the chronology of ancient Egypt. The remaining eight articles survey Egyptian history from the prehistoric period to the Greco-Roman period.

CHRONOLOGY

This article attempts to survey the available sources used for reconstructing the chronology of ancient Egypt, and provides a construct for dating the major periods of Egyptian history.

A. Sources for Egyptian Chronology

The ancient Egyptians had no single, continuous era for reckoning the passing of the years, such as our modern use of years counted B.C. and A.D. Instead, for most of their history, the ancient Egyptians dated events and documents by the years of the reigns of their successive kings, the "pharaohs." This system had its origins in the Archaic Period (1st–2d Dynasties), when years were named after important events. Then the habit was established of counting years by "Year of the 1st Cattle-census" of a reign, followed by the "Year *after* the 1st Cattle-census," then the "Year of the 2d Cattle-census" the year after it, and so on (census-years alternating with "after-census" years) through a given king's reign. The whole process began anew with each succeeding king. Eventually, in the later Old Kingdom (later 3d millennium B.C.), this alternating year-numbering gave way to a continuous year-count, e.g., Year 1, Year 2, Year 3, etc., as mentioned above. (On Egyptian reckoning of regnal years, see Gardiner 1945.)

Unfortunately, we do not possess today an ideal, straight, unbroken line of kings' reigns and their lengths in years that would enable us to convert Egyptian years instantly into years B.C. For many kings, we do not know the exact length of the reigns. During the three Intermediate periods in ancient Egyptian history, two or more lines of kings reigned side by side in different parts of Egypt. Therefore, our ancient Egyptian chronology has to be established (and not yet precisely) by making use of a variety of sources. These include ancient lists of kings, sometimes giving their supposed lengths of reign; genealogies giving sequences of people and rulers; original documents citing regnal years of kings, and archaeological evidence; synchronisms between Egyptian and independently dated foreign rulers; and astronomical calculations based on phenomena of the sun, moon, or stars mentioned in ancient texts.

1. Lists of Kings. The seemingly oldest such monument is known to us only from some fragments of an upright slab, the largest being the so-called Palermo Stone (after the town-museum where it resides). When complete, this slab was originally inscribed on both front and back with a series of horizontal registers. Each register was marked off into rectangles, one per year of a king's reign, and each year space was compactly inscribed with a note of events considered important by the ancients. On the front, the top register gave not years but the names of "prehistoric" kings. This monument originally gave the full series of regnal years of all the kings from Menes and the first historic dynasty down to the 5th Dyn. to King Neferirkare or even later (see Helck, *LA:* 652–54; Redford 1986: 87–90, 135–36). Intact, the Palermo Stone would have been invaluable; but the mere fragments that do survive are not enough on which to base a reconstruction that can be generally accepted.

Leaving aside other minor pieces (on which see Redford 1986: 24–29, 34–64), the next equivalent of a king list is the Table of Kings originally inscribed in the Karnak temple at Thebes under Thutmose III in the 15th century B.C. (see Redford 1986: 29–34, 176–78). However, its "display" of bygone monarchs in balancing groups is not very helpful to modern chronologers.

More important are the series of kings named in three monumental king lists of the 19th Dyn. (13th century B.C.). Two are mutual duplicates, inscribed under Seti I and Rameses II in their great temples at Abydos. The other, quite similar, was included in the tomb chapel of the official Tjunuroy at Saqqara. While Tjunuroy omits the first few kings (Redford 1986: 23), these lists are excerpts from a longer tradition, giving the names (in order) of the main kings of the Old, Middle, and New Kingdoms (OK, MK, NK; ca. 3000–1250 B.C.). All exclude the female pharaoh Hatshepsut and the Amarna "heresy" kings (disapproved of by later rulers), but the Abydos lists include the Memphite kings who followed the 6th Dyn. (for texts see *KRI* 1: 177–79; *KRI* 2: 539–41; *KRI* 3: 181–82; latest discussion in Redford 1986: 18–24). So far as they go, these selective lists agree both with the evidence of first-hand documents and with the canon of kings transmitted to us by the Turin Papyrus and (a millennium later) in Manetho's work. The three lists from Abydos and Saqqara are in fact offering lists that formed part of the royal cult; nevertheless, they must derive from real, fuller king lists, simply omitting names and numerical data not needed in the limited space available.

A document of far greater extent and importance is a badly damaged papyrus in the Turin Egyptian Museum, known as the Turin Canon of Kings (text in Gardiner 1959; *KRI* 2: 827–44; for hieratic, see plates in Farina 1938). This is an informal copy, made on the reverse of an old tax register of the time of Rameses II. It gives a long list of kings: dynasties of gods and spirits, then historical kings from Menes down to the 17th Dyn., so far as preserved; originally it may have included the 18th and early 19th Dyn., perhaps to Rameses II himself. Regnal years are given for all rulers named (with life spans for early kings), including also months and days for reigns of the

12th Dyn. onward. Comparison of the canon's data with firsthand contemporary evidence indicates that its order of kings (within each dynasty or group) is mostly reliable, but not faultless. Some names have been corrupted by previous recopying, and likewise various figures (but not all). It is an unofficial and imperfect witness to a well-established historical tradition (see discussion in Málek 1982a; von Beckerath 1984; Redford 1986: 2–18, 197–201, contrast p. 5 top with p. 197, n. 238 end), but nevertheless constitutes a clear forerunner to the lists compiled by Manetho a millennium later.

In the transition from the late Persian to the early Ptolemaic period in Egypt (roughly 320 B.C.), we have the so-called Demotic Chronicle (for translations, see Spiegelberg 1914; Bresciani 1969: 551–60). In reality, this is an oracular work with commentary. It names (in order) the kings of the 28th–30th Dyn., differing slightly from Manetho for the order of the 29th Dyn. (cf. Johnson 1974; Ray 1986). See also DEMOTIC CHRONICLE.

Finally, there is the *Aegyptiaka* or "Egyptian History" by Manetho (an Egyptian priest of the 3d century B.C.), written in Greek under Ptolemy II. This work embodied in its narrative various series of kings and reigns. These are grouped in "Dynasties" or families (real or otherwise), with summaries of years of each dynasty, and of longer periods of several dynasties. Except for a few citations in Josephus (1st century A.D.), Manetho's original work is now lost. But at an early date, a basic list of the kings, dynasties, and periodic summaries had been gathered into an *Epitome*. This summary "king list" survives in three versions: in the writings of Africanus (3d century A.D.); Eusebius (4th century A.D.); and George the Syncellus (about 800 A.D.). The Greek text/Latin version with facing English translations is conveniently available in Waddell (1940), along with other Manethonic fragments and pseudo-Manethonic "lists." Even today, the 30 Dynasties given by Manetho are still retained because they provide convenient groupings of Egyptian rulers for historical purposes. However, the names and figures in the *Epitome* have clearly suffered considerable (if uneven) corruption in the course of centuries of repeated hand-copying, and sometimes at the hands of would-be manipulators of ancient chronology. This is clear from the variant names and numbers evident in Africanus, Eusebius, the Syncellus, and Josephus, when compared with firsthand older Egyptian sources, especially from the reigns of individual kings. Thus, Manetho provides only an outline framework; in detail, his data have to be used critically in conjunction with older and original sources.

2. Genealogies Mentioning Kings. There are two types of genealogy: "unitary" and "synthetic." "Unitary" describes an entire genealogy derived from one single monument or document. "Synthetic" denotes genealogies built up by combining data from several different sources. Dating from the Late Period, the most striking "unitary" genealogy is that preserved on the tomb relief Berlin 23673 (see Borchardt 1935: 96–112, pls. 2–2a), which provides a sequence of 60 generations extending back from the priest Ankhefen-Sekhmet, who flourished ca. 750 B.C. under Shoshenq V. Going back through time, beginning with the 11th generation before himself, this man included the cartouches of kings (supposedly contemporaries of various ancestors) alongside the names of at least 26 of the 49 generations from the 11th back to the 60th. While a few anomalies occur (see Kitchen 1986: 187–90, 560), the overall span of kings and generations compares well with results obtained from other evidence. For the 21st Dyn., the genealogy itself is confirmed by another monument that belonged to another branch of the same family (Louvre C.96; see Malinine, Posener, and Vercoutter 1968: 48–49, pl. 4, No. 52).

