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The Calendar of Aramaic Texts from Achaemenid and Ptolemaic Egypt

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Dedicated to Richard A. Parker

Aramaic papyri with dates stem from three major sites in Egypt — Memphis, Teuzoi (el-Hibeh [Bauer-Meissner]), and Elephantine. The provenience of a couple of pieces (C 72, 83) is unknown. These papyri were published over a period of 120 years and are scattered in ten separate publications — *Corpus Inscriptionum Semiticarum* II/1, No. 146 (= C 72; first published with facsimiles by J.J.L. Bargès in 1862),[1] A.H. Sayce and A.E. Cowley (1906),[2] Ed. Sachau (1911),[3] A.E. Cowley (1923),[4] N. Aimé-Giron (1931),[5] H. Bauer and B. Meissner (1936),[6] E.G. Kraeling (1953),[7] E. Bresciani (1960),[8] M. Sznycer (1971)[9] and J.B. Segal (1983).[10] Oddly enough, neither Sayce and Cowley nor Sachau troubled themselves to provide a day and month in the Julian calendar that would correspond with the double Babylonian and Egyptian dates in their documents from the Jewish military colony at Elephantine. This task remained for the reviewers and within a decade at least fourteen scholars published studies dealing with the chronology of the Aramaic papyri — E. Schürer,[11] S. Gutesmann,[12] and P.J.

1 *Papyrus égypto-araméen appartenant en Musée égyptien du Louvre expliqué et analysé pour la première fois* (Paris, 1862).
2 *Aramaic Papyri Discovered at Assuan* (London, 1906) = SC.
3 *Aramäische Papyrus und Ostraka aus einer jüdischen Militärkolinie zu Elephantine* (Leipzing, 1911) = Sachau.
4 *Aramaic Papyri of the Fifth Century B.C.* (Oxford, 1923) = C.
5 *Textes araméens d'Égypte* (Cairo, 1931) = AG.
6 "Ein aramäischer Pachtvertrag aus dem VII Jahre Darius I," *SPAW Phil.-Hist. Kl.* (1936), 414–24 = Bauer-Meissner.
7 *The Brooklyn Museum Aramaic Papyri* (New Haven, 1953) = K.
8 "Papiri aramaici egiziani di epoca persiana presso il Museo Civico di Padova," *RSO* 35 (1960), 11–24 = Padua.
9 "Trois fragments de papyri araméens d'Égypte d'époque perse," *Hommages à André Dupont-Sommer* (Paris, 1971), 161–76 = AI.
10 *Aramaic Texts from North Saqqâra* (London, 1983) = Segal.
11 "Der jüdischer Kalendar nach den aramäischen Papyri von Assuan," *Theologische Literaturzeitung* 32 (1907), 65–69.
12 "Sur le calendrier en usage chez les Israelites au V^{e} siècle avant notre ère," *REJ* 53 (1907), 194–200.

Hontheim[13] (1907); H.J. Bornstein (1908);[14] E.B. Knobel (1908–1909);[15] J.K. Fotheringham (1908–09, 1911, 1913);[16] L. Belleli[17] and J.. Smyly[18] (1909); D. Sidersky[19] and F. Westberg[20] (1910); H. Pognon[21] and M. Sprengling[22] (1911); F.K. Ginzel (1911, 1914);[23] and Ed. Mahler (1912, 1916).[24] Since the Jews in the post-exilic period, whether in Susa (Est. 2:16, 3:7, 13, 8:12, 9:1, 15–22) or Judah (Zech. 1:7, 7:1; Ez. 6:15; Neh. 1:1, 2:1, 6:15), adopted the Babylonian month names, these scholars debated, among other things, whether the non-Egyptian dates in the Aramaic contracts were Jewish or Babylonian and whether the New Year of these dates began in Tishri (as allegedly in Judah according to the sequence in Neh. 1:1 and 2:1) or Nisan.

The Aimé-Giron papyri from Memphis (1931) were given chronological treatment in 1941 by R.A. Parker who, with R.A. Bowman, pieced together several fragments to produce some ten double dates.[25] He followed the assumption of Mahler and Pognon that the non-Egyptian dates in the papyri were Babylonian. The publication of the Brooklyn papyri from Elephantine by Kraeling (1953) gave the calendar debate new impetus. S.H. Horn and L.H. Wood presented (1954) a detailed review of what they called "The Fifth-Century Jewish Calendar at Elephantine"[26] and R.A. Parker retorted vigorously (1955) that the calendar at Elephantine was not Jewish but Persian-Babylonian.[27] The only chronological study of the papyri since then was undertaken by J. Neuffer (1968) and she waffled between a Jewish and a Babylonian calendar.[28]

13 "Die neu entdeckten jüdische-aramäischen Papyri von Assuan," *Biblische Zeitschrift* 3 (1907), 225–34.

14 "Neuaufgefundene chronologische Daten aus der epoche Ezras und Nehemias" (Hebrew) in D.N.. Günzburg and I. Markon, eds., *Festschrift zu Ehren des Dr. A. Harkavy* (St. Petersburg, 1908), 63–104.

15 "A suggested explanation of the Ancient Jewish Calendar Dates in the Aramaic Papyri translated by Professor A.H. Sayce and Mr. A.E. Cowley," *Monthly Notices of the Royal Astronomical Society* 68 (1907–08), 334–45 (= March, 1908); *ibid.* 69 (1908–09), 8–11.

16 "Calendar Dates in the Aramaic Papyri from Assuan," *Monthly Notices of the Royal Astronomical Society* 69 (1908–09), 12–20; "Note on the Regnal Years in the Elephantine Papyri," *ibid.* 69 (1908–09), 446–48, 470, 542; "A Reply to Professor Ginzel on the Calendar Dates in the Elephantine Papyri," *ibid.* 71 (1910–11), 661–63; "Dates in the Elephantine Papyri," *JTS* 14 (1913), 570–75.

17 *An Independent Examination of the Assuan and Elephantine Aramaic Papyri* (London, 1909).

18 "An Examination of the Dates of the Assouan Aramaic Papyri," *Proceedings of the Royal Irish Academy* 27 (1909), Sect. C, 235–50.

19 "De calendrier sémitique des papyri araméens d'Assouan," *JA* Series 10; 16 (1910), 587–92.

20 *Die Biblische Chronologie nach Flavius Josephus* (Leipzig, 1910), 103–11.

21 "Chronologie des papyrus araméens d'Éléphantine," *JA* Series 10; 18 (1911), 337–55.

