

12. Prince, J. H. 1956. Comparative anatomy of the eye, Charles C. Thomas, Springfield, Illinois, p. 245.
13. Wolff, Eugene. 1944. A pathology of the eye, 2nd Edition, H. K. Lewis and Co., Ltd., London, p. 126.
14. Hogan, Michael J. and L. E. Zimmerman, editors. 1962. Ophthalmic pathology, 2nd Edition, W. B. Saunders Co., Philadelphia and London, p. 474.
15. Prince. *Op. cit.*, pp. 252-260.
16. Hogan & Zimmerman. *Op. cit.*, p. 139.
17. Walls. *Op. cit.*, p. 45.
18. Darwin, Charles. 1909. Origin of species, P. F. Collier and Son, New York, p. 190.
19. Duke-Elder. *Op. cit.*, p. 247.
20. *Ibid.*, p. 238.
21. Prince. *Op. cit.*, p. 234.
22. *Ibid.*, p. 351.

Acknowledgment

I thank Laurie Johnston of the Biomedical Communications Department of the Children's Hospital in Vancouver, B.C., for preparing the illustrations.

ARCHAEOLOGY AND THE ANTIQUITY OF ANCIENT CIVILIZATION: A CONFLICT WITH BIBLICAL CHRONOLOGY?—PART II

STAN F. VANINGER*

Received 30 July 1984; Revised 28 March 1985

Abstract

Two of the pillars used in support of the conventional chronology of ancient history have been the Carbon-14 dating method and astronomical dating methods. In recent years it has been recognized that there are many problems with the C-14 method and that the results of C-14 analysis are often discarded when they do not yield expected results. Velikovsky's attempt to penetrate the secret workings of the scholastic establishment shows that not all the problems of the C-14 method are technical ones. Both Velikovsky and Courville as well as other writers have exposed the weaknesses and inadequacies of the astronomical methods used to establish certain dates in Egypt's ancient history. With these two so-called "pillars" removed, the conventional chronology of ancient times loses some of its awesome sanctity and we can feel much less inhibited about considering the alternative presently being worked out by Velikovsky, Courville, and others.

The only other possible source of conflict with Biblical chronology is the duration of man's pre-historic era. But one of the main factors in assigning long intervals of time to man's pre-historic periods is evolutionary bias. If we dispose of the unfounded myth that man evolved from ape-like animals over a period of millions of years, then there is no reason why the cultural developments that occurred during the pre-historic ages could not have occurred over a relatively short interval of time.

Introduction

In Part One, I outlined the work that has been done in recent decades by a number of different scholars toward a radical reconstruction of ancient history and have shown the relevance of that work to the question of whether the antiquity of civilization in the Ancient Near East is in conflict with Biblical chronology. Several topics that are very relevant and closely related to the subject matter discussed in Part One will be discussed.

The Carbon 14 Cover-up¹

In the late 1940's, Dr. W. F. Libby developed the Carbon-14 method for dating organic material. When Dr. Libby's work was made public, Dr. Velikovsky was immediately interested in this process as a possible means of verifying his revised dates for the New Kingdom dynasties of Egypt. In 1953, he wrote to Dr. Libby and sent him a copy of *Ages in Chaos* which had just been published the previous year. In his letter, Dr. Velikovsky briefly described his historical reconstruction and indicated the kinds of results he expected if C-14 analysis were to be performed on material from the 18th and 19th dynasties. Dr. Libby immediately returned the book claiming that he could not understand it and wrote that he knew nothing of Egyptology or archaeology.

Ten years later Dr. Libby wrote in an article in *Science* that C-14 dates had to be separated into two groups — Egyptian and non-Egyptian — because the whole Egyptian chronology was subject to possible systematic errors and he admitted that many of the results from Egypt gave dates that were too young by as much as 500 years. But during this 10-year interval, Dr. Velikovsky had not been idle. Over a period of 11 years, from 1953 to 1964, Dr. Velikovsky and several associates of his were engaged in a letter-writing campaign to various museums and C-14 laboratories in an effort to have the C-14 method applied to material from the New Kingdom period.