Under this head may also be mentioned the famous genealogy of Pasenhor from the Serapeum (from Year 37 of Shoshenq V, ca. 731 B.C.), which lists his forebears back to the 17th generation—the 8th down to 5th previous generations were the kings we know today as Shoshenq I (biblical Shishak) to Osorkon II of the 22d Dyn., the 17th to 9th ancestors being also those of Shoshenq I (for text, see Malinine, Posener, and Vercoutter 1968: 30–31, pl. 10, No. 31; discussion in Kitchen 1986: 105–6, 109–12).

"Synthetic" genealogies come closer to contemporary sources. Thus if three men, C, B, and A, each mention their contemporary king (Z, Y, and X), and C is son of B and grandson of A, then we have three generations A, B, and C, which in turn establish a basic parallel series of kings, X, Y, and Z, contained within a time span (biologically) of 60 years or so. Naturally, allowance must be made for kings who had ruled (if briefly) between X and Y, or Y and Z, but not mentioned by the sources concerned. This kind of evidence—combining the data from a group of documents—is especially useful in the Third Intermediate Period, ca. 1070–660 B.C. (see Kitchen 1986: 90, 106–9, 112, etc., particularly 187–239 passim), but applies also to all earlier periods, e.g., the mass of data concerning the royal workmen at Deir el-Medina in the New Kingdom (see, e.g., Bierbrier 1975).

3. Original Documents and Archaeological Evidence. Most valuable are the explicitly dated texts and monuments that bear the names and year dates of particular kings. Such datelines can confirm or correct the later record of the king lists. The range and sheer bulk of such data forbid any detailed list here.

Archaeological findings can add fresh dimensions to our historical understanding. For example, the recently documented growth of Memphis eastward during the NK (see Jeffreys 1985: 48 and passim) transforms our understanding of the history of Egypt's longest-serving capital city. It can also solve a puzzle in the narrative of Herodotus on Egypt, where two kings with the same name (Asychis) are confused as one (Kitchen 1988: 148–51). Proper historical sequence can also be verified archaeologically. For example, the fact that Shoshenq III cut up a great colossus of Rameses II to build his own main gateway at Tanis proves conclusively that the Ramesside kings preceded the 22d Dyn.

4. Synchronisms. The ancient Egyptians did not live in total isolation. By trade, or in war and peace, they had contacts with neighboring cultures and rulers. In the earliest periods, these linkups are archaeological and (in years) only approximate, not precise. Thus, links can be seen with Protoliterate Mesopotamia, as well as Early Bronze Age Palestine and Syria during the late Predynastic (prehistoric) period through the Archaic Period (1st and

2d Dyn.) into the OK (see Kantor 1965: 10–19 with references; Gophna in Rainey 1987: 13–21).

Later in the 3d millennium B.C., we have a link in the 6th Dyn. with the Syrian Early Bronze Age IV, provided by finds of stone vessels naming Khephren (Khafre) and Pepi I at Ebla (Scandone Matthiae 1979a: 33–43, figs 11–14).

In the early 2d millennium B.C., cross-links are still limited. The Tod treasure (a temple foundation-deposit) includes varied material from Western Asia; the cartouche of Amenemhet II provides an upper limit, but the actual date of deposit can be much later (Kemp and Merrilees 1980, Appendix II, correcting Kantor 1965: 19). Equally vague (in terms of cross-dating) is Minoan pottery in 13th-Dyn. (not 12th) deposits at Kahun. Turning to inscriptional data, it may be possible to link up Neferhotep I of the 13th Dyn., via Yantin(-Ammu) of Byblos, indirectly with Zimri-lim of Mari, who in turn was a contemporary of Hammurabi of Babylon. But a strictly fixed and agreed date is not yet available for Neferhotep or Hammurabi (Kitchen 1987a: 48; Franke 1988: 273–74).

During the NK (late 2d millennium B.C.), we have far more evidence. The great pharaohs of the 18th and 19th Dyn. engaged in war and diplomacy with the "great kings" of Hatti, Mitanni, Assyria, and Babylon, besides vassals in the Levant and important smaller states such as Ugarit. Given the high accuracy of Mesopotamian dates during the 10th to 5th centuries B.C., and the close limits (within a decade or so) for such dates back to ca. 1400 B.C., the Mesopotamian data are of value in helping to set limits for Hittite and Egyptian dates for the 14th and 13th centuries B.C.

In the 1st millennium B.C., close dating becomes better as time passes. During the 22d Dyn., from Soshenq I to Osorkon IV, occasional cross-links with the Hebrew kingdoms and Assyria complete and confirm the general dates obtainable by dead reckoning of reigns before the 25th Dyn. In turn, the 25th and 26th Dyn. were involved with Assyrian and Neo-Babylonian rulers, for most of whom we have very precise dates based on firsthand cuneiform sources. These dynasties and Egypt in the time of the Persian Empire and after are enmeshed by classical writers and chronographers with later classical history and chronology (from Herodotus onward) down to Roman times.

5. Astronomical Data. In the past, vigorous attempts have been made to fix ancient Egyptian dates more precisely by using astronomy to set dates for mentions of new moons or so-called "heliacal" risings of the Dog Star, Sothis, in ancient sources. But here, too, various uncertainties make it difficult to reach firm results.

The problem with records of observations of the new moon is that any particular rising in the Egyptian calendar will be repeated every 25 years precisely, in an unending cycle (Parker 1976: 180–81; 1957a). Thus, we need to know in advance (within half a century) the general date of a given mention. Usable lunar dates are found in the Lahun papyri of the late 12th Dyn., and in Year 52 of Rameses II, which can be utilized within a wider frame of dates established on other grounds. However, attempts to turn most Egyptian festival dates into lunar dates for chronological purposes (so Kraus 1985: 136–63) are premature and too theoretical to be of any use at present.

So-called Sothic dates operate on a far grander scale, based on the slight difference in length between the Egyptian civil calendar and the real solar calendar. The latter is (in practice) 365¼ days long. But it is not convenient to work with a quarter of a day. So, since every four years the four quarters add up to one whole day, we maintain a calendar of 365 days per year, but with a leap year of 366 days (the extra day) every four years. Consequently, our calendar stays basically in line with the year as expressed by the movements of sun and earth, and so with the seasons.

However, the ancient Egyptians did not operate as we do. Probably in the early 3d millennium B.C. (see Parker 1950: 53 and generally), the Egyptians instituted a calendar of 12 months of 30 days each, plus "5 days over the year"—a calendar of 365 days like ours (and the origin of ours). But they did not notice (or if known, did not bother with) the odd ¼-day by which their calendar was short. So, after four years (with *no* leap year), their fourth civil calendar year ended one day too soon, and the next year began a day too soon. After another four years, the 8th year ended 2 days too soon. As this process of every year finishing too early continued, each year's calendar months began earlier and earlier during the natural seasons of the solar year. At first, no one would notice this. After 120 years, the civil calendar year was beginning a whole month (30 days) ahead of the real solar year, and by the time that 700 years had passed, the civil calendar year would begin (and end) 6 months too soon; then, the "winter" months of this calendar would have crept forward into nature's summer season of the previous solar year! But as time passed, after a total of some 1460 years, the too-short civil year would have overtaken itself by one complete year of 365 days, and everything (like the seasons) would for the moment be in its right place again. This, of course, applies to all phenomena dated by the civil calendar. The ancient Egyptian New Year was supposed to coincide with the observed rise of the new Nile flood, i.e., in July—or, the coming of the "inundation" be dated to the 1st day of the 1st month of the 1st season, in calendar terms. But of course, after several hundred years, any such report of the rise of the Nile would be dated correspondingly to some later date in the civil calendar, because that too-short calendar had meantime been creeping forward as noted above.