22 "Chronological Notes from the Aramaic Papyri. The Jewish Calendar. Dates of the Achaemenians (Cyrus-Darius II)," *AJSL* (1911), 233–66.

23 *Handbuch der mathematischen und technischen Chronologie* II (Leipzig, 1911), 45–53; III (1914), 375–76.

24 "Die Doppeldaten der aramäischen Papyri von Assuan," *ZA* 26 (1912) 61–76; *Handbuch der jüdischen Chronologie* (Frankfurt, 1916), 346–55.

25 "Persian and Egyptian Chronology," *AJSL* 58 (1941), 295–98.

26 *JNES* 13 (1954), 1–20.

27 "Some Considerations on the Nature of the Fifth-Century Jewish Calendar at Elephantine," *JNES* 14 (1955) 271–74.

28 "The Accession of Artaxerxes I," *Andrews University Seminary Studies* 6 (1968), 60–87.

Finally, the papyri from Saqqarah published by Segal (1983) provided new chronological material, albeit fragmentary.

In addition to the papyri there are three stone inscriptions with dates — an Egyptian tomb inscription found at Saqqarah and published by R. Lepsius with transcription of the Aramaic by J. Euting (1877);[29] a small stela found at Aswan and published by M. de Vogüé (1903);[30] a stone engraver's exercise from Memphis first published by W.M.F. Petrie and J.H. Walker (1909)[31] and treated recently by A. Lemaire (Ashmolean Aram.O.1).[32]

In preparation of a Corpus of Aramaic Texts of the Persian Period I have undertaken a new collation of papyri at the Brooklyn Museum in New York (K:1–14), the Bodleian at Oxford (C 5 = SC A), the Egyptian Museum in Cairo (the Sayce-Cowley, Sachau, and Aimé-Giron collections, and the Aswan stela) and the Louvre in Paris (C 72 = Papyrus Luparensis), among other places. In the course of these investigations new readings and restorations have come to the fore and a hitherto unknown double-date uncovered. A proper study of Jewish calendrical practice in Egypt during the Persian Period requires examination not only of the double-dated documents but of all documents bearing dates. Three modes of dating are to be found in the Aramaic documents: Egyptian date only, Babylonian date only, a synchronous Egyptian and Babylonian date. Demotic documents use only the Egyptian date. Both give the year according to the reigning Persian king. Tabulating and classifying all the relevant data we raise the following questions:

1. Did different documents follow different patterns of dating?
2. Were different patterns applicable at different times during the fifth century?
3. How accurate are the synchronisms and how may we explain non-congruencies?
4. Do individual scribes display specific patterns in dating?
5. Can paleography and papyrology assist in the restoration of a fragmentary date?
6. Is the Babylonian calendar in use at Elephantine officially Persian or distinctly Jewish?

The Egyptian calendar was solar, the day ran from sunrise to sunrise, each month consisted of thirty days and five extra days were added on at the end of the year. The new year began on Thoth 1, which during the course of the 5th century B.C.E. retreated from December 26, 500 to December 1, 400. The Babylonian calendar was lunar, the day ran from sunset to sunset, and the month was determined by visibility of

29 "Eine Aegyptisch-Aramäische Stele," *Zeitschrift für ägyptische Sprache* 15 (1877), 127–32; H. Donner and W. Röllig, *Kanaanäische und aramäische Inschriften* (Wiesbaden, 1968; 2nd ed.), No. 267 = KAI. Housed in the Staatliche Museen zu Berlin, this inscription was destroyed during World War II.

30 "Inscription araméenne trouvée en Égypte," *Comptes rendus des séances de l'Académie des Inscriptions et Belles-Lettres* (1903), 269–276; M. Lidzbarski, *Ephemeris für semitische Epigraphik* (Giessen, 1903), II, 221–23.

31 W.M.F. Petrie, *The Palace of Apries (Memphis II)* (London: School of Archaeology in Egypt: 1909), 12–13, Pl. XIIIA.

32 A. Lemaire, "Notes d'épigraphie nord-ouest sémitique," *Semitica* 37 (1987), 52–55.

the new crescent at sunset. To synchronize the lunar year of 354 days with the solar year of 365¼ days, seven months were intercalated in a nineteen-year cycle. The new year began on Nisan 1 which during the fifth century varied between March 23 (perhaps even March 20) [see below] and April 23. To convert an Egyptian date into a Julian date, we use the *Chronologische Vergleichungs-Tabellen* (Vienna, 1889) by Ed. Mahler. For the conversion of Babylonian dates we were formerly dependent upon the tables of R.A. Parker and W.H. Dubberstein, *Babylonian Chronology 626 B.C.–A.D. 75* (Providence, 1956). We now have a computer printout based upon a program LUCMAI. EXE by Prof. Peter J. Huber, Dept. of Statistics of Harvard University, which "calculates the dates and times of consecutive New Moons and the visibility conditions of the crescent." Given the Elephantine coordinates 24.05° latitude and 32.56° longitude Profs. Michael Seeds and Harold Nations of the Dept. of Mathematics, Astronomy Program of Franklin and Marshall College created the file and the F and M Computer Services Dept. ran off the program. There is a difference of -47 minutes between the visibility of the sun at Babylon and at Aswan. Huber's tables show where visibility might have occurred a day earlier or later than the *probable* date.

Exclusively Egyptian dates are to be found in (four) letters, (four) lists, (twelve) contracts, and one fragment, twenty-one in all. Since the private letters are meant for immediate perusal, they give only the day and month. Knowledge of the year was taken for granted and it was not necessary to record it for posterity. Accounts and records were meant to have a greater permanency, and so a year date was necessary. But even so, the lifetime of a list was not meant to be too long and knowledge of the king could be assumed and therefore omitted. Contracts, on the other hand, were needed to serve as evidence in case of litigation. Therefore they had to spell out the name of the king to avoid any uncertainty as to when the document was drawn up. The twelve contracts were drawn up either at the beginning of our period, i.e. in the reign of Darius I and the beginning of the reign of Xerxes (515–483), or at the end, in the reign of Darius II, Artaxerxes II and Amyrtaeus (413–399). The four lists may all be dated paleographically to the last two decades of the century. Similarly, three of the four letters (C 37, 42; K 13) fall within the late period while the fourth one (Padua) may be assigned paleographically to the end of the first period (ca. 475). The earliest double-dated document was probably written in 13 Xerxes = 473 (AG 8) and the latest at the end of 2 Artaxerxes II = 402 (K 10). Some time, then, between 483 and 473 it became *de rigueur* to employ a double date. This requirement was observed probably as late as Darius II = 413 (C 45), after which a few contracts (C 28; K 9, 10) still contained the Babylonian date, but most did not. It is not clear to me why necessarily this period of seventy years or so — spanning the second half of the reign of Xerxes, the whole reign of Artaxerxes I, and the first half of the reign of Darius II — required double dates, why they were not in use earlier and fell into disuse later.

