In preparing chapter xv, "The Old Kingdom and Its Collapse," for the forthcoming edition of Volume I of the Cambridge Ancient History and also in working on the publication of the tomb of Queen Hetep-heres I, the mother of Cheops, I have had occasion to be grateful for Sir Alan Gardiner’s clarification of Old Kingdom dating by means of a biennial cattle count. Although Reisner, in preparing the Giza material for publication, accepted this biennial count, he followed Sethe in believing that in the reign of Pepy I a change was made to an annual count which was continued thereafter. Gardiner has done a great service in establishing that the biennial count was maintained throughout the Fifth and Sixth dynasties. It should be said immediately that his scepticism concerning the fiftieth count of Pepy II in his decree in the Mycerinus temple is fully justified. It will be seen in Figure 1 that the weathered condition of the stone, which is now in the Museum of Fine Arts in Boston, does not permit of certainty. However, the figure 35 seems the most likely one.

It is apparent that not only have the Sixth Dynasty dates been misunderstood but scholars have been inconsistent in applying the use of the biennial count to certain reigns of the Fifth Dynasty where it certainly should have been taken into account. It is also necessary to check the dates given by the monuments with the reign lengths given in the Turin Papyrus, since this papyrus is our strongest support for Egyptian chronology. The Old Kingdom regnal years reached by doubling the cattle count do not conflict with the Turin list except in three cases. The Palermo Stone gives Sahura a year after his seventh count which would make his reign fourteen years rather than the twelve of

FIG. 1.—Date from Pepy II Decree, Mycerinus temple.

1 “Regnal Years and Civil Calendar in Pharaonic Egypt,” JEA, XXXI (1945), 11 ff.

2 Even if we doubt this evidence, Isee's letter to Senedjem-Ib is dated to § 16, Urkunden. I, 63, 10.
FIG. 2.—Fragments of façade south of entrance to Prince Ka-wab's chapel (G 7120)
Fig. 3.—Mariette stela of Queen Merytyetes; fragment from G 7110+7120
FIG. 5
Mernera served as coregent with his father,³ which may account in some way for the Turin figure of twenty years, although it seems more likely that if there were a coregency it began in the fortieth year of his father's reign because of the reception of Nubian chieftains at Elephantine in the year of Mernera's fifth cattle count (year 9). It seems unlikely that Mernera would have dated such an event in his own name until after his father's death.

It is of course impossible that there should not be errors in the Turin Papyrus, but it would seem reasonable to have concrete evidence to the contrary before questioning its figures. The summaries which the papyrus gives after the last king of the Eighth Dynasty form our primary evidence for the length of the Old Kingdom. These state that there were 187 years from the beginning of the Sixth Dynasty to the end of the Eighth Dynasty and 955 years from the reign of Menes to the end of the Eighth Dynasty. The new publication of the Turin Papyrus⁴ now interprets the summary at the end of the Eleventh Dynasty as 142 years for the length of that dynasty. This is an altered reading for the 242 years which Eduard Meyer thought indicated the length of time from the beginning of the Ninth Dynasty to the end of the Eleventh Dynasty. Thus the Turin Papyrus has not preserved figures for the total length of the time from the First Dynasty to the beginning of the Twelfth Dynasty, which can be fixed by revised astronomical calculations at 1991 B.C. However, as Winlock pointed out ten years ago,⁵ a minimum date of nearly 3100 for Menes is indicated even if one left out of account the destroyed figure which the Turin Papyrus evidently gave for the eighteen kings of the Ninth and Tenth dynasties (1991 + 142 + 955 = 3088).

Eduard Meyer in his Ältere Chronologie Babyloniens, Assyriens und Ägyptens (1925), pages 68–69, admitted that a margin of error of from 100 to 200 years might have to be allowed for the date 3197 which he proposed for the beginning of the First Dynasty. It is true that to make this calculation he used the 242 years mentioned above for the length of the Ninth to Eleventh dynasties. It is also true that there is a tendency to slur over this fact and to continue to use the date 2242 B.C. for the end of the Eighth Dynasty, while at the same time employing for the length of the Eleventh Dynasty the figure 142 (or 143) which was formerly read 242 (and even earlier 160). Nevertheless, both Scharff and Winlock have shown that a date of about 2240 B.C. for the end of the Eighth Dynasty suits the historical evidence for the First Intermediate Period extremely well.⁶