One word of explanation is in order before we discuss the letter-writing campaign. Creationists are accustomed to thinking of C-14 dates as being highly inflated. Creationists generally agree that the C-14/C-12 equilibrium ratio in the atmosphere was greatly disturbed by the extraordinary conditions brought about by the Flood. The non-equilibrium conditions that existed during the period after the Flood served to greatly inflate the C-14 dates from that time with the effect gradually tapering off as a new equilibrium point was approached. While Velikovsky felt that catastrophes such as the Flood could temporarily throw off C-14 dates, he also felt that during periods when the C-14/C-12 ratio was close to an equilibrium, that the C-14 method might very well give reasonably accurate results. Velikovsky felt that the New Kingdom period in Egypt was sufficiently removed from any major catastrophe so as to yield meaningful results.

*Stan F. Vaninger, M.S., M.A., teaches history, mathematics, and Bible at Victory Christian School, St. Louis, MO and receives his mail at 3658 Fillmore, St. Louis, MO 63116.

Velikovsky wrote first in 1954 to Professor Frederick Johnson of the Robert S. Peabody Foundation for Archaeology in Cambridge, Massachusetts. Dr. Johnson had written a chapter included in Libby's book, *Radiocarbon Dating* (1952) entitled, "The Significance of the Dates for Archaeology and Geology." Velikovsky inquired why no dates from the New Kingdom were included in the chapter and whether any tests were made on New Kingdom material. Dr. Johnson replied that he knew little about Egyptian Archaeology and suspected that no dates for objects from the New Kingdom had been determined. I would expect Dr. Johnson would be in a position to know. But we will get to the bottom of this later. On the other hand, possibly we may not!

In that same year (1954) Dr. William C. Hayes, Curator of Egyptian Art at the Metropolitan Museum of Art in New York City, wrote in reply to an inquiry about C-14 dates from the 18th dynasty that he knew of none and he added that "in the light of the very complex knowledge we have on this tightly dated and closely recorded period, it would serve no useful purpose to have this done." When Dr. Hayes was asked to supply suitable material from the 18th, 19th, and 20th dynasties to be dated, he replied that none was available for the 19th and 20th dynasties and that it would be months before he would be able to have someone look for some material from the 18th dynasty. The request was made by Dr. Robert Pfeiffer, Chairman of the Department of Semitic Languages and History at Harvard University, who was very supportive of Velikovsky. Dr. Pfeiffer then, in 1955, wrote to Dr. Dows Dunham, Curator of the Department of Egyptian Art at the Boston Museum of Fine Arts, asking for material from the 18th, 19th, 20th, 25th, and 30th dynasties. Dr. Dunham replied that no material was available for any of these periods.

In 1960 Dr. Velikovsky wrote to Dr. D. J. Wiseman of the British Museum asking if the Museum would submit some material from the New Kingdom for C-14 dating. The letter was referred to A. F. Shore, Assistant Keeper of the Department of Egyptian Antiquities at the British Museum. He replied that there had been, as far as he knew, no radiocarbon tests of material from the New Kingdom and that he did not expect such a test to give results that would differ from the accepted chronology of Egypt. Dr. Velikovsky wrote back to A. F. Shore and Dr. Wiseman suggesting that if indeed the dates of the New Kingdom dynasties and rulers were so certain, then what better way could the accuracy and reliability of the C-14 method be verified than by testing some New Kingdom samples.

These letters were referred to Dr. I. E. S. Edwards, Keeper of the Department of Egyptian Antiquities and Chairman of the Radiocarbon Dating Advisory Screening Committee at the British Museum. Dr. Edwards simply replied that he hoped someday some well-dated New Kingdom samples could be tested. In a subsequent letter, he indicated that there was a problem with obtaining "really safe, uncontaminated material" for testing. It seems that, at this point, Dr. Edwards comes close to "letting the cat out of the bag." His concern about finding uncontaminated material from the New Kingdom suggests that he was aware of some

tests that had already been made which yielded unexpected results. Nothing else could have caused this concern over contaminated material. When unexpected results are obtained, it is frequently assumed that handling of the material before testing caused contamination producing erroneous results. If this kind of reasoning is followed, then the sole purpose of the C-14 test is to verify the accepted chronology, not to serve as an independent check.