The twenty-one exclusively Egyptian-dated documents are as follows:

Four letters, all between Jews (dates at the end):

1. Padua 1:13 — [?] Meḥir. This was dated by its first editor simply to the 5th century

but subsequently to the second quarter of the 5th century.[33] Actually its script does not look later than that of the two dated papyri of this period (C 5, 6) and resembles more that of the earlier papyri (C 1, 2, 11; cf. the *he, ḥeth, mem. ṣade*; also the *samekh* in *prs* [line 3] with that in the early Hermopolis papyri). Given the parameters of paleographical dating, we may assign this papyrus to some time before 473.

2. C 42:14 — 27 Tybi. Dated paleographically to the last quarter of the 5th century.[34]

3. C 37:15 — 6 Phaophi. Dated paleographically to the late 5th century.[35] This is not the date of dispatch but the date of receipt of previous letters.

4. K 13:8 — 5 Epiph. Dated by events to October 1, 399.

Four lists, two of which concern mainly Jews (C 22, 61–63), have Egyptian dates, usually as heading (C 22, 63:1, 8, 68,11) but also within the entry (C 63:15; Aḥiqar palimpsest). One of the texts may be dated to the middle of the 5th century (Aḥiqar palimpsest) while the others stem paleographically from the end of the 5th century.

1. Aḥiqar palimpsest — This unpublished and not full deciphered tax collection text contains four dates on the recto, including 16 Tybi (Sachau Pl. 42) and 12 Mesore (Sachau Pl. 44) and sixteen on the verso. The latter are concentrated on two plates and include 20 Phamenoth; 27, 30 Paḥons; 17, 21, 28, 27 Payni (Sachau Pl. 48); [*x*] Epiph; 9, 20, 24 Mesore (Sachau Pl. 45). They proceed in sequence from June/July through November/December, skipping only July/August (=Pharmuthi). The year is suggested by frequent reference to "wine of year 10," "wine of year 11," "wine of year 12," and "wine of year 13." Paleographically the papyrus appears to have been written in the middle of the 5th century and so year 13 would refer to Artaxerxes and thus be 452/51.

2. C 63 — Written on the verso of the Bisitun inscription, this text is a valuable aid in dating that copy. It lists three names which appear in contracts between 420 and 400 (= 4 Darius II to 5 Amyrtaeus): Menahem b. Azariah (C 61:11 [sic!]; cf. K 7:44), Menahem b. Shallum (C 63:10; cf. C 35:2), and Hanan b. Haggai (C 61:2; cf. C 28:16). The five dates, all fragmentary, are

C 61:12 — Epiph, year [...] = October
C 63:1 — "Year [3+] 3 [+0/1]" = 6 (418) or 7 (417)
C 63:8 — Ph[armuth]i/P[ayn]i, year 6[+?] = July/September, 418[+?]
C 63:15 — Epiph, year 13[+?] = October, 411[+?]
C 63:16 — Mesore [...] = November

and so the copy of the Bisitun inscription on the recto must have been written before 418.

33 J. Naveh, "The Development of the Aramaic Script," *Proceedings of the Israel Academy of Sciences and Humanities* V/1 (Jerusalem, 1970), 36.

34 *Ibid.*, 33

35 *Loc. cit.*

3. C 68,11 — 3 Tybi (bis!) Both this list and the preceding one introduce the individual entries with the notice *zkrn*, "memorandum." Tybi corresponds to April.

4. C 22:1 — 3 Phamenoth, year 5. Sachau and Cowley dated the text to 5 Darius II= June 6, 419. But J.N. Epstein,[36] Kraeling,[37] F.M. Cross,[38] and Naveh[39] preferred 5 Amyrtaeus = June 1, 400. Onomastically and prosopographically, the latter date is not unsuitable. The script bears striking resemblance to C 24 which bears a double date in "Year 4[-year 5]" of an unnamed king. In the latter case 420–19 is a possible date. Both texts could have been written by the same scribe over a span of twenty years (cf. the activity of Haggai b. Shemaiah (437 [K 3] to 402 [K 12] and probably 400 [C 35]).

Twelve contracts have exclusively Egyptian dates, In six of these, the date herein proposed differs from that found in Cowley's publication. Dates appear at the beginning of a contract:

1. Bauer-Meissner 1 — 7 Darius, Meḥir 6 = June 3, 515. This is the only document where the word order is year-month-day. It was not drawn up at Elephantine but at *Krb* =Korobis, near El-Hibeh.

2. C 1:1 — 2 Epiph, 27 Darius 1 = October 22, 495 B.C.E. Day-month-year is the normal word order.

3. C 11:8 — Thoth, year 36 (Darius 1) = December 23, 487–January 21, 486. The contract was probably drawn up a year earlier, i.e. December/January 488/87. The date is based upon simulated papyrological restoration.[40] Cowley had read year [3+]6 = 9, dating the text to the reign of Artaxerxes, ca. 455. As stated, there are no exclusively Egyptian-dated documents from the reign of Artaxerxes. This is one of two undated contracts; the other is C 49. The date in the body of the contract is the due date for repayment of the loan.

4. C 2:1 (so restore in 3:1) — 28 Phaophi, 3 Xerxes = February 17, 483. The reading of 3 for the year date is that of A. Yardeni (contra Cowley's 2).

5. C 45:1 — [? Pay]ni, 11 Dar[ius II =] August 31–September 29, 413. The writing in the first line is worn away; this is the most likely reading (contra Cowley, who restored Nisan and Artaxerxes).[41] Demotic contracts of the Persian period regularly lacked notation of the day (Malinine, *Textes* Nos. 3, 4, 5, 8, 11, 17).

6. C 29:1 — Mesore, 15[+2 = 17] Darius II = October 29–November 27, 407. Two strokes fill out the blank space in the year formula better than 1 (so A. Yardeni, contra Cowley). Accordingly, the year date in line 5 should be restored "Paḥons, 10[+ 8 = 18]" = July 31–August 29, 406 and not 10 [+7 = 17] (contra Cowley).[42]

36 "Jahu, AŠMbēthēl und ANTbēthēl," *ZAW* 32 (1912), 139–45.