The rise of the Nile was not the only event noticed in the July time of the year in Egypt. Quite by coincidence, the so-called "heliacal rising" of the Dog Star (Gk *Sothis*, from Egyptian *Sopdet*) also took place on the original July "New Year" of the civil calendar. (The heliacal rising of Sothis is defined as that day on which this star first becomes visible just before sunrise, after 70 days of invisibility, Parker 1950: 7.) Because of the behavior of Egypt's too-short civil calendar, some 1460 years have to elapse between one sighting of this heliacal rising of Sothis on the 1st day of the 1st month of the 1st season (New Year's Day) in the civil calendar and the next time this exact sighting could reoccur. This period of about 1460 years is therefore called a Sothic cycle. Fortunately, one such date point

is known: within the period 139–42 A.D. (Parker 1976: 182). Therefore, allowing for variations in the stellar motion of Sothis, it can be calculated that previous Sothic cycles would begin in 1313 B.C. and 2769 B.C., if observed at Memphis (see Parker 1976: 182, who uses astronomic notation).

Fixing the date of these cycles should (in theory) help us to date any reign of a pharaoh, if a heliacal rising of Sothis is found mentioned in a particular year of his rule on a specific date in the civil calendar—one only needs to know inside which cycle his reign falls. For example, if some king who belonged within the period 2700 to 1350 B.C. had a document dated to his Year 1, mentioning the rising of Sothis on the 6th day of the 4th month of the summer season (11th month in the year), it is clear that the civil calendar had crept forward 335 days since such a rising last happened on its New Year's Day. So, 4 × 335 years had elapsed since 2769 B.C., putting our theoretical king's accession (Year 1) at about 2769 minus (4 × 335) years B.C., or 2769 minus 1340 = 1429 B.C.

Alas, in practice things are not so simple. There are several complications. First, one must allow for a 4-year margin of error (before quarter days add up to one day, among other factors). Second, the geographical location of any reported Sothic sighting affects reckoning of the date. In practice, the further south the sighting, the later the date B.C. So, we need to know, for example, whether a report of Sothis was made in Memphis, Thebes, or Elephantine. Only two usable Sothic rising reports are known to us at present: one in Year 7 of Sesostris (Senwosret) II or III, and one in Year 9 of Amenhotep I. The former one may have been observed either in Memphis or Elephantine; there would be a roughly 30-year difference in date, depending on place of observation. The latter one would have been seen in either Thebes (source of the Ebers Papyrus bearing the datum) or Elephantine; the date difference is then only about 11 years. (For the suggestion of Elephantine as the point of observation for both risings, leading to ultra-low dates for both, see Krauss 1985; contrast Kitchen 1987a: 42–44, 47, where the corresponding options of observations made at Memphis and Thebes respectively are preferred.)

B. Constructing an Egyptian Chronology

In the light of the kinds of evidence and their various problems sketched above, the only proper way to build up a chronology for ancient Egypt is to begin at the end and work our way back from the well-fixed dates of the 26th Dyn. to Roman times, step by step, until we reach the beginnings, i.e., the 1st Dyn. and the prehistoric era beyond it. However, for the reader's convenience, the chronology will be presented here in its natural order from the beginning to end.

While the long line of 30 dynasties is still useful as a basic framework of kings, it has been found helpful in modern times to divide the dynasties into larger, more convenient historical periods, i.e., "kingdoms" and "intermediate periods"—the former being eras of power and political unity (one line of kings), and the latter periods of political disunity (with parallel lines of kings). The following brief table will summarize the position.

Predynastic Period prehistory
Archaic Period Dyn. 1–2 (Formative Age)
Old Kingdom Dyn. 3–8 ("Pyramid Age")
• *1st Intermediate Period* Dyn. 9–10 (partly contemporaneous with Dyn. 11)
Middle Kingdom Dyn. 11–12 (reunification, "Classical" Period)
• *2d Intermediate Period* Dyn. 13–17 (overlapping lines of kings)
New Kingdom Dyn. 18–20 ("Empire Period")
• *3d Intermediate Period* Dyn 21–25 (age of disunity)
Late Period proper Dyn. 26–"31" (Saite, Persian, and independence rulers)
Greco-Roman Period Ptolemies and the Romans

The dating of each period in this long history can now be reviewed.

1. Predynastic Period. Traditionally, prehistory in Egypt ends with the union of the two "predynastic" kingdoms Upper and Lower Egypt (Nile valley and delta, respectively) by "Menes" the Narmer of the monuments), founder of the first line (dynasty) of kings of all Egypt. This event can be set somewhere about 3000 B.C., so Egypt's prehistoric ages are earlier than that approximate date. For the three main successive cultural periods in Egypt's prehistory (Taso-Badarian, Naqada I and II), no precise dates can be assigned beyond locating them in the 4th millennium B.C. (For Carbon 14 dates for the Naqada I and II periods [4th millennium], see Hassan and Robinson 1987: 128, 127 end.)

2. Archaic Period. The contemporary monuments and later king lists agree on 8 kings for the 1st Dyn., but neither set of sources enables us to know the actual lengths of these 8 reigns. For the 2d Dyn., the Abydos list has 6 kings, the Saqqara list 8 kings, and the Turin Canon and Manetho each have 9 kings. From the firsthand monuments we have rulers corresponding to the first five kings in all the lists. At the Dynasty's end, Khasekhem and Khasekhemwy appear to be successive forms of the same name used by one king during his career; this gives us a 6th king. In the middle of this dynasty, problems arise. It is still uncertain whether Sekhemib Perenmat is the same individual as Peribsen, and whether either is Senedj of the later lists. Therefore, a minimum of 7 kings is likely. The Turin Canon's figures for the 2d Dyn. are incomplete and not yet verifiable; from the Palermo Stone fragments we have just the 20 years of king Nynetjer. Thus, no definite total is available for the 2d Dyn. either. Involving yet another theoretical reconstruction of the Palermo Stone, a computation made by Kaiser (1961) suggests about 300 years for the whole of this period (1st Dyn., ca. 160 years; 2d Dyn., ca. 140 years). Such a period may be dated to roughly 3000–2700 B.C., if we begin the OK at about 2700 B.C.

3. Old Kingdom. Our first problem in this period is that the alternation of years of cattle census and years after census (see above) was no longer maintained. Under Snofru, for example, the 7th cattle count was immediately followed by the 8th with no intervening year "after" the 7th (Gardiner 1945: 13–14). Thus, there is uncertainty as to how one should reckon many reigns—assuming the

usual scheme of alternating years of *x*th cattle count and that years after counts provide a total of years for a king's reign; this total well exceeds the corresponding figure for the reign found in the Turin Canon in a suspiciously high number of cases. Snofru was probably only one king of several who sometimes reckoned cattle-count years consecutively. Each reign has to be considered on its own merits.

The 3d Dyn. has 5 kings in the Turin Canon (two with 19 years each, two with 6 years each, and the last with 24 years similar to Snofru who follows). Even if these curiously paired figures are not all correct, they may at least indicate relatively long and short reigns. For example, Djoser Netjer-khet (given 19 years) did complete his pyramid complex, but Djoser-Teti Sekhemkhet (given 6 years) did not. So 70/80 years (74 in the Turin Canon) may not be far wrong for the 3d Dyn., within 2700–2600 B.C. at most.