That same year (1960), a letter from Dr. Klaus Baer, Assistant Professor of Egyptology at the University of California, confirmed what we have learned from several other sources: "As far as I know there are no radiocarbon datings of any objects from the New Kingdom." He also echoed the opinion that such tests would add nothing since New Kingdom dates were well established by astronomical dating methods.

Let us summarize. No C-14 tests on New Kingdom material have ever been made. C-14 tests on New Kingdom material are totally unnecessary. And furthermore, there is no material available for such tests. Velikovsky had encountered a scholastic/bureaucratic logjam.

By now, Velikovsky was beginning to suspect that New Kingdom material had been tested but that the publication had been suppressed due to unexpected results. In an article in the *Palestine Exploration Quarterly*, J. O. D. Johnston quotes Professor Brew as saying,

If a C14 date supports our theories, we put it in the main text. If it does not entirely contradict them, we put it in a footnote. And if it is completely 'out of date,' we just drop it.²

Apparently, this practice is quite common. Robert E. Lee has cited J. Ogden III as saying that "fewer than 50 percent of the radiocarbon dates from geographical and archaeological samples in northeastern North America have been adopted as 'acceptable' by investigators."³

Actually, things had already begun to break loose during the previous year. In 1959, Dr. Froelich Rainey of the University of Pennsylvania revealed that the C-14 laboratory at that University had dated samples from every period of Egypt's history including the New Kingdom. Dr. Rainey had also admitted that "there are many serious problems in the C-14 method." Then, in 1961, a Curatorial Assistant in the Department of Egyptian Art of the Metropolitan Museum of Art in New York City revealed that in 1947 samples from the New Kingdom had been supplied to Dr. Libby at the University of Chicago and that these samples had been judged to have been contaminated. This can only mean that the samples had been tested and that the results were not what was expected. In 1962, Dr. David Baker, a sympathetic reader of *Ages in Chaos*, visited the C-14 lab at the University of Pennsylvania and had a long visit with Dr. Rainey and Dr. Elizabeth K. Ralph, who is in charge of the Radiocarbon Laboratory there. Dr. Baker related his conversation with them to Dr. Velikovsky in a letter:

. . . Mutual friends secured for me a most favorable introduction to Dr. Froelich Rainey, Director of the Museum of the University of Pennsylvania. Dr. Rainey is a vigorous, enthusiastic, obviously very well informed, courteous gentleman in his

late middle years. At no time was your name brought up by me or by anyone else at the University. I told Dr. Rainey that I was interested in the latest findings that have bearing on the date of the Exodus. My position as a professor of religion in Ursinus College and a long-time interest in the matter had prompted my quest for information in this area. . . .

"The dating of Egyptian history," said Dr. Rainey, "is one of the most controversial matters in the whole realm of Archaeology today. On the basis of radiocarbon dating we have come up with a very serious difference of 600 years between the old chronology and the radiocarbon evidence! We do not know how to account for it. It seems to extend throughout Egyptian history, but the earlier dates are off more than more recent ones. Fortunately we have an astronomical fix in the time of Seti I, so we are pretty sure of his date, but before him we are in real trouble. Right now our Museum, the British Museum, and the University of Leiden are working furiously to try to find out the cause of the discrepancy. . . ."

"Is it your opinion then," I asked Dr. Rainey, "that we may expect some very drastic changes in the dates of early Egyptian history in the next few years?" He replied: "Yes. And not only in Egypt but in the dating of the entire Ancient World, especially the Near East."

Dr. Rainey then called Miss Elizabeth K. Ralph who is in charge of the Radiocarbon Laboratory of the University of Pennsylvania. This laboratory is located in marvelous quarters in the basement of the new Physics Building. A special guide took me to Miss Ralph.

Miss Ralph is a deeply serious, dedicated scientist, whose whole life is bound up with her work. She received me most kindly, was in no wise hurried in answering my inquiries, and most willingly answered all my questions and gave me access to all the information she had!