While Scharff has presented a most convincing argument for maintaining a date of about 2240 B.C. for the beginning of the Ninth Dynasty, he believes that advantage should be taken of Meyer's full leeway of 200 years in order to set the beginning of the First Dynasty at about 3000 B.C. He does not attempt to explain how this can be reconciled with the Turin summary of 955 years. Albright, on the other hand, frankly states a disbelief in this total of 955 and also drastically shortens the First Intermediate Period by some eighty years (using the old figure of 160

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³ Drioton, Annales du Service, XLV (1947), 55–56: "Notes Diverses. 2.—Une corégence de Pépi Ier et de Méreure (?)")

⁴ G. Farina, Il Papiro dei Re (1939), p. 35.

⁵ "The Origin of the Ancient Egyptian Calendar," Proceedings of the American Philosophical Society, LXXXIII (1940), 457, n. 33.

years for the Eleventh Dynasty. He thus reaches 2950 (or preferably 2900) for the beginning of the First Dynasty, places the rise of the Theban House of the Eleventh Dynasty at 2160, at the close of the Sixth Dynasty, and that of Heracleopolis at 2120. A third suggestion has been made to me by Richard Parker that by shortening the length of the First Intermediate Period but still retaining the Turin figures a date of about 3100 can be obtained. In all three of these cases the lengths of the Fourth, Fifth, and Sixth dynasties are unaffected by the shortening of the chronology and would agree fairly closely with recent archeological evidence.

It is easy to sympathize with Professor Albright’s dissatisfaction with what appear to be excessive lengths for the First and Second dynasties as implied in the Turin figure of 955. It would also seem necessary, as he does, to lengthen the Third Dynasty to about 100 years as against the forty-nine years plus one missing reign length which are preserved in the papyrus, especially since it has so far been impossible to bring the names of kings of the Second and Third dynasties known from the monuments into satisfactory agreement with any of the royal lists. On the other hand, it would seem that the First Intermediate Period should not be too drastically shortened. Scharff and Winlock have shown that the last three kings of the eighteen listed for the Ninth and Tenth dynasties must have ruled for a period of about seventy-eight years contemporaneously with Theban kings of the Eleventh Dynasty. It would seem necessary to allow about 100 years, as they have done, for the other fifteen kings. The date thus gained, 2230 B.C., is so close to Meyer’s 2242 that it is convenient to retain the round figure 2240 as Winlock has done. If any lowering of the date 3200 B.C. is felt necessary, investigation should rather be turned in the direction of the first two dynasties. It might be found that the Turin Papyrus has included in the length of the First and Second dynasties some vague record of the period immediately preceding the semilegendary figure of Menes. We designate by the terms “Proto-Dynastic” or “Dynasty 0” a transition period distinguishable from Predynastic times and closely resembling the First Dynasty in which we know at least one king, the “Scorpion.” Perhaps this period was as difficult for the compiler of the Turin Papyrus to distinguish from the somewhat nebulous reign of Menes as it is for us today.

It would seem, then, that Sidney Smith is being somewhat too pessimistic when he states in the American Journal of Archaeology, XLIX (1945), 24, that Meyer’s “system for the early period has collapsed.” Meyer was evidently mistaken in believing that the calendar was invented in 4241 B.C. (better 4231), but his early chronology was largely based on the Turin Papyrus and, in its revised form as stated in Ältere Chronologie, has been little affected by new evidence. Smith goes on to add that “the assumption that a Sothic Period began with Zoser is no more than a plausible guess.” Albright had in 1920 already proposed that the invention of the calendar be moved up to the beginning of the next Sothic cycle. Then Scharff, and afterward Winlock, connected the adoption of the 365-day year with the reign of Djoser at the beginning of a cycle which has now been given a revised date of 2770/2769.8 Kees, in his Der Götterglaube im alten Ägypten, pages 259 and following, has lent support to this theory by a con-

1 Journal of Egyptian Archaeology, VI (1920), 97-98.

vincing argument that it was not before the reign of Djoser that the tradition originated concerning the gods whose birthdays form the five epagomenal days which complete the 365-day year in the new calendar. They are connected with the entry into the Heliopolitan system of Osiris and the establishment of the Ennead of Heliopolis. It would seem entirely fitting that the establishment of the calendar should take place in the midst of the intellectual and administrative achievements of the reign of Djoser.