For the 4th to 6th Dyn., similar detailed argumentation (using the incomplete data from original documents, the Palermo Stone, and later lists) enables us to suggest about 102 or 112 years for the 4th Dyn. (18 or 28 years for Menkaure), within roughly 2600–2500 B.C. Three apparent kings in Manetho (Bicheris, Hardjedef, and Thamphthis) are probably spurious and never actually reigned. In the 5th Dyn., we have an agreed 9 kings from Userkaf to Unis, and in the 6th Dyn. probably 7 rulers down to Nitocris/Netjerkare, if the enigmatic Userkare be included between Teti and Pepi I. In terms of years, the 5th Dyn. cannot have lasted much under 150 years (about 2500–2350 B.C.), and the 6th may be allowed about 160 years (say 2350–2190 B.C.), although the internal details remain difficult to sort out. (For example, Teti may have reigned 12 or 20 years; Pepi II reigned at least 63 years, but may have died at 100 after 94 years if the cattle counts are interpreted strictly and the Turin Canon and Manetho figures are accepted.)

The length of the 7th to 8th Dyn. (all one line in the Abydos and Turin lists) is unknown. The Turin Canon has only 6 rulers here (Abydos has 16) and is obviously incomplete. Therefore, its total of 187 (= 181 + 6) years for the 6th to 8th Dyn. is most likely too small. It would be wiser to allow about 30 years for the 16 kings of the 7th–8th Dyn., as reigns of 1, 2, and occasionally 4 years are given by our sources for some of these kings. This would set the 7th–8th Dyn. within about 2190–2160 B.C. on the scheme adopted here. During this general period, we have evidence from Dendera on the sequence of local provincial governors ("nomarchs"). These data indicate 2 (perhaps 3) nomarchs contemporary with the 7th–8th Dyn. and at least 2 more contemporary with the 9th–10th Dyn. before the emergence of the 11th (see Fischer 1968; cf. Kitchen 1972: 124–25). Such a series of four, five, or even six nomarchs as stable local dynasts would require a period of some 60 to 90 years (note also Hayes, *CAH*^{3} 1/1: 180–81), within (in this case) about 2190–2100 B.C.

4. First Intermediate Period. The last of the 7th/8th Dynasty kings at Memphis was replaced by a fresh line of rulers from Heracleopolis, the House of Khety of Egyptian sources, and the 9th/10th Dyn. of Manetho. The Turin Canon does not distinguish between two separate dynasties here, but has one group of 18 kings, just as it has one set of kings that correspond to Manetho's 7th and 8th Dyn. However, it is convenient here to reuse the term "9th Dyn." for the first few kings who ruled all Egypt, and the term "10th" for their immediate successors who lost Upper Egypt to the new 11th Dyn. in Thebes. For an initial four Heracleopolitan kings of all Egypt, we may guess at some 50/60 years, at about 2160–2100 B.C. on the scheme used here. The remaining Heracleopolitan rulers will have been short-lived contemporaries of the 11th Dyn., who were finally brought to an end by Nebehepetre Mentuhotep II of the 11th Dyn. The date of that triumph within his long reign is unknown; it probably falls at some point after his Year 14, but not later than Year 39, allowing for this king's changes of titles, reflecting his political fortunes. Generally, the reunion of Egypt by Mentuhotep II has been set at about Years 20–25 of his reign (Stock 1949: 80, 92, 99, 103; Hayes, *CAH*^{3} 1/1: 181). On the scheme used here, the ending of the 9th/10th Dyn. by Mentuhotep II would have fallen in about 2010 B.C.

5. Middle Kingdom. In Manetho, the 11th Dyn. is accorded 16 kings for 43 years, which is transparently corrupted from the Turin Canon's figure of 6 kings for 143 years—a realistic figure, in terms of the amounts that can be assigned to individual reigns. Hence, depending on the date used for the following 12th Dyn., the 11th can be set best at ca. 2106–1963 B.C., or at the very latest (according to Krauss 1985) ca. 2080–1937 B.C.

Until recently, the anchor for all the early Egyptian dating down to this point had been the 12th Dyn., set at 1991–1786 B.C., as classically established by Parker (1950: 63–69, 81–82), using the Sothis datum of Year 7 of an unnamed king (probably Sesostris III and not before Sesostris II [document from his temple's archive]) calculated to be 1872 B.C.

However, three factors have rather dragged this "anchor" from its usual moorings. First, reductions in the supposed lengths of reigns of Sesostris II and III. Sesostris II is not known to have reigned any more than 6 full years (rather than 19), while Sesostris III cannot be shown to have reigned beyond 19 full years—his Year 19 is followed by a Year 1 in the Lahun papyri, and officials from before his Year 19 are still in office in the reign of his successor Amenemhet III (less likely if Sesostris III had really reigned 36 years; see Simpson 1972: 52–54; *LA* 5: 900, 903–4; Krauss 1985: 194–95). As a result, even if we kept the date 1872 for the Sothic rising of Year 7, the limits of the 12th Dyn. would shrink to a theoretical 1978–1801 B.C.

Second, it has been questioned (see above) whether this rising of Sothis was observed in the region of Memphis, as is usually assumed. Krauss (1985) locates its observation far south at Elephantine. This would lower the date from 1872 to 1830 B.C., reducing the date of Sesostris III by 42 years. Combined with the reduced reign lengths noted above, the theory of Krauss (and it is *only* a theory!) would produce a new low date of 1937–1759 B.C. for the 12th Dyn. (Kitchen 1987a: 43; Krauss 1985: 207).

Third, all these changes have required a reevaluation of the lunar dates of the late 12th Dyn. and inclusion of new ones, a topic tackled at length by Krauss (1985: 15–35, 73–103). So the various possible dates for the lunar entries in the Lahun papyri have to be integrated with those for the Sothic datum, a matter of complexity.

Out of all this, we have for the Sothic date of Year 7 of

Sesostris III (rather than II) a possible date in 1831/1830 B.C. (if observed at Elephantine) or else a higher date in 1856/1855 B.C. if observed near Memphis (so Baer, based on, and courtesy of Krauss). Combined with the revised lunar dates, the accession of Amenemhet III came in 1818/1817 B.C. (Elephantine dating) or 1843/1842 B.C. (Memphis dating) (see Krauss 1985: 96). It should be noted that the Elephantine dating for the 12th Dyn. is only usable if one adopts a similarly low Elephantine dating for the Sothic datum of Amenophis I in the 18th Dyn. (see below; see Kitchen 1987a: 44–46, 47). The Memphis location for the 12th-Dyn. Sothic observation would date this Dyn. at 1963–1786 B.C.—the date used as the baseline for all dates in the preceding sections of this survey. This location and date agrees well with a Theban location (and consequent date) for the Sothic datum of Amenophis I.

6. Second Intermediate Period. The limits of this period (13th–17th Dyn.) are set by the end of the preceding 12th Dyn. and the beginning of the following 18th Dyn. On the higher dates for those two "framing" dynasties, this intermediate era can be assigned either 236 years (1786–1550 B.C.) or 220 years (1759–1539 B.C.) on the lower dates of Krauss. Since the Hyksos regime was not expelled until the 11th year of Ahmose I of the 18th Dyn. (cf. von Beckerath 1965: 210–11), this era in fact did not fully end until either 1540 or 1529 B.C.

This whole era is characterized by the existence of contemporary lines of kings. Essentially, the 15th (Hyksos) Dyn. ejected the ruling 13th Dyn. from *Ithet-tawy* and Memphis, confining its rule to Upper Egypt as a vassal. The 17th followed the 13th Dyn. in Thebes, still contemporary with the 15th in the north. The somewhat nebulous 14th and 16th Dyn. were little more than local Egyptian and Hyksos princelings in the delta, largely contemporary with the mainline 13th/17th and 15th Dyn. (For the respective lengths of the various dynasties, see von Beckerath 1965: 135–37; Kitchen 1987a: 50, 44–45; and Franke 1988.)