In addition to confirming everything that Dr. Rainey told me, she furnished me a wealth of other information. . . . Miss Ralph was insistent on the wide gap between the so-called archaeological dates of Egyptian history and those derived from radiocarbon dated materials. In almost every case the radiocarbon dates are significantly younger. Today, they feel they can date to within an accuracy of 25 years in some instances. I found her working on a huge graph on which she had entered every reported item of radiocarbon Egyptian evidence, plotted against the archaeologically determined dates for the same materials. This graph shows a very unmistakable trend throughout Egyptian history in the interest of younger dates. She is trying to ascertain what the cause may be.⁴

Finally, ten years later, in 1971, two New Kingdom samples from the British Museum were dated by the radiocarbon method. Both samples were from the tomb of Tutankhamun (King Tut) of the 18th dynasty, who was the son and successor of Pharaoh Akhnaton. Seven years earlier, in 1964, Velikovsky had written to Dr. Elizabeth Ralph expressing his view that Tutank-

hamun lived not in the 14th century B.C. but rather in the ninth century B.C. and that if some short-lived samples from his tomb could be dated, he expected the results to be approximately 840 B.C. In 1971, Professor I. E. S. Edwards of the British Museum forwarded the results to the University Museum at the University of Pennsylvania. The results of the two tests were 846 B.C. and 899 B.C. When these results were not published, the Director of the laboratory of the British Museum admitted that results which deviate substantially from what is expected are often discarded and never published. When Dr. G. W. Oosterhout of the Delft University of Technology of the Netherlands wrote to the British Museum in 1972 in an attempt to verify the results of these tests, he received a reply stating that the laboratory at the British Museum had made no measurements on material from the tomb of Tutankhamun.

Astronomical Dating Methods

The conventional chronology of ancient Egypt depends upon several very crucial dates determined by astronomical methods. The earliest of these dates is 1872 B.C., the seventh year of Sesostris III, fifth ruler of the 12th dynasty in the Middle Kingdom. This date allows historians to calculate the reigns of all other 12th dynasty rulers and to establish the date of the end of the dynasty and of the Middle Kingdom (1786 B.C.) This latter date is crucial and the famous Egyptologist Sir Alan Gardiner admitted that, "to abandon 1786 B.C. as the year when dynasty 12 ended would be to cast adrift from our only firm anchor."⁵ But this is exactly what Velikovsky, Courville, and others have done by showing that many of the assumptions of the astronomical dating methods are invalid.^{6,7} The dates of Tuthmosis III of the 18th dynasty and Seti I of the 19th dynasty are also determined by these astronomical methods. None of the dates fixed by these methods have been retained in the revised chronology.

Pre-Historic Man

We have already seen that according to Courville's revision, civilization began in Egypt around 2150 B.C. and developed in Mesopotamia at a time somewhat earlier than that. This much is compatible with the date of the Flood (2519 B.C.) as calculated from Old Testament chronological data. But what about pre-historic man? Table V (CRSQ 22:38) shows the conventional dates for the pre-historic ages of man in Palestine. These dates vary slightly from source to source; for example, two books recently checked dated the beginning of the Mesolithic period at 9000 B.C. and 8000 B.C. respectively. Some have dated the end of the Paleolithic at 32,000 B.C. or earlier.

The reader will notice that the further back in time that we go, the longer these pre-historic ages are in duration. Although a full discussion of the antiquity of pre-historic man is beyond the scope of this article, we would like to make three brief suggestions regarding the lengths of these ages:

- (1) The acceptance of the long duration of these pre-historic ages is due in part to C-14 dating. It is during these periods, immediately after the Flood, that we would expect the C-14 dates to show the greatest inflation. Although the problem of C-14 dating is very complex with many factors being in-

volved, creationists generally agree that the Flood greatly upset the equilibrium of the C-14/C-12 ratio in the atmosphere and that a return to the vicinity of a new equilibrium may have required hundreds of years. Thus, the inflation of the C-14 dates would be the greatest immediately after the Flood and then gradually taper off.

