

ANNIVERSARY SYMPOSIUM

John A. Brinkman**Chronologies of the Near East,
3500–2000 B.C.: The Sixtieth
Anniversary Symposium of the
Oriental Institute**

A symposium on fourth and third millennium chronology was held on October 23–25, 1979 to mark the sixtieth anniversary of the Oriental Institute. For archeologists and historians concerned with the origins of civilization in the Near East, the period from 3500 to 2000 B.C. is of particular interest because the beginnings of urbanism, the growth of irrigation agriculture, and the rise of the first dynasties in Egypt and Mesopotamia took place at this time. As scholars try to understand these processes, reliable dates are needed to place developments in historical perspective. In recent years, archeologists and philologists have been vigorously pursuing their own research goals, not always aware that the conclusions reached in their separate disciplines were becoming more and more opposed. The symposium brought archeologists and textual scholars together to compare their evidence and to assess chances for reaching mutually acceptable conclusions.

On the evening preceding the symposium, Professor Colin Renfrew lectured on the subject "Ex Oriente Lux? Europe and the Near East in Late Prehistoric Times." Until a few years ago, it was often assumed that many major inventions of late prehistoric times originated in the Near East and then spread by diffusion through Europe. Refinements in dating techniques, especially recalibrated radiocarbon (carbon-14), now show that many of the stone monuments of Europe antedate their supposed Near Eastern forerunners by as much as one or two millennia. In addition, many archeologists are no longer much concerned with questions of chronological priority; it is not considered relevant to ask "Who did it earlier?" or "Where did it start?" At the moment, it is more pertinent to ask *how* something began or what processes gave rise to innovation and—even more crucial—what fac-

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tors in a society led it to adopt the innovation. Although the Near East is still the paradigm for the urban revolution, it is no longer considered to be alone in contributing to the rise of civilization in late prehistoric times. The focus of research in the immediate future is more likely to be on processual concerns than on chronological priority.

Mr. James Mellaart opened the formal sessions of the symposium by presenting a paper entitled "Egyptian and Near Eastern Chronology: A Dilemma." He accepted two current methods of dating, by carbon-14 and by textual evidence, but noted that he did not attach much importance to astronomical dating (either Sothic observations or the Venus tablets). He therefore proposed results obtained from a combination of the two methods, by utilizing the C-14 dates for establishing absolute chronology and by employing historical documents (such as the Turin papyrus) for estimating relative lengths of time. It was his belief that the duration of the Middle Kingdom and the Second Intermediate Period in Egypt has been unduly compressed. Working back from an arbitrary date of 1567 B.C. assigned for the beginning of Dynasty XVIII, he offered the following dates for the beginning of other dynasties: ca. 2155 B.C. for Dynasty XII (as opposed to the commonly accepted 1991), 2570 for Dynasty VI, 2850 for Dynasty IV, and 3400 for Dynasty I. Similar methods applied in Mesopotamia yielded the following dates: 3400–3100 for Uruk III/Jemdet Nasr, 3100–2470 for the Early Dynastic periods, 2470–2300 for the Akkad Dynasty, 2250–2143 for the Ur III period, ca. 1738 for the sack of Babylon by the Hittites; these dates would totally rule out the now accepted middle chronology and raise even the high chronology by several decades.

In the question session, Professors Güterbock and Rowton expressed doubts about the advisability of basing so drastic an absolute shift on C-14 results, since their interpretation had already fluctuated several times because of changes in calibration. Dr. Fleming asked why one could not accept the middle chronology for the third millennium. Professor Parker questioned the gratuitous rejection of astronomical data and defended the reliability of the Sesostriis III date in Egypt; he noted that astronomy is much more exact than radiocarbon. Professor Robert Adams stated that, on the basis of ceramic studies, the Uruk period in Mesopotamia seems to extend over a good many centuries, perhaps reaching back to the beginning of the fourth millennium B.C.; the principal impact of C-14 on the Near East may be to provide many more synchronisms between its various regions. Professor Renfrew noted that one of the greatest desiderata was the

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establishing of real contacts between prehistoric Europe and the Near East, preferably in the form of one or two objects actually imported from one area into the other. Mr. John Livingood stressed the need for archeologists to specify *whose* C-14 half-life they were following and *whose* calibration curve they were using; he noted also that C-14 dates indicated only when an animal or tree had died, not when it was used. Professor Baer suggested that, with the present discrepancies between conclusions from C-14 and from textual evidence, both sides should carefully reexamine their premises (as both had been wrong on previous occasions). Professor Butzer pointed out that conflicts between C-14 and textual data were not necessarily irreconcilable and one should be especially careful in determining the date of the use of the wood analyzed.