7. New Kingdom. Here, the key figures chronologically are Amenhotep (Amenophis) I and Thutmose III (18th Dyn.), and Rameses II (19th Dyn.). A rising of Sothis is recorded for Year 9 of Amenhotep I in Papyrus Ebers, a document found at Thebes. If the observation of Sothis was also made at Thebes, the most natural solution, then it would lead us to set the accession of Amenhotep I at 1525 B.C., and the beginning of the 18th Dyn. (and NK) with the accession of Ahmose I at ca. 1550 B.C. If, however, we follow the theory of Krauss that all Sothis observations were taken far south in Elephantine, then the 18th Dyn. would have begun 11 years later, in 1539 B.C. From the reign of Thutmose III we have a lunar date which would imply his accession to the throne in 1479 B.C., in line with a similar datum from the reign of Rameses II, favoring his accession in 1279 B.C., in conjunction (1) with synchronisms with other Near Eastern rulers and (2) with the lapse of generations linking the Rameside period to later epochs.

If the 18th Dyn. began in 1550 B.C., there is ample time for the reigns of Thutmose I and II in between those of Amenhotep I and Thutmose III. If, however, the dynasty began in 1539 B.C. (so Krauss 1985), then only 13 years are available for those two reigns—which is decidedly cramped and not realistic.

Between the reigns of Thutmose III of 54 years (1479–1425 B.C. and Rameses II of 66 years (1279–1213 B.C.), all the intervening reigns can be fitted in without any serious problems. Most lengths of reigns can be determined quite closely (Kitchen 1987a; 1989). Bones of contention include the possibility of a coregency between Amenhotep III and Akhenaten, which would require a longer reign for Amenhotep II; and whether or not Amenmesses of the 19th Dyn. had an independent reign (on the latter point, see Kitchen 1987b).

8. Third Intermediate Period. Dead reckoning from the beginning of the 26th Dyn. back to the accession of Shoshenq I, founder of the 22nd Dyn.—plus the use of synchronisms with Assyria and the Hebrew kingdoms—enables us to set the accession of Shoshenq I in (or close to) 945 B.C. The claim that the Egyptian dates of this period depend entirely on Hebrew/Assyrian dates is a false one; these merely refine dates now obtainable by dead reckoning of known consecutive reigns.

Before 945 B.C., we have the 21st Dyn. for which there is good agreement between original data on kings and their reigns and the data in Manetho; the total count comes to 124/125 years—certainly not more than the total of 130 years given in Manetho, a figure which cannot itself be justified at present (Kitchen 1986: 531–33). At any rate, the death of Rameses XI (the end of the NK) and the start of the 21st Dyn. can be reasonably set within ca. 1075/1069 B.C.

For the 22d (Libyan) Dyn., the main sequence of kings from Shoshenq I down to Osorkon IV is now clear and generally accepted. By dead reckoning of known reigns from a bottom date of 712 B.C. (by which time Osorkon IV disappears), and allowing the data that speak for a minimum reign of 33 years (probably 35 years) for Osorkon I and 14/15 years for Takelot I, the accession of Shoshenq I could *not* fall any later than ca. 930 B.C. However, two synchronisms at least require an earlier date. First, despite occasional suggestions to the contrary, the So of 2 Kgs 17:4 (whose help Hoshea of Israel sought in 725 B.C.) was a king, not a place (Sais deep in the west delta had no role in Levantine politics before the 7th century B.C.). Osorkon IV is the only serious candidate for identification with So (see data, references and discussion in Kitchen 1986: 372–75, 551, 583). This has the effect of raising the minimum accession date of Shoshenq I to ca. 940 B.C. He in turn invaded Palestine in the 5th year of Rehoboam, which is virtually certainly 926/925 B.C. (Hornung 1964: 28; Thiele 1983: 80, Table and passim; Kitchen 1986: 74–75). There are good reasons for dating Shoshenq's campaign to his last year or so, hence his 21-year reign will have begun in 945 B.C. or very soon after. The 23d and 24th Dyn. were wholly contemporary with the 22d and 25th Dyn. (details in Kitchen 1986).

The 25th Dynasty's last full ruler of Egypt, Taharqa, reigned 26 years (690–664 B.C.) just prior to the fixed accession year 664 B.C. for the 26th Dyn.; his successor Tanutamun was entirely a contemporary of the 26th Dyn. Of Taharqa's two main predecessors, the first—Shabako—reigned at least 14 years (perhaps 15), conquering Egypt in his 2d year. That event cannot be set later than 712 B.C.,

when Sargon II of Assyria had contact with a king of Egypt *and* Nubia (as Shabako was), or any earlier than 716 B.C., when Osorkon IV still ruled in the east delta as the (U)shilkanni of Sargon II. Depending on whether a totally hypothetical coregency of up to 2 years between Shabako and Shebitku is accepted (probably not; Kitchen 1986: 164–72, 555–57, 583), Shebitku must have reigned 10 or 12 years.

9. Late Period. The dates from the 26th Dynasty to the Roman period are, with very few exceptions, well fixed by Egyptian, Near-Eastern and classical sources, and require no consideration here.

Table of Dates

PREDYNASTIC PERIOD

c. 4000 B.C. Taso-Badarian period
c. 3700 B.C. Naqada I (Amratian) period—C-14, 3850–3650 B.C.
c. 3500–3000 B.C. Naqada II (Gerzean) period—C-14, 3400 ± 139 B.C.

Later in this period belong traces of such Upper Egyptian local kings as "Ka" (Sekhen?) and "Scorpion," also, Lower Egyptian rulers (West Delta?), of whom some 9 names are preserved on the Palermo Stone.

ARCHAIC PERIOD

1st Dynasty (ca. 3000–2840 B.C.)

	Horus	Eg. lists	Manetho
1.	Narmer	Meni	(Menes)
2.	Aha	(A)teti	(Athothis)
3.	Djer	Atet	(Kenkenes)
4.	Djet	Ite(r)ty	(Uenephes)
5.	Den/Udimu	Khasty/Semti	(Usaphais)
6.	Anedjib	Merpabia	(Miebis)
7.	Semerkhet	Irynetjer	(Semempses)
8.	Qa/Sen	Qebehu	(Bieneches)

2d Dynasty (ca. 2840–2700 B.C.)

	Horus	Mons.	Eg. lists	Manetho
1.	Hetep-sekhemwy	Hetep	Bedjau/Bauneter	(Boethos)
2.	Nebre	Nubnefer	Kakau	(Kaiechos)
3.	Nynetjer	Nynetjer	Baninetjer	(Binothris)
4.	—	Weneg	Wadjnes	(Tlas)
5a.	—		Senedi	(Sethenes)
			? same as:	
5b(6).	Sekhemib Perenmaṭ		Neferkare/Aka	(Chaires/Nephercheres)
			? same as:	
			Neferkasokar	(Sesochris)
5c(7).	Peribsen (= Seth)		"Hudjefa" [lacuna?]	—
6a(8).	Khasekhem, *prob. same as:*			
6b(9).	Khasekhemwy	Nebwy-hetep-imef	Bebti/ Djadjay	(Kheneres)

OLD KINGDOM

3d Dynasty (ca. 2700–2600 B.C.)

	Horus	Mons.	Eg. lists	Manetho
1.	Sanakht	Nebka I	Nebka	(Necherophes?)
2.	Netjerkhet	—	Djoser Sa/Ti	(Tosorthros)
3.	Sekhemkhet	Djoser-ty	Djoser- Te(ti)	(Tureis + Tosertasis)
4.	Khaba	—	Sedjes/ . . . djefa? Nebkare	(Mesochris + Aches)
5.	Qahedjet	Nebka II	Neferkare Huni	(Souphis + Sephuris)
	—	—	—	(Kerpheres)

4th Dynasty (ca. 2600–2500 B.C.)