It is to be understood, then, that for the period with which this article is concerned I am retaining the dates used in my Ancient Egypt as Represented in the Museum of Fine Arts, pages 169–70: Dynasty IV: 2680–2560 B.C.; Dynasty V: 2560–2420 B.C.; Dynasty VI: 2420–2280 B.C.

Quarry and builders’ marks from the Harvard-Boston excavations at Giza provide a substantial body of evidence for dates, particularly in the Fourth Dynasty. I should like here to make this material available, since it has hitherto been given only passing reference. These inscriptions supplement in considerable quantity others already published from Giza, those found at Dahshur, Medum, and Helwan, and the dated inscriptions cited by Gardiner from the Palermo Stone, royal decrees, and other monumental sources. In considering the marks on building stones at Giza, it would be well to observe that they always give the date in the form of the number of the “occasion” (ḥāt ṣp) of the cattle count but usually omit mention of either counting or cattle, which have to be inferred. They always mention the season as well as the number of months and days, except of course when some portion of the inscription has been broken or rubbed away. There has been a tendency to confuse statements of length of time, expressed in the form of number of years, months, and days, with actual dates. Thus Grdseloff has interpreted the five years, four months, and three days during which Senejsem-ib served with distinction under Isey as a date in the Year 5 of that king, while Reisner, in his unpublished manuscript notes, has, further on in the same inscription, interpreted as Year 1 of Unas a statement of one year and three months during which Mehy undertook work on his father’s tomb.

Gardiner believes that, since the first regnal year was termed that of the Joining of the Two Lands, the first cattle count was taken in the following year; but, since it is not absolutely certain that this was the case, there remains the possibility that the first regnal year may have been referred to by both terms. This might be so, particularly if the count two years before had fallen in the next to the last year of the preceding reign. It therefore seems safer to follow Reisner in allowing for this possibility and to subtract one year from the doubled total of the cattle count to allow for a first census having fallen in the accession year.

The reign of Sneferu provides an obstacle in that the Palermo Stone shows
that, while no counting was made in the year after the sixth census, the seventh and eighth countings fell in succeeding years. The dates at present known would agree with the twenty-four-year reign given by the Turin Papyrus, if we assume that Sneferu maintained a biennial count up until the seventh (Year 13) and then continued a yearly count to the end of his reign. In this case, the $\text{h3.t sp}$ 16 from the casing of the North Stone Pyramid at Dahshur would indicate the twenty-second year, while the $\text{h3.t sp}$ 15 and 17 from the Median Pyramid would be, respectively, the twenty-first and twenty-third years. While this is far from certain, it at least provides a working hypothesis.

Recently the problem has been further complicated by the interesting work at Dahshur of Abdessallam M. Hussein which has been so unfortunately interrupted by his untimely death. He discovered both the name of Sneferu (in a cartouche) and his Horus name Neb-maat on stones of the southern Pyramid at Dahshur, the so-called Bent Pyramid. On the North Stone Pyramid, at the southwest corner, he found the name Neb-maat and the date $\text{h3.t sp}$ 15. There need thus be no doubt that the two pyramids of Sneferu, long known to exist, were these at Dahshur. Sneferu may have completed the pyramid at Medum, which might mean that the dates of the Years 21 and 23 there refer to his reign. Doubling 17 to 34 or 33 presents a difficulty for any possible reign falling near this time, given the figures of the Turin Papyrus. It would seem most likely that the Median Pyramid was originally constructed by Sneferu's predecessor, Huni, especially since Černý has now established that Queen Meresankh appears as the mother of Sneferu on the Palermo Stone. This queen's name in an eighteenth Dynasty graffito in the temple of Medum would then refer to a lady of a generation preceding that to which she was assigned when it was thought that she was the wife of Sneferu.