Dr. Stuart Fleming presented a paper on scientific dating techniques and their relevance for Near Eastern archeology. He dealt in detail with thermoluminescence (for inorganic ceramics) and carbon-14 dating (for organic material) and with margins of error both for the techniques and for the individual laboratories. He discussed the necessary recalibration of carbon-14 dates because of varying rates of injection of C-14 into the atmosphere, with particular attention to the ambiguities of the calibration curve ca. 2200 B.C. Fleming stressed that C-14 dates can be especially useful if three conditions are rigorously fulfilled: (1) the organic sample is contemporary with the event being studied, (2) the sample is without contamination, and (3) the sample is not placed along an ambiguous portion of the calibration curve. Despite the presently limited effectiveness of scientific dating techniques, especially as applied to third-millennium Egypt, one may look forward to considerable improvement in this area over the coming decade.

Professor Peter Ian Kuniholm spoke on dendrochronology and his work in establishing a tree-ring dating sequence for Anatolia. He sketched the history of dendrochronology, beginning with researchers in northern Arizona who painstakingly built up a tree-ring chronology stretching from the present back over many centuries through the time of the early Indian cliff- and pueblo-dwellers. He then described his own efforts on the Anatolian plateau. Working for the most part from living trees, he has already constructed a tree-ring sequence reaching back to 1296 A.D. From there, he hopes to continue—especially by means of timber samples from mosques, churches, and archeological remains—to extend his sequence back into antiquity. From the site of Gordion, he now has a master curve of rings that is 806 years long; but the sequence has not yet been linked up with an

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absolute date. Samples of much shorter earlier sequences have been obtained from Acemhöyük, Kanesh, and other sites; and it is hoped that these and other ancient samples may eventually be linked up in a long continuum reaching from the present back into prehistoric times and furnishing absolute dates with a minimum margin of error.

In the following question session, Mr. Peter Daniels asked whether the tree-ring sequence from Anatolia may eventually help to date wood samples from Palestine and Mesopotamia. Professor Kuniholm answered in the negative, explaining that cross-dating is to be expected only in similar climatic zones, where growth rings in trees would be about the same. Professor Wenté inquired about the accuracy in measuring individual rings. Professor Kuniholm said that his measuring apparatus, applied to specimens under a fixed microscope, was accurate within .01 millimeter. Mr. Daniels inquired whether any comparisons had been made between observed tree growth and weather records. Professor Kuniholm indicated that such a study was currently under way in Cyprus. Mr. Livingood asked about the effect on tree-ring growth of a year with two wet seasons or a year with no wet season. Professor Kuniholm said that such phenomena would confuse the tree ring picture but that the Anatolian plateau has a relatively moderate climate, generally without fluctuations of this type; occasionally, in bad years, a ring does not go all the way around a tree, but this can be detected by boring several samples around the circumference of each tree.

Professor Klaus Baer reached the following conclusions in his paper on the chronology of the Old Kingdom in Egypt. The Ramesside king lists are demonstrably unreliable, especially the lengths of reign in the Turin Canon, and should not be used as a basis for chronological reconstruction. Contemporary Old Kingdom sources (dated inscriptions and graffiti, administrative documents, biographical texts, and the Annals) are sufficient to establish a chronology for Dynasties IV-VI. The sequence of kings in general remains unchanged, but one hitherto unsuspected king Wehemka is inserted between Menkaura and Shepseskaf. The lengths of reign differ substantially in detail from figures one would find in standard works such as the revised *Cambridge Ancient History*, although the overall picture is not too different. Absolute dates for the Old Kingdom can be determined by: (a) comparing the dates of quarrying expeditions in Dynasty VI with those of the Middle Kingdom, which gives an indication of the extent to which the calendar (namely a year of 365 days without intercalation) shifted; and (b) looking at the sequence of nomarchs in the Cop-tite Nome, which can be linked both with the kings of the late Old

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Kingdom and with Dynasty XI. These two methods permit an estimate of about 100 years between the end of the Old Kingdom and the beginning of Dynasty XI, somewhat longer than the estimates currently in fashion. Sample dates obtained were: Snefru (2680–2640), Userkaf (2544–2532), Unis (2428–2407), and Pepi II (2350–2260).