37 *Brooklyn Museum Aramaic Papyri*, 62.

38 "The Development of the Jewish Scripts" in G.E. Wright, ed., *The Bible and the Ancient Near East* (Doubleday Anchor Book, Garden City, 1965), 178, 251 n. 34.

39 "Aramaic Script," 34.

40 B. Porten, "Two Aramaic Contracts Without Dates: New Collations (C 11, 49)," *BASOR* 258 (1985), 43–46.

41 B. Porten, "An Aramaic Oath Contract: A New Interpretation," *RB* 90 (1983), 564.

42 B. Porten, "Aramaic Papyri in the Egyptian Museum: The Missing Endorsements" in C.L. Meyers

7. P. Leiden inv. F 1976/11.4 — Payni, 2 Artaxerxes = August 29–September 27, 403.[43]

8. K 12:1, 10 — 12 Thoth, 4 Artaxerxes II = December 13, 402.

9. K 11:1 — Thoth, 4 Artaxerxes II = December 2–31, 402. If the 13 shekels paid for the house in K 12 emptied Anani B. Haggai's coffers, then the loan document of K 11 was drawn up between December 14 and 31.

10. C 7:1 — 18 Phaophi, 4 Artaxerxes II = January 18, 401. Cowley dated this text to the reign of Artaxerxes I, i.e. 461. In addition to chronological criteria, papyrological, paleographic, onomastic and formulaic criteria also argue for a late date.[44]

11. C 43:1 — This is the most fragmentary of the dates in this group. Cowley read and restored "[10+]5 (=15) Pha[ophi]." But the month date is better restored "15 Pay[ni]" (so Ada Yardeni). The year date allows for three kings — Darius II (423–405), Artaxerxes II (404–401), Amyrtaeus (404–399). Since our earliest exclusively Egyptian date is 11 Darius (413 B.C.E.) we may assume that this would be the earliest possibility here, with further possibilities up to 15 Darius (409 B.C.E). Paleographically we may restore as much as 4 Artaxerxes or 5 Amyrtaeus. A date 15 Payni, 4 Artaxerxes II = September 11, 401, if correct, would mark the latest attestation of Persian rule in Egypt. The date 15 Payni, 5 Amyrtaeus = September 11, 400 would be the latest date at Elephantine for Amyrtaeus.[45]

12. C 35:1 = No. 69 of 96 Unpublished Fragments (Staatliche Museen, East Berlin) — 23 Phamenoth, 5 Amyrtaeus = June 21, 400 (contra Cowley who read only 21 Phamenoth).

In addition to these twelve contracts whose date is relatively intact there exists a fragment, paleographically from early in the reign of Xerxes, which appears to attest to an exclusively Egyptian date:

13. Nos. 4 and 7 of 96 Unpublished Fragments (Staatliche Museen, East Berlin) — [*x* of month of A]thyr, yea[r *y* of *Xerxes*]. Athyr is February-March.

If exclusively-Egyptian dates are to be found in four private Jewish letters, exclusively-Babylonian dates are found in six or seven official letters, whether by Jews (C 21, 30||31) or non-Jews (C 17, 26):

1. C 17:7 — 19 Marcheshvan, 38 Artaxerx[es] II = November 6, 427 (contra Cowley who read the year as 37). Here as in C 26:28 the date was written on the final (outer) band of the papyrus.

2. C 21:2, 4, 7 — "year 5 of King Darius"; "day 15 to day 21 of Nisa[n]." The king is

and M. O'Connor, eds., *The Word of the Lord Shall Go Forth: Essays in Honor of David Noel Freedman* (Phila., 1983), 535 (where dates are erroneously given as 408 and 407 respectively), 543.

43 J. Hoftijzer, "An Unpublished Aramaic Fragment from Elephantine," *Oudheidkundige Mededelingen uit het Rijksmuseum van Oudheden te Leiden* 68 (1988), 45–48.

44 B. Porten, "Cowley 7 Reconsidered," *Orientalia* 56 (1987), 89–92. The date on p. 90 is erroneously given as September 11, 401.

45 For earlier treatment, cf. B. Porten, *Archives from Elephantine* (Berkeley, 1968), 294–96.

Darius II and the year is 419/18. But the date of the Feast of Unleavened Bread may refer to the following year, i.e. year 6 when 15–21 Nisan = April 29–May 6, 418. Here the year date comes at the beginning of the body of the letter and not at the end.

3. C 26:28 — 13 Tebet, 12 Darius II = January 12, 411. Here as in C 17:7 the date is written on the final (outer) band of the papyrus.

4. C 30:4||31: 3–4 — month of Tammuz, 14 Darius II = July 14–August 12, 410. This is a date cited within the body of a letter written to the governor of Judah.

5. C 30:30||31:29 — 20 Marcheshvan, 17 Darius II = November 25, 407. Date at end of letter.

6. C 64,20, 29 — this fragmentary letter has twice the regnal formula "year [*x*] of Xerxes" and once it apparently gives the month of "Sivan, year [*x*]." The letter reports the arrest of certain men.

7. A1 5–7:4–5 — [??] 29 Artaxerxes I = 436/5. Unfortunately the day and month in this official (semi-official) letter are missing so we cannot be certain that the month was Babylonian.

There are no contracts or lists/accounts which have exclusively Babylonian dates.

As intimated, the largest amount of chronological data consists of double dates in contracts of which 22 are intact or reasonably restorable and 6 are fragmentary. For purposes of analysis we divide this material into three groups: (1) perfect synchronism; (2) a one-day advance of the Babylonian date over the Egyptian date; (3) a difference between the two dates of between 2 days and 1 year. Of the seven documents whose date formulae are wholly or partially intact four show a perfect synchronism; a fifth, fragmentary one, may be restored to yield such a synchronism; two more were written in successive months by the same scribe, Mauziah B. Nathan, lack days, but the month dates correspond exactly (C 20; K 7). These are:

1. C 5:1 — 18 Elul = 28 Paḥons, 15 Xerxes = September 12, 471. Huber's printout shows a "possible" moon visibility for Elul of 27 August (as in Babylon), in which case 18 Elul = September 13 and this document would belong to the next category.