It might be added that the more one deals with problems of the ages of the various people buried in the Giza Cemetery, the more one feels that those buried at Medum are of Sneferu's generation rather than his children, in other words, the family of Huni. Nefer-maat's son Hemimu is shown as a portly, middle-aged man in his Hildesheim statue, which should have been made not much later than the nineteenth year of Cheops and probably earlier. Similarly, Cheops' sons, Ka-wab and Khufu-khaf, are represented as fat, mature men at the end of their father's twenty-three-year reign. This suggests that Cheops was married fairly early in the reign of Sneferu to the lady who later became his chief queen. I now believe that this was the famous Queen Merytyetes of the stela which Mariette found at Giza and which was copied by De Rougé (Fig. 3). Her name occurs on a fragment from the chapel of Prince Ka-wab, evidently as his mother (Fig. 2). If his thumb be drawn on the inner side of the breast or held it up with a flower, polite usage in the Old Kingdom would have caused her to place this hand on her nose. We have, then, the owner of the tomb, Ka-wab, with a woman whose broken titles are those of a queen. In the tomb immediately south of that of Ka-wab,
she were long married to the prospective ruler Cheops in his father's reign, it may be
the reason why in her old age under Chephren she referred to herself as \textit{wrt \textit{hs} Snfrw} and \textit{wrt \textit{hs} Hwyf}.\textsuperscript{17} These same considerations would suggest that the marriage of Hetep-heres and Sneferu took place in the second half of the reign of Huni. Here the suggestion might be made that this was prompted to secure the succession by the death of the heir of the great mastaba No. 17 at Medum who could have been Huni's original heir (the brother of Hetep-heres and son of the chief queen whose name we do not know). This is perhaps not the place to enlarge upon these speculations which I am endeavoring to support elsewhere with what meager evidence there is in regard to Hetep-heres and the Cheops family.

The dated inscriptions at Giza from our

Khufu-khaf appears with his mother in the same place on the façade of the chapel (Smith, loc. cit., Pl. 44 b). A fragment from the chapel of Ka-wab's wife, Hetep-heres II, bears part of a queen's title (Fig. 3). She had only the title of princess when these two chapels in the Ka-wab tomb were decorated. She married King Radedef after Ka-wab's death. The similarity in the arrangement of the hieroglyphs on the fragment to that on the Merytyetes stela (Fig. 3) is perhaps a coincidence but does make one wonder whether the Mariette stela could have been set up in the Ka-wab tomb by either Hetep-heres II or Merytyetes, who were both still alive in the end of the reign of Cheops, although Ka-wab himself had died at the time.

\textsuperscript{17} We long believed that Mariette’s stela (\textit{Mastabas}, p. 565, De Rougé, \textit{Inscr. Hébre.}, Pl. LXII) once stood in the empty emplacement of the southern false-door of G 7050, the chapel of Princess Merytyetes and her husband Akhet-hetep. It now seems fairly certain that his niche was inscribed in the husband's name and that a piece of it exists in the Barracco Collection in Rome (Smith, loc. cit., pp. 160–61, Pl. 42 b). Grdseloff (\textit{Annales}, LXII [1943], 118) suggests that Mariette and De Rougé associated the Merytyetes stela with the Akhet-hetep chapel, whereas they give no certain indication of the location of the stela, which has now completely disappeared. Mariette does say that the woman on the Merytyetes stela wears a dress with a pointed shoulder peak like that of the mother of Khufu-khaf. There might be a hint here that he associated the two figures in his mind because he had been working on two neighboring tombs at Giza at about the same time.
Pyramid at Dahshur, but the Year 21 read here, like the Year 22 seen by Lepsius on a casing block halfway up on the face of the pyramid, is so late in the reign of Sneferu that it seems impossible that they can have been applied at the beginning of the construction of that pyramid. It looks as though they were inscribed, not in the quarry, but when the pyramid was nearing completion.

A. DATED INSCRIPTIONS FORMING PART OF THE DECORATION OF A MASTABA

1. (Fig. 4).—The vertical columns of inscription which frame the entrance to the rock-cut tomb of Queen Meresankh III under the mastaba G 7530-7540 in the Eastern Cemetery. These have been published in M.F.A. Bulletin, XXV (1927), 64 ff. and in Sethe, Urkunden, I, 156. The right side gives the date of the Queen's death: "Year of the first occasion, month 1 of Shemu, day 21," while the left side gives the date of her burial: "Year after the first occasion, month 2 of Peret, day 18." Reisner concluded that these dates referred to the first and second years of Shepseskaf, but Gardiner's objection should be noted that they may indicate the second and third years of Shepseskaf.