In the following discussion, Professor Brinkman noted that the Old Kingdom dates were based ultimately on dead-reckoning from the Middle Kingdom astronomical data; so the accuracy of these data (and their interpretation) is particularly important. Professor Parker commented on the Middle Kingdom astronomical evidence, which is based principally on a single text that does not contain a royal name (the name must be inferred—but the overall picture is reinforced by lunar dates). Parker stated that he had complete confidence that the text referred to Sesostriis III and to a specific year of the reign. Brinkman observed that the calculation of fixed chronological points for both Mesopotamia and Egypt in this period relied heavily in each case on a single document concerned with astronomical data, and the interpretation of the documents seemed open to discussion. Professor Edzard speculated on the origin of the custom of giving year names (known from both Egypt and Mesopotamia) and called attention to the fact that the same institution is now attested at Ebla. Professor Renfrew asked whether average throne tenure could help to calculate Old Kingdom dates; Professor Baer noted that the method would be better for fixing an upper rather than a lower limit for such dates.

Professor Edzard discussed Mesopotamian chronology for the period 3500–1600 B.C. He noted that he was beginning his reconstruction with an arbitrary assumption—not to be interpreted as endorsing the Middle Chronology—that the last year of Samsu-ditana of Babylon was 1595 B.C. He then showed a fixed block of dates established for these dynasties: Babylon I (1894–1595), Larsa (2025–1763), Isin I (2017–1795), Ur III (2112–2004). The Gutian period broke the chain, and it was difficult to place chronologically. The preceding dynasty of Agade was of undetermined length, although a figure of 181 years was possibly correct. For earlier times, most archives could be placed in relative sequence; but there were no reliable absolute dating methods for the Fara and Abu Salabikh tablets, the archaic documents from Ur, and the early Jemdet Nasr and Uruk texts. He stressed the importance of hierarchical ordering of chronological criteria: dated tablets in archives, year-name lists, king lists, synchronisms, genealogy, historiography–paleography–stratigraphy (the last three not strictly ranked among themselves).

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A lengthy discussion followed. Professor Rowton made several points: (1) all radiocarbon dates, viewed from a historical perspective, are too high (because it is difficult to estimate how long a period elapsed between the death of a tree and the final use of its timber); (2) in line with Mr. Mellaart's new carbon-14 dates, 1630 B.C. \pm 100 years would seem to be the best figure for the end of the Hammurabi dynasty, which could be made to agree with the Ammisaduqa Venus dates; (3) the high chronology, with Hammurabi dated to 1848–1806, has always been a possibility and an average for the fall of Babylon of 1627 B.C. \pm 32 years is the closest corresponding result that may be derived from the upper alternative for the Venus dates. Dr. Whiting raised the possibility that absolute dates might eventually be calculated for the Ur III period on the basis of texts from Umma, which preserve a sequence of 29- and 30-day months based on lunar observation. Professor Jacobsen referred to the poor condition of the Venus tablets and the Sumerian King List; he now considered that he had greatly overestimated the chronological usefulness of SKL in his edition of the text (*Assyriological Studies*, vol. 11). Professor Brinkman pointed out two chronological difficulties that require greater attention. First, when one calculates the end of the First Dynasty of Babylon by dead reckoning from the well-established archival dates of the Middle Babylonian period, the results favor the low chronology (with the fall of Babylon in 1531), which disagrees with almost all other evidence presented here; is the dead reckoning method, here and for Old Kingdom Egypt, particularly likely to yield low results? Second, the textual corruption in the Venus texts necessitates significant emendation before the first eight years of Ammisaduqa's reign can be identified: 56- or 64-year cycles for the astronomical phenomena may not be required—smaller intervals may suffice—so that the conventional high, middle, and low chronologies may be an outmoded framework for discussion within a wider range of possibilities; and one must consider, if the astronomical data are successfully challenged, by what means the Old Babylonian dates are to be newly anchored. Mr. Mellaart noted that around the end of the Old Babylonian period dynastic disruptions seem to have been occurring throughout the Near East, including Egypt and Syria.

Professor Stager presented a paper on the chronology of Syria-Palestine, concentrating largely on the shift from Early Bronze age (EB) I to EB II. He argued that the major problem in this time is one of poor periodization: the EB IC period, recently introduced by

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Palestinian archeologists, must be eliminated. The close connection in Egypt between Dynasties 0 and I and the stratigraphy in Palestine at sites such as Gezer, Bab edh-Dhra, and Arad (where the beginning of EB II follows immediately after EB IB) demonstrate that this periodization not only is unnecessary, but obscures the short time-interval (perhaps only two or three generations) for the shift from people living in caves (e.g., at Arad) to populations dwelling in walled settlements—the time for the beginning of urbanization. In contrast to Mr. Mellaart's position, Stager would date the beginning of both Egyptian Dynasty I and Palestinian EB II to approximately 3100 B.C. He also placed a *terminus ante quem* of about 2250 B.C. (time of Pepi II) for the end of the Ebla archives.