1. Snofru (Soris)
2. Khufu (*Kheops; Suphis)
3. Redjedef (Ratoises, 5th)
4. Khafre (*Khephren; Suphis)
5. Menkaure (*Mycerinus; Mencheres) (Bicheris)
6. Shepseskaf (*[S]asychis; Sebercheres) (Thamphthis)

*= Herodotus

5th Dynasty (ca. 2500–2350 B.C.)

1. Userkaf
2. Sahure
3. Neferirkare I Kakai
4. Shepseskare Isi
5. Neferefre
6. Neuserre Ini
7. Menkauhor Ikauhor
8. Djedkare Isesi
9. Unis

6th Dynasty (ca. 2350–2190 B.C.)

1. Teti
2. Userkare
3. Meryre Pepi I
4. Merenre I Nemtyemsaf I
5. Neferkare Pepi II
6. Merenre II Nemtyemsaf II
7. Netjerkare Nitocris

7th–8th Dynasties (ca. 2190–2160 B.C.)

	Abydos	Turin	Abydos	(Turin omits)
1.	Menkare	—	7. Seneferka (Neferkamin) I	
2.	Neferkare	Neferka	8. Nekare	
3.	Neferkare Neby	Nefer, "child"	9. Neferkare Teruru	
4.	Djedkare Shema	—	10. Neferkahor	
5.	Neferkare Shema	—	11. Neferkare Pepisonb	
6.	Merenhor	—	12. Seneferka (Neferkamni) II ᶜAnu	
	13. Qa(?)ka(u)re	Ibi (Saqqara pyramid)—Ib (Turin)		
	14. Neferkaure	?Koptos: Kha(bau) Wadjkare (. . .)		
	15. Neferkauhor	Koptos: Netjerbau Neferkauhor (+ Turin)		
	16. Neferirkare II	?Koptos: Demdjibtawy (+ Turin)		

1ST INTERMEDIATE PERIOD

9th Dynasty (ca. 2160–2106 B.C.)

1. Meryibre Khety I
2. (. . .)
3. Neferkare ("Kaneferre")
4. (Nebkaure) Khety II

10th Dynasty (ca. 2106–2010 B.C.)

fourteen kings, few names preserved, but including at the end:
12. (Wahkare) Khety III
13. Merykare ("Kameryre")
14. (A last, ephemeral ruler?)

MIDDLE KINGDOM

11th Dynasty (ca. 2106–1963 B.C.)

B.C.	Horus	Prenomen	Name	Reign	
2106–(2100?):	"Ancestor" (Tepy-á)	—	Mentuhotep I	(6?)	16
(2100?)–2090:	Sehertawy	—	Intef I	(10?)	
2090–2041:	Wahᶜankh	—	Intef II	(49)	
2041–2033:	Nakhtnebtepnufer	—	Intef III	(8)	
2033–1982:	Seankhibtawy	—	Mentuhotep II	(51)	
	Netjerhedjet	Nebhapetre			
	Smatawy	Nebhepetre			
1982–1970:	Seankhtawyef	Seankhkare	Mentuhotep III	(12)	
1970–1963:	Nebtawy	Nebtawyre	Mentuhotep IV	(7)	

12th Dynasty (ca. 1963–1786 B.C.)

B.C.	King	Reign	(Krauss:)
1963–1934:	Amenemhet I	(29)	(1937–1908)
1943–1898:	Sesostris I	(45; 9 CR)	(1917–1872)
1901–1866:	Amenemhet II	(35; 3 CR)	(1875–1840)
1868–1862:	Sesostris II	(6; 2 CR)	(1842–1836)
1862–1843:	Sesostris III	(19)	(1836–1817)
	(Sothic date, Year 7: 1856–55)		(1830)
1843–1798:	Amenemhet III	(45, min.)	(1817–1772)
1798–1789:	Amenemhet IV	(9)	(1772–1763)
1789–1786:	Sobeknofru	(3)	(1763–1759)

2D INTERMEDIATE PERIOD

13th Dynasty (ca. 1786–1633 B.C.)

B.C.	Kings	Reigns	(Krauss:)
1786–1723:	first 21 kings	(63 years)	(1759–1696)
1723–1712:	Neferhotep I	(11)	(1696–1685)
1712:	Sihathor	(3 months)	(1685)
1712–1705:	Sobekhotep "IV"	(7)	(1685–1678)
1705–1701:	Sobekhotep "V"	(4)	(1678–1674)
1701–1691:	Iaib	(10)	(1674–1664)
1691–1668:	Merneferre Ay	(23)	(1664–1641)
1668–1633:	later kings	(35 years)	(1641–1606)

14th Dynasty

Either local Egyptian (West) delta kings, or "76 kings who reigned 184 years" in Xois (W. delta) with Manetho; 1786–1602 B.C. (1759–1575 B.C.).

15th (Hyksos) Dynasty (ca. 1648–1540 B.C.)
(Krauss 1985: 1637–1529 B.C.)

1. "Salitis"
2. "Bnon"
3. "Apakhnan"
4. Khyan ("Iannas"), Sewoserenre
5. Apopi ("Apophis") Nebkhepeshre/Aqenenre/Awoserre
6. Khamudy ("Assis")

16th (Hyksos) Dynasty (ca. 17th century B.C.)

Probably local West Semitic princes in East Delta

17th (Theban) Dynasty (ca. 1633–1550 B.C.)
(Krauss 1985: 1606–1539 B.C.)

1633–1575:	includes Rahotep, Thuty, Nebiryerau I and II; Sobekemsaf II; Intef V (Numkhepere); Intef VI and VII (Herihirmaat, Wepmaat).	
1575–1565:	Tao I (Senakhtenre)	(1565–1555)
1565–1555:	Tao II (Seqenenre)	(1555–1545)
1555–1550:	Kamose (Wadjkheperre)	(1545–1539)

NEW KINGDOM

18th Dynasty (ca. 1550 [or 1539]–1295 B.C.)

B.C.	King	Reign	(Krauss:)
1550–1525:	Ahmose I	(25)	(1539–1514)
1525–1504:	Amenhotep I	(21)	(1514–1493)
1504–1492:	Thutmose I	(12)	(1493–1481) (12?)
1492–1479:	Thutmose II	(13)	(1481–1479) (2?)
1479–1457:	Hatshepsut	(22)	(Coregency option, Am. III/IV)
1479–1425:	Thutmose III	(54)	
1427–1400:	Amenhotep II	(27)	(1427–1392: Amenhotep II (35)
1400–1390:	Thutmose IV	(10)	1392–1382: Thutmose IV (10)
1390–1352:	Amenhotep III	(38)	1382–1344: Amenhotep III (38)
1352–1336:	Amenhotep IV/Akhenaten	(16)	1352–1336: Amenhotep IV (16; 8CR) [Akhenaten])
1338–1336:	Smenkhkare	(2 CR)	
1336–1327:	Tutankhamun	(9)	
1327–1323:	Ay	(4)	
1323–1295:	Haremhab	(28)	

19th Dynasty (ca. 1295–1186 B.C.)

1295–1294:	Ramesses I	(1)
1294–1279:	Seti I	(15)
1279–1213:	Ramesses II	(66)
1213–1203:	Merenptah	(10)
1203–1200:	Amenmesses	(3)
1200–1194:	Seti II	(6)
1194–1188:	Siptah	(6)
1188–1186:	Tewosret	("6" + 2 = 8)

20th Dynasty (ca. 1186–1069 B.C.)