2. K 14:1 — 1 [+2+]5 = 8 Iyyar = 20 Tybi, [19 Artaxerxes] = May 1, 446. Parker's tables for Babylon give the new moon for Iyyar as April 25, so that 8 Iyyar would fall on May 2 and this was the date given by Kraeling. But Huber's printout for Elephantine shows a probable visibility (19 hours 54 minutes translation period) already for April 24.

3. K 4:1 — 25 Tishri = 25 Epiph, 31 Artaxerxes I = October 30, 434. Document drawn up for a Temple official.

4. K 5:1 — 20 Sivan = 7 Phamenoth, 38 Artaxerxes = June 12, 427. Document drawn up for an old man.

5. K 10:1 — 20 Adar = 8 Choiak, 3 Artaxerxes II (according to Egyptian new year beginning on 1 Thoth = December 2, 403) = March 9, 402. Document drawn up for an old man.

6. C 20:1 — Elul = September 2–September 30/October 1 = Pay[ni], 4 Darius II = September 2–October 1, 420. Scribe: Mauziah B. Nathan.

7. K 7:1 — Tishri = October 1/2–October 30 = Epiph, 4 Darius II = October 2–October 31, 420. Scribe: Mauziah b. Nathan.

An almost equal number of contracts shows a one-day difference. As stated, the Egyptian day ran from sunrise to sunrise and the Babylonian day from sunset to sunset. The simplest exlanation for this consistent difference (it almost never runs the other way, i.e. the Egyptian date being a day ahead of the Babylonian date) is the assumption that the document was written at night. Such a situation was posited by Horn and Wood but regarded by R.A. Parker as "wholly unlikely,"[46] yet there is definite evidence from Mishnaic times that documents were written at night (Git. 2:2). It was then that the Jewish soldiers and the other government employees would be off-duty. As noted, 3 of the 5 documents whose dates correspond exactly (Nos. 3–5) were written by a Temple official and/or an old man, presumably retired from active duty. Thus, at least seven and possibly eight, documents were written at night:

1. C 6:1 — 18 Kislev = January 3, 464 = [13+]4 = 17 Thoth, 21 (Xerxes)/accession year of Artaxerxes I = January 2, 464. For the new moon of Kislev there is a Huber possible date of December 16 (with a very low translation period of 4 hours 20 minutes), in which case Kislev 18 = January 2 and this document, too, would have been written during the day.

2. K 1:1 — 25 Phamenoth = July 6, 451 = 20 Sivan, 14 Artaxerxes I = July 7, 451. Like K 6 so this document places the Egyptian month first.

3. C 14:1 — 14 Ab = August 27, 440 = 19 Paḥons, 25 Artaxerxes I = August 26, 440. For the new moon of Ab there is a Huber possible date of August 15 (translation period 47 hours 12 minutes) which would put the Babylonian date *two* days ahead of the Egyptian one.

4. K 3:1 — 7 Elul = September 15 = 9 Payni, 28 Artaxerxes I = September 14, 437.

5. C 25:1 — 3 Kislev, 8 Darius II = December 17 = 12 Thoth, 9 Darius = December 16, 416. During the period between 1 Thoth in the Egyptian calendar and 1 Nisan in the Babylonian calendar, the scribe usually gave two regnal dates, since the Egyptian new year began some three months earlier than the Babylonian new year; so also in C 28 but missing from C 10 and K 10.

6. C 28:1 — 24 Shebat, 13 Darius II = February 11 = 9 Athyr, 14 Darius II = February 10, 410. For the double regnal year, see No. 5 above.

7. K 91 — 24 Marcheshvan = November 26 = 29 Mesore, 1 Artaxerxes II = November 25, 404.

8. C 15:1 — 24 Tishri = October 15, 449 = 6 Epiph, [16 Artaxerxe]s = October 14, 449. This date is much damaged. The numerical strokes of the Babylonian date are barely visible. Sayce-Cowley read "26" followed in this by all the early reviewers. But Cowley later restored "20[+5 (= 25)]" and he was followed in this by Horn and Wood.[47]

46 *JNES* 13 (1954), 19; *JNES* 14 (1955), 272.
47 *JNES* 13 (1954), 13.

Examination of the papyrus (Egyptian Museum, Cairo; October 26, 1989) shows the remains of only four numerical strokes, yielding 24 Tishri. For the Egyptian date six numerical strokes are present for Epiph. The papyrus had been turned down just before the first numerical stroke, possibly concealing a "10" or "20" Upon special request, the glass was opened and the papyrus straightened out. There was no hidden decimal. Thus, 24 Tishri would correspond with 6 Epiph in year 16 of Artaxerxes I if the document was written at night.

It would be possible to restore a fifth stroke to the Babylonian date (with Cowley, Horn and Wood) and arrive at a same day synchronism for 19 Artaxerxes (= October 14, 446). But paleographically it would be very difficult to squeeze in 19 for the regnal year. Even 16 is tight. In either case, the implications for Mibtahiah's family history are clear — she was married only twice and not thrice.

However well both these restorations work out, a word of caution is in order. Cowley 15 was drawn up by Nathan b. Anani, the scribe of three other contracts (C 10, 13; K 2). As we shall see, in none of them do we get either a same day synchronism or a one-day gap. Two are off by two days (C 13; K 2) and one by four days (C 10). Explanations for these divergences will be offered. But if Nathan was simply error-prone, then we cannot assume out of hand that he did not err here as well. There are at least three possible errors that would give regnal dates for 24 Tishri even more paleographically satisfying than the 16 Artaxerxes restored above:

3-day gap — in 13 Artaxerxes (452 B.C.E.), 24 Tishri = October 18 while 6 Epiph = October 15;

4-day gap — in 24 Artaxerxes (441 B.C.E.), 24 Tishri = October 16 while 6 Epiph = October 12;

7-day gap — in 21 Artaxerxes (444 B.C.E.), 24 Tishri = October 20 while 6 Epiph = October 13;

But no explanation for these gaps lies ready to hand, and we should prefer a correct synchronism, though paleographically tight, to a conjectural error, however paleographically pleasing.

In seven contracts the double dates deviate by more than one day. In two contracts the difference is two days (C 13; K 2); in one it is four days (C 10); in three it is a month (K 8; C 8||9); and in one it is a year (K 6). Errors of two days, a month, or a year may be explained as scribal errors. The difference of four days may have a calendrical explanation.