2. (Fig. 4).—A similar inscription is very incompletely preserved on the north subsidiary niche on the face of the mastaba G 7530-7540, which Reisner concluded had been built in the reign of Chephren by Meresankh's mother, Queen Hetep-heres II, for her own use but later abandoned to her daughter. On the right this reads: $\delta \cdot t [sp] 2(?), month 4 of Shemu, day 22 rnp. On the left side, all that is preserved is [P]rt, day 6 rnp. This use of the expression "of the year" is unusual but occurs again on the mastaba of Min-khaf, as given below.

3. (Fig. 4).—A very incompletely preserved inscription on the northern subsidiary niche of Prince Min-khaf (G 7430-7440) which Reisner believed because of details in its construction and its position in the Eastern Cemetery to have been constructed in the reign of Chephren. On the outer panels of the niche there only remains part of the name of Min-khaf on each side. On the right side of the inner niche is: \ldots 2 rnp. On the left: \ldots $\tau k \ rnp$ or "last day of the year."

B. MISCELLANEOUS BUILDER'S MARKS GIVING THE NAME OF ONE OF THE WORKING CREWS OR THE NAME OF THE OWNER OF THE MASTABA

1. (Fig. 5).—Three crew names from the east face of G 7210-7220 (Prince Dedef-hor) which include the Golden Horus Name of Cheops. One of these has been read by Reisner: "The Crew of Cheops-is-drunk" on the analogy of a similar crew name of Mycerinus. It should be observed, however, that the word seems to be $\tau h w$ rather than $\tau h w$.

2. (Fig. 5).—Probably a crew name $r\hs$ from the east face of G 7110 (Prince Ka-wab). Apparently not $\tau h w \ cprw$ as read by Reisner.

3. (Fig. 5).—Two sets of builder's marks from white limestone blocks in the southern chapel of the great mastaba G 2000 in the Western Cemetery.

4. (Fig. 5).—Mark giving the name of Nofer, the owner of the mastaba G 2110 in the Western Cemetery; found on a foundation block under the southwest corner of the chapel.

5. (Fig. 8).—Incised inscription on a flake of limestone found in the debris of the mastaba G 5110 in the Western Cemetery (and therefore of uncertain date). Under the heading "Western" is listed $\delta t \ c t$ and $\w d t \ t$, and under this: "Overseer of gangs of ten." Finally the names of two overseers: Perneb and Iwfy.

C. BUILDER'S OR QUARRY MARKS GIVING DATES

1. (Fig. 7).—The most important of these is unfortunately somewhat uncertain. It was painted on a block at the upper end of the Cheops causeway near the entrance to the temple, and in 1925, when it was first found and photographed, it was read by Alan Rowe as: "Year 8, month 1 of Peret." Reisner seems to have been mistaken in writing in Giza
EVIDENCE FOR THE HISTORY OF THE FOURTH DYNASTY

Necropolis, I, 71, that Rowe read this date Year 13. The mark had disappeared by the time I attempted to check these inscriptions in the Eastern Cemetery. I can only give tentatively the drawing in Fig. 7 made from the very faint photograph. The year would apparently be indicated by the eighth count, that is, Year 15 (Photo C 10906).

WESTERN CEMETERY

2. (Fig. 6).—Limestone fragment imbedded deep in the filling of G 1203. The date reads: bšt sp 5 (year 9), month . . . . . of Shemu, Day 5(?). The reign in this case is probably Cheops, since the adjoining mastaba, G 1205, was constructed by a working gang of the king. Reg. No. 38–5–2; Photo C 14236.

3. (Fig. 6).—G 2120 (Prince Sheshat-sekhentyuwy): on west wall of unfinished chapel. Date reads: bšt sp 12 (Year 23), month 2 of Shemu. The reign is again almost certainly Cheops.

4. (Fig. 6).—G 2130 (Prince Khent-ka(?)): back of casing stone on west face. The date reads: bšt sp 4(?), month . . . . . The burial in this tomb was accompanied by a sealing with the name of Cheops.

5. (Fig. 8).—Incised on a fragment of limestone found in the debris of the shaft of G 5080 C, the tomb of Seshem-nofer. The date reads: bšt sp 2, month 2 of Peret, day 10(?). In the burial chamber was found a sealing of Shepseskaf giving his Horus name Shepsesy-khet. Therefore this date may refer to the third or fourth year of Shepseskaf. Reg. No. 33–1–69, Photo No. C 13374.