1186–1184:	Setnakht	(2)
1184–1153:	Ramesses III	(31)
1153–1147:	Ramesses IV	(6)
1147–1143:	Ramesses V	(4)
1143–1136:	Ramesses VI	(7)
1136–1129:	Ramesses VII	(7)
1129–1126:	Ramesses VIII	(3)
1126–1108:	Ramesses IX	(18)
1108–1099:	Ramesses X	(9)
1099–1069:	Ramesses XI	(30)

3D INTERMEDIATE PERIOD

21st Dynasty (ca. 1069–945 B.C.)

Kings	High Priests of Amun
	1081–1074: Herihor (7)
	1074–1070: Piankh (4)
1069–1043: Smendes I (26)	1070–1055: Pinudjem I as high pr. (15)
1043–1039: Amenemnisu (4)	1054–1032: Pinudjem I as "king" (22)
1039–991: Psusennes I (48)	1054–1046: Masaharta (8)
	1046–1045: Djed-Khons-ef-ankh (1?)
	1045–992: Menkheperre (53)
993–984: Amenemope (9; 2CR)	992–990: Smendes II (2?)
984–978: Osorkon the Elder (6)	
978–959: Siamun (19)	990–969: Pinudjem II (21)
959–945: (Har-)Psusennes II (14)	969–945: Psusennes "III" (24) [= Ps II?]

22d Dynasty (ca. 945–715 B.C.)

945–924: Shoshenq I (21)
924–889: Osorkon I (35)
ca. 890: Shoshenq II (x, CR)
889–874: Takelot I (15)
874–850: Osorkon II (24)
ca. 870–860: Harsiese (ca. 10, CR)
850–825: Takelot II (25)
825–773: Shoshenq III (52)
773–767: Pimay (6)
767–730: Shoshenq V (37)
730–715: Osorkon IV (15/17) (–713?)

23d Dynasty (ca. 818–715 B.C.)

818–793: Pedubast I (25)
?804–803: Iuput I (x, CR)
793–787: Shoshenq IV (6)
787–759: Osorkon III (28)
764–757: Takelot III (7; 5 CR)
757–754: Rudamun (3?)
754–720: Iuput II (34–39) (–715?)
(720–715: Shoshenq VI (5?) (existence doubtful)

24th Dynasty (ca. 727–715 B.C.)

727–720: Tefnakht I (7) (or 727–719 [8])
720–715: Bakenranef (5) (or 719–713 [6])

25th (Kushite) Dynasty (ca. 780–656 B.C.)

ca. 780–760: Alara (ca. 20?)
ca. 760–747: Kashta (ca. 13)
747–716: Pi(ankhy) (31) (or 747–714 [33])

716–702: Shabako (14) (or 714–700 [14])
702–690: Shebitku (12) (or 702–690 [12; 2 CR])
690–664: Taharqa (26)
664–656: Tantamun (8)

SAITE-PERSIAN PERIOD

26th Dynasty (ca. 664–525 B.C.)

664–610: Psammetichus I (54)
610–595: Necho II (15)
595–589: Psammetichus II (6)
589–570: Apries [Hophra] (19)
570–526: Amasis II (44)
526–525: Psammetichus III (1)

27th Dynasty (1st Persian Dominion) (ca. 525–404 B.C.)

525–522: Cambyses (3 in Egypt)
522–486: Darius I (36)
486–465: Xerxes I (21)
465–424: Artaxerxes I (41)
424–404: Darius II (20)

28th Dynasty (ca. 404–399 B.C.)

404–399: Amyrtaios (5)

29th Dynasty (ca. 399–380 B.C.)

399–393: Nepherites I (6)
393–380: Hakor (Achoris) (13)
[392–391: Psimut (Psammouthis), rival (1)]
380: Nepherites II (and possibly a "Muthis") (months only)

30th Dynasty (ca. 380–343 B.C.)

380–362: Nakhtnebef (Nectanebo I) (18)
362–360: Djedhor (Teos) (2)
360–343: Nakhthorheb (Nectanebo II) (18)

"31st" Dynasty (2d Persian Dominion) (ca. 343–332 B.C.)

343–338: Artaxerxes III (5 in Egypt)
338–336: Arses (3)
336–332: Darius III (4)

HELLENISTIC-ROMAN PERIODS

332–323: Alexander the Great (9)
323–30: Era of the Ptolemies
30 B.C.–A.D. 641: Roman and Byzantine epochs
A.D. 641: Arab conquest

Mons. = The Monuments
CR = Co-regency

Bibliography

Åström, P., ed. 1987. *High, Middle or Low? Acts of an International Colloquium on Absolute Chronology Held at the University of Gothenburg 20th–22d August 1987.* Pt 1. Gothenburg.

Aurenche, O., etc. 1987. *Chronologies du Proche Orient/Chronologies in the Near East. Relative Chronologies and Absolute Chronology 16,000–4,000 B.P. C.N.R.S. International Symposium, Lyon (France), 24–28 November 1986,* ed. O. Aurenche; J. Evin; and F. Hours. International Series 379 Pts 1 & 2. Oxford.

Beckerath, J. von. 1965. *Untersuchungen zur politischen Geschichte der zweiten Zwischenzeit in Ägypten.* Ägyptologische Forschungen, Heft 23. Glückstadt and New York.

———. 1984. Bemerkungen zum Turiner Königspapyrus und zu den Dynastien der ägyptischen Geschichte. *SAK* 11: 49–57.

———. 1986. Neue Überlegungen zum ägyptischen Kalender. *Saeculum* 37: 1–7.

———. 1987. Das Kalendarium des Papyrus Ebers und das Sothisdatum vom 9. Jahr Amenophis I. *SAK* 14: 27–33.

Bierbrier, M. L. 1975. *The Late New Kingdom in Egypt, c. 1300–664 B.C. A Genealogical and Chronological Investigation.* Warminster.

Borchardt, L. 1935. *Die Mittel zur zeitlichen Festlegung von Punkten der ägyptischen Geschichte und ihre Anwendung.* Cairo.

Bresciani, E. 1969. *Letteratura e poesia dell' antico Egitto.* Turin.

Černý, J. 1973. *A Community of Workmen at Thebes in the Ramesside Period.* Cairo.

Eaton-Krauss, M. 1982. Middle Kingdom Coregencies and the Turin Canon. *JSSEA* 12: 17–20.

Farina, G. 1938. *Il papiro dei re restaurato.* Rome.

Fischer, H. G. 1968. *Dendera in the Third Millennium B.C. down to the Theban Domination of Upper Egypt.* New York.

Franke, D. 1988. Zur Chronologie des Mittleren Reiches (12.–18. Dynastie)—Teil I: Die 12. Dynastie; Teil II: Die sogenannte "Zweite Zwischenzeit" Altägyptens. *Or* 57: 113–38, 245–74.

Gardiner, A. H. 1945. Regnal Years and Civil Calendars in Pharaonic Egypt. *JEA* 31: 11–28.

———. 1959. *The Royal Canon of Turin.* Oxford.

Hassan, F. A., and Robinson, S. W. 1987. High-precision Radiocarbon Chronometry of Ancient Egypt, and Comparisons with Nubia, Palestine and Mesopotamia. *Antiquity* 61: 119–35.

Hayes, W. C. 1946. Royal Decrees from the Temple of Min at Coptus. *JEA* 32: 3–23.

Helck, W. 1956. *Untersuchungen zu Manetho und den ägyptischen Königslisten Untersuchungen* 18. Berlin.

———. 1987. Was kann die Ägyptologie wirklich zum Problem der absoluten Chronologie in der Bronzezeit beitragen? Pp. 18–26 in Åström 1987.

Hornung, E. 1964. *Untersuchungen zur Chronologie und Geschichte des Neuen Reiches.* ÄA 11. Wiesbaden.

———. 1987. "Lang oder kurz?"—das Mittlere und Neuen Reich Ägyptens als Prüfstein. Pp. 27–36 in Åström 1987.

James, T. G. H. 1970. *British Museum: Hieroglyphic Texts from Egyptian Stelai,* Part 9. London.