1. K 2:1 — 18 [A]b = 11 August ≠ [30 Pharmuthi], 16 Artaxerxes I = 9 August, 449. On the advice of R.A. Parker, E.G. Kraeling restored this text, "18 [Tammuz that is the 3rd day of the] month of Pharmuthi." But the left leg of the *taw* is very long and even the right leg of the *mem* often extends below the line. There is no trace of either of these letters below the crack on the papyrus. The slight trace of writing at the top of the crack is consonant with a *beth* which would give us *l*[']*b*, "of [A]b." The last day of Pharmuthi — the 30th — brings us within two days of the 18th of Ab. The new restoration requires considerable space between the individual words, especially between "30" and *lyrḥ*.

But there is almost as large a gap between *b-18* and *l*[']b. If we assume that this contract was written on the night of August 9 (= 17 Ab) then the difference between the two dates is reduced to one day. To account for it, we have to assume that the scribe, Nathan b. Anani, just ran ahead of himself by a day.

Another possibility has been weighed but found wanting. The two months before Ab were Sivan and Tammuz. The former had 30 days, the latter 29 and Ab again 30, following the regular alternating pattern. Had the pattern been different, namely 29–30–29, we might have posited the following: the new moon for Sivan was not observed in time and so that month was given 30 days. Therefore Tammuz was given only 29 and ended not on July 24 as at Babylon but on July 23. Thus 18 Ab = August 10 and the document would have been written on the night of August 9. But, as indicated, the length of the months (30–29–30) was such that only the unlikely assumption that Tammuz was assigned 28 days would give us the desired synchronism.

2. C 13:1 — 2 Kislev = November 19 ≠ 10 Mesore, 19 Artaxerxes = November 17, 446. Sayce-Cowley had read 3 Kislev. But several scholars (Hontheim,[48] Horn and Wood,[49] Pognon,[50] Smyly[51]) felt that there were only two strokes and examination of the papyrus shows that they were right. Some scholars also wanted to read the Egyptian day as "11" and not "10" (Horn and Wood,[52] Pognon;[53] cf. Gutesmann[54]). Thus 2 Kislev = November 19 = 11 Mesore = November 18 would give us a document written at night. But examination of the papyrus confirms the reading of "10" and if this document was indeed written on the night of November 17, then the scribe, once more Nathan b. Anani, ran ahead of himself by a day.

The same possibility considered but rejected for K 2 must be rejected here as well. For Tishri–Marcheshvan we have the order 30–29 days. Had it been reversed, namely 29–30 days, we might have posited that Tishri was given 30 days, and Marcheshvan only 29 and thus ended not on November 17 but November 16. Thus 2 Kislev = November 18 and an appropriate synchronism for a document written at night would have been achieved. But again, the length of the months (30–29) was such that only the unlikely assumption that Marcheshvan was assigned 28 days would yield the desired result.

3. K 8:1 — 6 Tishri = October 22 ≠ 22 Payni, 8 Darius II = September 22, 416. Here the scribe erred in the month. If he was already 22 days into the next Egyptian month of Epiph and yet still wrote the name of the previous month, Payni, then we get the

48 *Biblische Zeitschrift* 3 (1907), 230–31.

49 *JNES* 13 (1954), 11–12.

50 *JA* Series 10; vol. 18 (1911), 353.

51 *Proceedings of the Royal Irish Academy* 27 (1909), 240. Smyly writes "my friend Mr. Cowley informs me that it is quite possible that the original had only two" but in his 1923 edition of the papyri Cowley considered three strokes "probable."

52 *JNES* 13 (1954), 11–12.

53 *JA* Series 10; vol. 18 (1911), 353.

54 *REJ* 53 (1907), 196.

perfect synchronism 6 Tishre = October 22 = 22 Epiph. If this error strains the imagination, the opposite assumption does so even more — that only 6 days into Elul (September 22 = 22 Payni) he already anticipated the month of Tishri. The correct date should thus be 6 Tishri = October 22 = 22 Epiph, 8 Darius = October 22, 416.

4–5. C 8:1 (‖C 9:1 which is fragmentary) — 21 Kislev=December 30 ≠ 21 Mesore, 6 Artaxerxes = December 1, 459. Sayce-Cowley noted that there was a crease in the papyrus at the vertical fold immediately preceding the numeral "1" in the Egyptian month. While they did not believe that a numeral was hidden there, both Pognon[55] and Z.H. Jaffe (apud Bornstein)[56] did. Examination of the papyrus (Egyptian Museum, Cairo; October 21, 1989) revealed an ink mark at the right edge of the vertical crack. The rest of the mark was doubtless hidden on the left edge of the vertical crack that had slipped beneath the right edge. The mark could well be a "20." Again the scribe erred in the month, but in the opposite direction from K 8. Though only 21 days into Marcheshvan, he already wrote the name of the next Babylonian month of Kislev. The corrected date would yield the perfect synchronism 21 Marcheshvan = 21 Mesore, 6 Artaxerxes = December 1, 459. The error would have been repeated in the companion document C 9; there, traces of Kislev are clearly evident but the sign for "20" in the Egyptian date is completely lost in the hole. Alternatively, we achieve the same date if we assume a failure to intercalate a second Adar in 459. But such a failure would have been strange since three years would already have elapsed since the previous intercalation in 462. Without intercalation 1 Nisan would have fallen on March 20, a uniquely early date.

6. K 6:1 — 8 Pharmuthi = July 11 ≠ 8 Tammuz, 3 Darius II = July 22/23, 421. But if the scribe erred and omitted another, fourth stroke in the year date then we once more get a same-day synchronism — 8 Tammuz = July 11 = 8 Pharmuti, 4 Darius = July 11, 420. Horn and Wood took this lag of one year as evidence for a Jewish calendar beginning in Tishri, so that Tammuz would still fall in year 3 and no scribal error need be assumed. They placed special emphasis on the unusual reverse sequence of the months. The Babylonian-Jewish, rather than the Egyptian, month was made to precede the year date to indicate that the year was to be calculated according to the Jewish reckoning.[57] But in K 1 we have the same reverse order with a date in the month of Sivan, i.e. the period between Nisan and Tishri, 14 Artaxerxes. Were this date also given according to the Jewish year, then it would be at that point one year behind the Babylonian year. But 20 Sivan, 15 Artaxerxes = June 27 ≠ 25 Phamenoth = July 6. Similarly, none of the other double dates occuring between Nisan and Tishri would correspond.

These six deviations can thus be rectified on the assumption of scribal error. The following is best accounted for by calendrical considerations:

55 *JA* Series 10, vol. 18 (1911), 357–58.
56 *Harkavy Festschrift*, 66.
57 *JNES* 13 (1954), 14–16.

