoms in the upper atmosphere is induced to produce carbon-14 through the action of cosmic radiation. Carbon-14 is a long-lived isotope with a slow rate of disintegration, having a half-life of 5,760 years.<sup>3</sup>

As a plant living on the earth uses carbon dioxide in the process of photosynthesis, it takes up a certain fraction of the radioactive carbon-14. Animal life also contains about the same proportion of radiocarbon, since plant material is the basic foodstuff. One gram of modern or living carbon will give rise to approximately 15 disintegrations per minute from the carbon-14 it contains.<sup>3</sup> (These disintegrations can be detected by the familiar Geiger-Mueller counter or other similar instruments.)

Half the radioactive carbon atoms present in the gram of modern carbon will have disintegrated within 5,760 years after the organism's death, yielding a count of about 7.5 disintegrations per minute, at this time. In this manner, disintegrations per minute can be related to the age of organic remains,

"Carbon-14 dating has provided answers closer to the truth than former geological estimations where thousands of years have been tossed about with quite unscientific abandonment behind a smoke screen of impressive terminology. For example, dates established by this technique have compressed the history of what the anthropologist would consider to be "early man" to about 10,000 years,<sup>2</sup> and some findings show the last glaciation in North America may have occurred about 3,000 instead of 30,000 years ago.<sup>5</sup>

### Errors in the Dating

"However, even these more realistic dates may be subjected to considerable error because of the assumptions inherent in this technique. Among the several suppositions are:

"1. Cosmic radiation has been constant. (Obviously, changes in the amount of cosmic radia-

tion reaching the earth's atmosphere would vary the quantity of carbon-14 produced.)

"2. The content of carbon dioxide in the earth's atmosphere has been constant. (Should the atmosphere have contained a greater percentage of carbon dioxide during certain periods and cosmic radiation remained constant, organisms living then would appear older than they should now because the radiocarbon assimilated was diluted by normal carbon.)

"Immanuel Velikovsky based his theory of 'cataclysmic evolution' on the belief that cosmic radiation has varied greatly in the past, and evidences that such radiation has not been constant are beginning to come to light.

"In respect to the second assumption, Plass<sup>4</sup> explained climatic changes on the basis of variations in the carbon dioxide content in the atmosphere. He stated that a reduced amount of this gas at the time of the last glaciation would mean that the radiocarbon dates for events before the recession of the glaciers are in question.

"In closing, it might be noted that this dating system is of proven fallibility. A case in point is the instance when radiocarbon dating indicated the wood of living trees growing near an airport to be more than 10,000 years old, because it contained so much inactive 'fossil carbon' from the exhaust of airplanes.<sup>1</sup>"

### Literature cited by Wiant

1. Huber, B. 1958. "Recording Gaseous Exchange under Field Conditions." In: *The Physiology of Forest Trees*. K. V. Thimann (ed.) The Ronald Press Co., New York, pp. 187-195.
2. Moore, R. 1953. *Man, Time, and Fossils*. (The story of evolution). Alfred A. Knopf, Inc., New York, 411 pp.
3. Oak Ridge Institute of Nuclear Studies (undated) Research courses manual. Special Training Division. Exp. 16.
4. Plass, G. H. 1956. "The Carbon Dioxide Theory of Climatic Change." *Tellus* 8: 140-154.
5. Velikovsky, I. 1955. *Earth in Upheaval*. Doubleday Co., Inc., New York, 301 pp.

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Harris uses much the same explanation as Wiant to show how carbon-14 dating is possible. Then he indicates some of its weaknesses. He states it is virtually impossible to know whether the sample for which age is to be determined is free of foreign carbon-containing material.

Rootlets and other recent material would lower the apparent age, while infiltration by carbonates and bicarbonates relatively free of radioactivity would greatly exaggerate the age. Any dated object from a limestone soil region would have

a dubious date indeed, for much (if not most) limestone is sedimentary, and fossiliferous in origin and is capable of easily dissolving and precipitating whenever moisture is present.

Harris points out that atmospheric levels of carbon-14 are not constant. The reliability of the dating techniques depends on the constancy of carbon-14 formation and its atmosphere-plant-animal equilibrium. The earth itself is witness to this inconstancy. The worldwide evidence of great volcanic activity in the past is mute testimony to the fact that the atmosphere has received great quantities of nonradioactive CO<sub>2</sub> from volcanic ages.

Harris states: "H. E. Suess (*Nuclear Geology*, p. 354) has shown that there has been a significant decrease in atmospheric radio-carbons in the past fifty years as a result of the industrial revolution and the burning of great quantities of coal and oil. On the other hand, it can be shown that the radio-carbon level in the atmosphere has increased by as much as 12 percent as the result of atomic explosion tests. Perhaps no future carbon dating of present materials will be valid."

#### Constant Bombardment Assumed

The third point Harris makes is that there is no proof that cosmic-ray bombardment of the

earth's atmosphere has been constant. The radio-carbon dating technique must assume this constancy, however, in order to be valid.

Harris continues: "The tremendous quantity of fossil carbon now existing in the forms of coal, lignite, petroleum, oil shale, fossiliferous limestone, etc., indicates a prior condition when most of that carbon was a part of the atmosphere as carbon dioxide. It is also known that the higher concentrations of atmospheric carbon dioxide than our present .03 plus percent will greatly accelerate most plant growths. Carbon dioxide concentrations up to a hundred fold would have no harmful affects on higher animals.

"If an antediluvian atmosphere contained, say, only ten times as much carbon dioxide as now, the ratio of carbon-14 concentration to non-radioactive carbon concentration would be only one tenth as great, and the apparent radiocarbon age of the organic materials produced under such conditions would be of the order of less than one third that presently assigned to them (2 to the third power equals 8). Such a figure would bring most of the published radiocarbon dates into harmony with the historical record of the Bible. The obviously inconsistent dates of samples from the same geological formations may well be explained by sample contamination."

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## ADAPTATION AT BIRTH VS. EVOLUTION

DR. LARRY BUTLER

*University of Arizona, Tucson, Arizona*

One of the tremendous challenges faced by a new-born baby is his sudden and complete dependence on his heretofore unused and untested lungs. Until birth, the blood is diverted around the perfectly developed but nonfunctional lungs by a system of bypasses which normally become closed off at birth, thus forcing the blood to flow through the lungs.

One of these short-circuits, a unique blood vessel called the *ductus arteriosus*, is clamped shut at birth by a ring of strongly-contracting muscle. This muscle remains firmly contracted until the by-pass blood vessel has withered away and then it, too, degenerates and disappears, after contracting only one time.

What a simple, yet significant task for this tiny ring of muscle! If it fails in its destined function, the resulting "blue baby" may be severely impaired and require surgical attention.

The vital role of this tiny muscle could *not* have been fulfilled by a mere rudimentary muscle which gradually developed to its present functional capacity by a process of evolution, because the muscle must have been fully developed and have operated perfectly for the infant to survive to maturity without modern medical aid.

Thus this tiny, shortlived muscle, destined to contract but a single time and then to perish, testifies vigorously against the theory of evolution, which denies God and the Bible