6. (Fig. 8).—Small fragment from debris north of the large mastaba G 2000. Only the figure 24 remains beneath two large hieroglyphs. Reg. No. 36–1–1, Photo No. C 13665.

7. (Fig. 6).—Incised on a white limestone block under the Sixth Dynasty mastaba G 5552 (old number G 2359). Perhaps a Fourth Dynasty construction block abandoned for some reason on the edge of the Western Cemetery, just west of the Great Pyramid. Date reads: “Year of the Joining of the Two Lands, month 2 of Shemu, day 10.”

EASTERN CEMETERY

8. (Fig. 7).—G 7130–7140 (Prince Khufu-khaf): On east face of block which forms part of the projecting Isis Temple paving. The cutting for the floor of the Isis Temple actually runs through the block which is certainly part of the original construction of the east face of the Khufu-khaf mastaba. Date reads: bšt sp 12 (Year 23), month 2. . . . . A second adjoining inscription seems to read: . . . . . month 2 of Peret, day . . . . This date would certainly seem to refer to the end of the reign of Cheops.

9. (Fig. 7).—G 7530–7540: Mastaba constructed by Queen Hetep-heres II in the reign of Chephren, according to the position of the mastaba in the cemetery and the type of building. Four casing stones bore inscriptions: (a) west face: bšt sp 7 (Year 13), month 4 of Peret, day 20; Wrt ḫtē Hetep-heres (Photo A 4622); (b) west face: bšt sp 7, month 4 of Peret, day 10; Wrt ḫtē(?); this inscription is only recorded in the 1927 Diary, p. 734; (c) east face: . . . . . . month 3 of Shemu, day 21; Wrt ḫtē Ḥtp-[hrā] (Photo B 8765); and (d) back of unspecified casing stone: month 3 of Shemu, day 2(?)(Photo C 11032).

10. (Fig. 7).—G 7350: Tomb of a woman whose daughter was a queen (see Cairo relief, Smith, History of Egyptian Sculpture, Pl. 45a). No name is preserved, but Reisner believed that this was the third tomb at Giza prepared for Hetep-heres II. If so, the somewhat doubtful bšt sp 10 provides a stumbling block, since a Year 19 could hardly apply to the short reign of Shepseskaf. Perhaps the queen had already turned G 7530–7540 over to her daughter Meresankh III by the Year 19 of Mycerinus. The latter may not have completed work on this tomb when she died in the first year of Shepseskaf, so that her mother was obliged to prepare a rock-cut tomb for her daughter as is implied by the inscription on the coffin of Meresankh III: titles and name of Hetep-heres II followed by “(that which) I have given to my daughter, the King’s Wife, Meresankh.”

11. (Fig. 7).—G 7650: The tomb of Akhet-
hetep and his wife Princess Merytyetes (see above for discussion of the stela of Queen Merytyetes which I no longer believe can have come from this tomb). Two dates: (a) Incised on back of block of north wall of chapel, adjoining the northern false-door; date reads: $\text{h3.t sp 12}$, month 2 of Shemu, day 10; this would then be the Year 23, probably of Chephren from position and construction of mastaba; and (b) painted on back of casing stone on north face of mastaba; date reads: $\text{h3.t sp 13}$ (Year 25), month 4. . . .

12. (Fig. 8).—Inscribed fragment of limestone from debris of interior chapel of Prince Ankh-haf (G 7510). Date reads: “ . . . . . . . . . . Shemu, day 29.”

13. (Fig. 8).—Incised fragment of limestone from debris on top of G 7450: “Year of the Joining of the Two Lands, month 3 of Shemu. . . . . . .”

14. (Fig. 8).—Marks on the walls of the rock-cut tomb G 7803C to which only a vague Fifth to Sixth Dynasty date can be assigned. Three inscriptions: (a) horizontal line on ceiling: $\text{h3.t sp 2}$, month 3 of Peret, day 27; (b) on east door jamb: $\text{h3.t sp 2}$, month and season uncertain, day 27; (c) on west door-jamb: $\text{h3.t sp 2}$ (originally read 10), month 3 of Peret, day 27.