7. C 10:1 — 7 Kislev = December 14 ≠ 4 Thoth, 9 Artaxerxes = December 18, 456. In addition to the four-day difference, this date formula poses another problem. The scribe, here too Nathan b. Anani, fails to give us a second year date for a period that falls between 1 Thoth and 1 Nisan (as in C 25 and 28). Such an omission also occurred in K 10 where a same-day synchronism is achieved if we assume that the regnal year, 3 Artaxerxes II, is the Egyptian year while the Babylonian year would still have been dating by 2 Artaxerxes II. A comparable assumption here would mean a Babylonian year of 8 Artaxerxes which would mean 7 Kislev = November 25, several weeks behind 4 Thoth = December 18. It is preferable to assume that 9 Artaxerxes = 456 Babylonian year is the correct date. Solution to our problem thus lies in a different, if bolder direction. If we assume that the scribe forgot to take account of the 5 epagomenal days at the end of the Egyptian year and 4 Thoth is an error for the 4th epagomenal day then it would be December 13 and we would have 7 Kislev = December 14 = 4 epagomenal = December 13, 456. The document would thus have been written at night. Another way to bring the two dates in line is to assume a double error — the scribe omitted the numeral "20" from the Egyptian regnal year and failed to note that the Babylonian year was still "28." This would give 7 Kislev, (28 Artaxerxes) = December 14 = 4 Thoth, 29 Artaxerxes = December 13, 437, identical with the synchronism above except for the year.[58] The preceding solution is preferable because it assumes but a single error.

In addition to these 22 double dates that are virtually intact there are six other fragments whose paleographical and schematic restoration makes it likely that they too were part of a double date:

1. P. Berlin 23107 — [*x* Babylonian month = *y* Egyptian month, year *z*+]2 Xerxes. The earliest double dated document (C 5; see above) stems from 10+ 3 + 2 (= 15) Xerxes = 471 B.C.E. There does not seem to be a numeral stroke immediately preceding the 2 strokes in our fragment so a date such as [10+ 3 +]2 (= 15) or [10 +]2 (= 12) Xerxes = 474 would be plausible.

2. C 67,4 — [*x*] Adar = [*y* Egyptian month, year *z*]. Onomastic (PN b. Kon; detachment of Ar[tabanu]) and paleographic factors suggest a date at the end of the reign of Xerxes–beginning of the reign of Artaxerxes.

3. Fragment 48 of 96 Unpublished Fragments — 20 Nisan = day 2 [+*y* Egyptian month, year *z*]. Artaxerxes or Darius II.

4. C 67,1 — [*x* Babylonian month = *y*] Tybi, y[ear z]. The detachment of Iddinnabu points to the end of the reign of Artaxerxes (K 5:2) or the beginning of the reign of Darius II (C 20:2; K 7:2).

5. C 65,5 — [*x* Babylonian month = 1 +]8 (= 9) At[hyr, year *z*]. Schematic (presence of *yrḥ* before Egyptian month) and paleographic features argue for a date in the reign of Artaxerxes.

6. C 68, 2 + Fragment 94 of 96 Unpublished Fragments — [*x* Babylonian month = *y* Egyptian month, year *z* of Artaxerxe]s/[Dariu]s.

58 This is the proposal of Horn and Wood, *JNES* 13 (1954), 12–13.

Examining these double dates, errors and all, scholars debated whether the Jews employed their own calendar, whether it began in Nisan or Tishri, or whether they employed the Babylonian calendar, beginning in Nisan, adopted by the Persian Empire. Since the texts belonged to a Jewish community it was assumed out of hand that the calendar was Jewish (Schürer[59] followed by F. Westberg,[60] Knobel,[61] Fotheringham,[62] Gutesmann,[63] Ginzel,[64] Sprengling[65] and recently Horn and Wood[66]). But others maintained that the calendar was Babylonian (Mahler,[67] Pognon,[68] Sidersky,[69] and recently Parker[70]).

Identification of the calendar, whether Jewish or Babylonian, has implications for our own understanding of the relationship between the twin fortress of Elephantine and Syene. Several documents speak of *ḥyl' yhwdy'*, "the Jewish force, garrison" (C 21:1, 10, 22:1) or *yhwdy' kl' b'ly yb*, "the Jews, all (of them), citizens of Elephantine" (C 30:22||31:22) but they are also referred to as *swnknn zy byb mhḥsnn*, "Syenians who are hereditary property-holders in Elephantine" (C 33:6). What then are we to make of an account of rations supplied to *ḥyl' swnkny'*, "the Syenian garrison" (C 24:33)? In a list of 54 recipients, only the last 24 or so names are preserved and only three of these may be considered Jewish — Haggai b. Shemaiah, [PN b.] Nathan and [○ ○] *nikkal* b. Uri (C 24:3, 11, 26). The annual total is recorded in the last fragmentary column and this seems to have contained a double date which we may restore, taking our cue from Cowley, in one of two ways:

1. [From 28 Iyyar = 29 Me]ḥir, year 4 until [29 Iyyar =] 20 Meḥ[ir, year 5] = June 2, 420–May 24, 419. The regnal years would be the 4th and 5th of Darius II and we would have a somewhat plausible reconstruction for accounting purposes: distribution of grain at the end of the month for a period of 12 months (cf. 100 ardabs [the total in line 32] x 12 = 1200 ardabs with the given total, partially restored, of [1]446 ardabs, 2 g[riv]), 4[+ 1 = (5)] h(andfuls) [line 38]. The 240 or so difference would be accounted for by a monthly variation in the number of recipients).

2. [From 13/23 Iyyar = 19/29 Me]ḥir, year 4 until [24 Iyyar =] 20 Meḥ[ir, year 5] =

59 *Theologische Literaturzeitung* 32 (1907), 65.
60 *Biblische Chronologie*, 109–10.
61 *Monthly Notices of the Royal Astronomical Society* 68 (1907–08), 334–35.
62 Fotheringham "suppose(s) that as the Jews of Elephantine had a temple of their own, they had their own council of priests or elders who regulated the beginning of the month by strict rules and the beginning of the year according to their own discretion." *Monthly Notices of the Royal Astronomical Society* 69 (1908–09), 20; *JTS* 14 (1913), 570–75.
63 *REJ* 53 (1907), 194–200.
64 *Handbuch der . . . Chronologie II*, 45, 50.
65 *AJSL* 27 (1911), 233–39.
66 *JNES* 13 (1954), 1–20.
67 *Zeitschrift für Assyriologie* 26 (1912), 74 = *Handbuch der jüdischen Chronologie*, 355.
68 *JA* Series 10; 18 (1911), 338–39, 358–65.
69 *JA* Series 10; 16 (1910), 591–92.
70 *JNES* 14 (1955), 271–74.