A short question session followed. Mr. Livingood asked which C-14 half-life figure was used as a basic of Professor Stager's data. Response: 5730 years (MASCA corrected). Professors Biggs and Brinkman commented on the significance of Ebla, since it may eventually offer connections with datable periods in both Egypt and Mesopotamia and furnish links between the two major civilizations of the age.

The symposium provided a hard look at the current state of chronology for the Near East for 3500–2000 B.C. Archeologists and philologists became more aware of lacunas and defects in the evidence on both sides. It was equally plain that neither archeologists nor philologists always agreed in the interpretation of their own data; among the more glaring examples were the archeological papers which placed the beginning of Dynasty I in Egypt in 3400 B.C. or in 3100 B.C. and the textual discussants who tried to save the validity of the Venus observation tablets by opting for a higher chronology or those who questioned whether such corrupt late texts should be allowed to serve as the prime anchor for Mesopotamian absolute chronology before 1600 B.C. No solutions or even working compromises were reached; but the participants adjourned with a sense of much work to be done on all sides, especially in the careful collection of additional evidence and in the even-handed evaluation of difficulties and drawbacks in current methodologies, including carbon-14 and inferences from not always conclusive astronomical records.

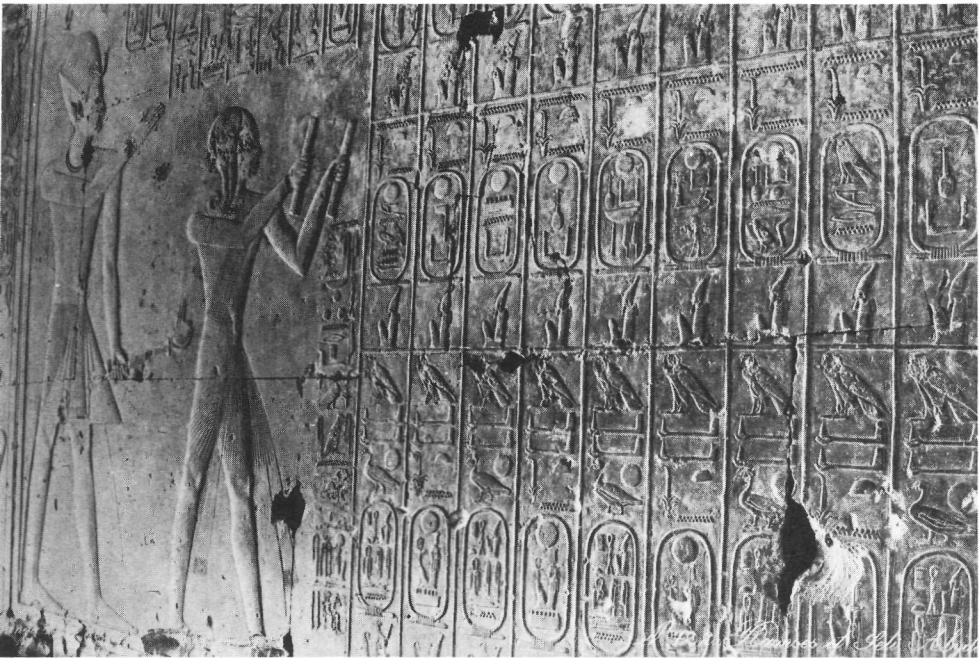
Symposium Participants and Discussants Cited Above

Prof. Robert McC. Adams, Oriental Institute

Prof. Klaus Baer, Oriental Institute

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Prof. Robert D. Biggs, Oriental Institute
 Prof. John A. Brinkman, Oriental Institute
 Prof. Karl W. Butzer, Oriental Institute
 Mr. Peter T. Daniels, Univ. of Chicago
 Prof. Dietz Otto Edzard, Univ. of Munich
 Dr. Stuart Fleming, Univ. of Pennsylvania
 Prof. Hans G. Güterbock, Oriental Institute (emeritus)
 Prof. Thorkild Jacobsen, Harvard Univ. (emeritus)
 Prof. Peter Ian Kuniholm, Cornell Univ.
 Dr. John Livingood, Argonne Laboratory (retired)
 Mr. James Mellaart, Univ. of London
 Prof. Richard A. Parker, Brown Univ. (emeritus)
 Prof. Colin Renfrew, Univ. of Southampton
 Prof. Michael B. Rowton, Oriental Institute (emeritus)
 Prof. Lawrence E. Stager, Oriental Institute
 Prof. Edward F. Wente, Oriental Institute
 Dr. Robert M. Whiting, Oriental Institute



A relief from a corridor of the temple of Seti I, depicting Seti and his son Ramesses, slightly larger than life size, with the cartouches of their predecessors from Menes on (covering about 3100 to about 1285 B.C.): this kinglist was among the data studied by Professor Baer (photo by Zangaki)