- (2) I do not think that the C-14 data are entirely responsible for the acceptance of these very long pre-historic ages. In part it is due to an evolutionary bias concerning pre-historic man. It is assumed without proof that the beings who lived during these ages were in the development stage somewhere between ape-man and modern man. Once this evolutionary presupposition is granted, it is only very natural to conclude that it would take these pre-historic beings thousands of years to develop the tool-making and pottery-making industries that characterize these levels. But if these pre-historic beings were the direct descendents of Noah and his sons, then cultural recovery and restoration could begin immediately and there would be nothing to prevent the tool, weapon, and pottery-making industries from progressing rapidly.
- (3) Finally, the thicknesses of these pre-historic occupational levels do not point to the very long periods of time that are customarily assigned to them (see Table V, CRSQ 22:38). Rather, the opposite is true; when compared to later periods, the thicknesses of the pre-historic levels suggest that they are rather brief relative to the evolutionary time scale that is normally imposed on them.

Whether the entire stone age can be accommodated within the period from the Flood (c. 2500 B.C.) to the beginning of civilization (c. 2200 B.C.) is a question that is beyond the scope of this work and deserves considerable study. A number of factors would have to be considered including the possibility that during the period immediately following the Flood, the physical environment was such that the accumulation of occupational levels was somewhat (but not drastically) accelerated.

Many creationists may want to leave open the question of whether there are gaps in the genealogical records of Genesis 11. If this were the case, there would be no difficulty in fitting the pre-historic ages into the interval between the Flood and the beginning of human civilization. Courville (who does not allow for such gaps) has argued that the Flood occurred at

the end of the Paleolithic age which would alleviate the problem considerably, but this solution may not be acceptable to many who regard the Flood as having laid down the vast majority of the geological strata.⁸

Conclusion

During the course of the last 100 years, there has been a steadily accumulating mass of historical and scientific data that has resulted in the progressive lowering of the date associated with the beginning of human civilization. If we accept the general thrust of the historical revision that has been initiated by the work of Velikovsky, Courville and Bimson (as does this writer), then this trend has continued right up to the present.

These same writers have also shown that the C-14 method and the astronomical methods of dating do not support the conventional history of ancient man as is commonly advertised.

The result of these developments is that there no longer appears to be any problem at all regarding the antiquity of human civilization conflicting with the Biblical record of the Flood and the chronology implied by Genesis 11. The historical revision that is now being formulated, especially in the work of Courville, suggests that several centuries elapsed between the Flood and the beginning of civilization.

If we do not allow for gaps in the genealogies of Genesis 11, there may remain a problem regarding the length of the pre-historic ages. That is a question which merits further investigation. But we can safely conclude that the claim made by A. D. White almost 90 years ago, that the antiquity of human civilization proves the Biblical chronology to be impossibly short, is no longer valid.

References

1. Letters. 1973. *Ash Pensee* 4(1):5-19.
2. Johnston, J. O. D. 1973. The problems of radiocarbon dating. *Palestine Exploration Quarterly* 105, p. 13.
3. Lee, Robert E. 1982. Radiocarbon: ages in error. *Creation Research Society Quarterly* 19:117.
4. Letters. *Op. cit.*, p. 14.
5. Gardiner, Sir Alan. 1961. *Egypt of the Pharaohs*. Oxford University Press, London, p. 148.
6. Velikovsky, I. 1977. Special supplement astronomy and chronology in peoples of the sea. Doubleday Garden City, NY.
7. Courville, D. A. 1971. The Exodus problem and its ramifications (Volume 4) Challenge Books. Loma Linda, CA. Chapter 4.
8. *Ibid.*, p. 153.

QUOTE

In some very sad sense, which is very human indeed, science is a very human enterprise. Among other things, science is mercilessly competitive. Science does have its tough entrepreneurs no less than does any branch of business. Stories, such as the story of the double helix, have amply revealed the fierce pursuit of prizes which go only to the very first and never to the best second, let alone to the second best. Enough is also reported through newspapers about the keen competition for research grants, for the funding of new equipment, for new laboratories and institutions—a competition which at times mobilizes the public opinion of entire states and even wider regions. Teams of anthropologists stake out claims for elusive distant valleys with no less rush and jealousy than was the case a hundred years ago with homesteaders and somewhat earlier with gold diggers in California.

Jaki, Stanley L. 1984. God and man's science: a view of Creation in Morris, Lynne, editor. *The Christian vision: man in society*. The Hillsdale College Press. Hillsdale, MI, p. 36.