Jeffreys, D. G. 1985. *The Survey of Memphis.* Vol. 1. London.

Johnson, J. H. 1974. The Demotic Chronicle as a Historical Source. *Enchoria* 4: 1–17.

Kaiser, W. 1961. Einige Bemerkungen zur ägyptischen Frühzeit. *ZAS* 86: 39–61.

Kantor, H. J. 1965. The Relative Chronology of Egypt and Its Foreign Correlations before the Late Bronze Age. Pp. 1–37 in *Chronologies in Old World Archaeology,* ed. R. W. Ehrich. Chicago.

Kemp, B. J., and Merrilees, R. S. 1980. *Minoan Pottery in Second Millennium Egypt* (with a chapter by E. Edel.) Mainz am Rhein.

Kitchen, K. A. 1972. Review of Fischer 1968. *Or* 41: 121–25.

———. 1986. *The Third Intermediate Period in Egypt (1100–650 B.C.).* 2d ed. Warminster.

———. 1987a. The Basics of Egyptian Chronology in Relation to the Bronze Age. Pp. 37–55 in Åström 1987.

———. 1987b. Amenmesses in Northern Egypt. *GM* 99: 23–25.

———. 1988. A Note on Asychis. Pp. 148–51 in *Pyramid Studies and Other Essays Presented to I. E. S. Edwards,* ed. J. Baines et al. London.

———. 1989. Supplementary Notes on "The Basics of Egyptian Chronology." [In press] in *High, Middle or Low? Final Report on and Responses to an International Colloquium on Absolute Chronology Held at the University of Gothenburg, 20–22 August 1987,* ed. P. Åström. Gothenburg.

Krauss, R. 1985. *Sothis- und Monddaten.* HAB 20. Hildesheim.

Málek, J. 1982a. The Original Version of the Royal Canon of Turin. *JEA* 68: 93–106.
———. 1982b. The Special Features of the Saqqara King-list. *JSSEA* 12: 21–28.
Malinine, M.; Posener, A.; and Vercoutter, J. 1968. *Catalogue des stèles du Sérapéum de Memphis I: Texte et Planches.* Paris.
Murnane, W. J. 1987. The "First Occasion of the Discovery" of Akhet-Aten. *SAK* 14: 239–46.
Parker, R. A. 1950. *The Calendars of Ancient Egypt.* Chicago.
———. 1957a. The Lunar Dates of Thutmose III and Ramesses II. *JNES* 16: 39–43.
———. 1957b. The Length of the Reign of Amasis and the Beginning of the Twenty-Sixth Dynasty. *MDAIK* 15: 208–14.
———. 1957c. The Length of Reign of Ramses X. *RdÉ* 11: 163–64.
———. 1976. The Sothic Dating of the Twelfth and Eighteenth Dynasties. Pp. 177–89 in *Studies in Honor of George R. Hughes.* SAOC 39. Chicago.
Parker, R. A., and Dubberstein, W. H. 1956. *Babylonian Chronology, 626 B.C.–A.D. 75.* Providence.
Rainey, A. F., ed. 1987. *Egypt, Israel, Sinai: Archaeological and Historical Relationships in the Biblical Period.* Tel Aviv.
Ray, J. 1986. Psammuthis and Hakoris. *JEA* 72: 149–58.
Redford, D. B. 1986. *Pharaonic King-lists, Annals and Day-books.* Missisauga.
Scandone Matthiae, G. 1979a. Vasi iscritti di Chefren e Pepi I nel Palazzo Reale G di Ebla. *Studi Eblaiti* 1/3–4: 33–43, figs. 11–14.
———. 1979b. Un oggetto faraonico della XII dinastia dalla "Tomba del Signore dei capridi," *Studi Eblaiti* 1/7–8: 119–28, figs. 36–40.
Simpson, W. K. 1972. A Tomb Chapel Relief of the Reign of Amunemhet III and Some Observations on the Length of the Reign of Sesostris III. *CdÉ* 93–94: 45–54.
Spiegelberg, W. 1914. *Die sogenannte Demotische Chronik.* Leipzig.
Stock, H. 1949. *Die erste Zwischenzeit Ägyptens.* Rome.
Thiele, E. R. 1983. *The Mysterious Numbers of the Hebrew Kings.* 3d ed. Grand Rapids.
Waddell, W. G. 1940. *Manetho.* LCL, no. 350. Cambridge, MA.
Wells, R. A. 1987. The Amarna M, X, K Boundary Stelae date: A Modern Calendar Equivalent. *SAK* 14: 313–33.
Wente, E. F., and van Siclen, C. C. 1976. A Chronology of the New Kingdom. Pp. 217–61 in *Studies in Honor of George R. Hughes,* ed. J. H. Johnson and E. F. Wente. SAOC 39. Chicago.

K. A. KITCHEN

PREHISTORY

A. Introduction

Egypt can be divided into two strikingly different geographic areas. See Fig. EGY.01. On the one hand is the Nile Valley, the narrow strip of land bordering the river, which supports rich agricultural fields and lush vegetation and is most suited to human habitation. The waters of the Nile come not from local rainfall but from the highlands of East Africa. They travel the length of Egypt, dividing the country into two, and flow into the Mediterranean. In marked contrast to the valley are the deserts on each side; they are essentially rainless and barren of vegetation. The landscape consists of vast expanses of rock and sand, and, except in a very few, favored areas, is uninhabitable. Because of the differences in resources, these two zones have had very different histories of human exploitation, but each has made important contributions to the prehistory of Egypt. The Nile Valley, so far as we know, has probably been occupied more or less continuously for the last half-million years and possibly more. The deserts, or at least the W Desert (almost nothing is known about the prehistory of the Red Sea Hills and the desert E of the Nile), saw human occupation only during episodes of increased moisture, of which there have been several in the last few hundred thousand years.

B. Early and Middle Paleolithic

Our knowledge of the Early Paleolithic in Egypt is very limited. There is no reason why Egypt should not have been occupied during the Oldowan period (beginning about 1.75 million years B.P.), but no evidence for such an occupation is known at this time. The earliest conclusive evidence of human occupation are the numerous large, crude hand axes and cleavers in the W Desert, associated with deflated remnants of fossil ponds along the margin of a large basin or much older river system. At one locality, a thermoluminescence date of 350,000 B.P. was obtained on sediments overlying the artifacts, but this provides only a minimum age for the occupation. Similar crude hand axes (but apparently lacking cleavers) have also been recovered from Nile sands, silt, and gravels near Cairo.

Finely made hand axes, which may be in the order of 250,000 years old, are more common. They have been reported from several sites in the Nile Valley, as well as from the W Desert, where they are associated with deflated fossil spring vents and remnants of shallow ponds. One of the spring vents with Final Acheulian tools also yielded bones of a horse or ass and fragments of ostrich eggshell, indicating a grassland environment and suggesting that there was significant local rainfall at this time (Caton-Thompson 1952; Schild and Wendorf 1977; 1981; Wendorf and Schild 1980).

We have much more detailed knowledge of the Middle Paleolithic in Egypt. Several varieties of occupation are known and seem to reflect both regional adaptations and diachronic change. The best data are from the W Desert, where a long sequence of Middle Paleolithic occupations has been found in two adjacent basins, Bir Sahara East and Bir Tarfawi (Wendorf and Schild 1980). The sequence is tied to a series of lacustrine events, which reflect periods of a high water table. The periods of lake development are separated by intervals of lower water table, wind erosion, and eolian deposition. The age of this Saharan Middle Paleolithic is not firmly established. The last lacustrine phase may date to about 90,000 B.P. and the beginning may be as early as 200,000 B.P. Many of the occupations fall within the Last Interglacial.

All the settlements share a similar tool kit, but there is considerable diversity in the functions of individual sites. Some sites were workshops; others had little manufactur-