May 18/28, 401 – May 19, 400. The regnal years would be the 4th and 5th of Artaxerxes II/Amyrtaeus and we would thus align this document with C 22. The handwriting in both documents is identical and there are good prosopographical considerations for dating C 22 to 400. In either case, the implications of the double date are significant. For Cowley they were as follows: "If the Jewish month was mentioned here, it points to the conclusion that the 'Syenian garrison' was the same as, or part of, the *ḥyl' yhwdy'*, and that these accounts relate to the Jewish colony." The overwhelming number of non-Jewish names in this list leads me to the opposite conclusion — the Syenian garrison was composed essentially of non-Jewish Arameans and the restored month of Iyyar belongs to the Persian-Babylonian and not the Jewish calendar.

It is just this Persian-Babylonian calendar that appears in the double date formula on the sandstone stela "building" inscription from Aswan: "This temple (*brazmadana-*) PN the garrison commander of Syene made in the month of Sivan, that is Meḥir, year 7 of Artaxerxes the King. . . ."[71] In 458, Sivan ran from June 6 to July 5 and Meḥir from May 15 to June 14 so that this stela must have been erected between June 6 and 14, 458 B.C.E. The date formula here is the same as in C 20 and K 7 where no day is given for either month. As usual, the Babylonian month appears first. In neither case do we have a Jewish calendar.

Confirmation of this conclusion is to be found in the chronological data from Memphis (Aimé-Giron; Segal; KAI 267; Ashmolean) and elsewhere (C 83; Pap. Levi Della Vida; Spiegelberg ostracon). Almost all of this material is fragmentary but enough can be pieced together to allow appropriate conclusions. Almost none of it concerns Jews. We find here as at Elephantine documents dated according to each of the three systems. Eight or nine fragments bear only an Egyptian date. They are accounts (Segal 24, 72, 117[?]), lists (AG 87; C 73, 83), a court record (Segal 30, to be combined with Segal 28 + 61), a tomb inscription (KAI 267), and a salt tax receipt (Spiegelberg ostracon):

1. Segal 24:3, 5 — "[from] the month of Thoth to the month of Pharmuthi," i.e. from early December to early July.

2. Segal 72a+b — [*x*+]1 Payni, i.e. September. It is possible that this was preceded by a Babylonian month.

3. Segal 117b:1 — perhaps "in Ath[yr]," i.e. in February.

4. AG 87:7 — "The ration in the [mon]th of Paḥons," i.e. August.

5. C 83 — a late fragmentary list beginning "On 4 Tybi" with each line giving a successive date and a quantity of ardabs. Tybi is April/May.

6. Segal 30a:1 — "[On the 10/20+4+]4 = (18th/28th) of Athyr, year 34" probably of Artaxerxes I = February 24/March 6, 431. It is possible, but not likely that a synchronous Babylonian date preceded the partially restored Egyptian date.

71 M.H. Bogoliubov, "An Aramaic Inscription from Aswan" (Russian), *Palestinskiy Sbornik* 15 (1966), 41–46.

7. C 73:28, 36 — the unpublished verso of a list with the fragmentary notation "[...] of Pharmuthi" = July/August.

8. KAI 267:3 — "In year 4, month of Meḥir, of King Xerxes" = May 20–June 18, 482.

9. Spiegelberg ostracon — "30 Tyb[i], year 33" probably of Ptolemy II = March 23, 252.[72]

Three or four fragments and one complete piece bear only a Babylonian date. One text is clearly a record of court procedures (Segal 10); another appears to be a student-engraver's exercise (Ashmolean); and the latest is a consignment of oil (Papyrus Levi Della Vida):

1. Segal 10 col. 1:6sl, 8 — "]Iyyar, year 25;" "on the 29th." Assuming that the second date is related to the first, we get June 15, 440.

2. Segal 42a:2 — "month of Tishri, y[ear *x*]".

3. Segal 23b:3 — perhaps "from Ab".

4. Ashmolean — "On 24 Ab, year 2 of Artaxerxes" = August 19, 403.

5. Papyrus Levi Della Vida — "On 2 S(i)van," "on the 5th of it," "on the 6th," "on the 10th," "on the 14th," "on the 21st," without year date, though some time in the 3rd century.[73]

Some five sets of double dates may either be posited or have been reconstructed. Three sets appear in what has been termed the Journal of the Memphis Arsenal (AG). By a papyrological and chronological *tour de force* several fragments of this journal were combined by Parker and Bowman[74] to yield three columns of entries for 14 Xerxes = 472/71, the same year as the first double-dated contract from Elephantine (C 5). It would seem that each month appeared on a different scroll, with the entries for the latter half of the month being written on the verso. It is this assumption, namely that the scribe always wrote first on the side parallel to the fibers (= recto), that underlies our reconstruction of the first set of fragments (contra Parker). Fragments for three months are preserved: (Tishri = Epiph, year ?; Adar, year 14 = Choiak, year 15; Nisan, and Tybi, year 15).

1. AG 8 — Tishri = Epiph. The year date is missing in this synchronism and Parker restored it so as to yield the same Babylonian year (14 = 472/71) as in the next two sets of documents.[75] He did so, however, at the papyrological expense of placing the verso before the recto, as follows:

72 Acquired by W. Spiegelberg in 1927 at Luxor, this ostracon was published without photograph by M. Lidzbarski, "Epigraphisches," *OLZ* 30 (1927), 1043–44. The tax was paid on the last day of the fiscal year. For the chronology of the early Ptolemaic period see P.W. Pestman, *Chronologie égyptienne d'après les textes démotiques (332 av. J.-C.–453 ap. J.-C.)* (Leiden, 1967), 12ff.

73 E. Bresciani, "Un papiro aramaico di età tolemaica," *Atti della Accademie Nazionale dei Lincei, Rendiconti Classe di Scienze morali, storiche e filologiche* Series VIII, 17 (1962) 258–64.

74 R.A. Parker, "Persian and Egyptian Chronology," *AJSL* 58 (1941), 285–301; R.A. Bowman, "An Aramaic Journal Page," *AJSL* 58 (1941), 302–13.

75 R.A. Parker, *AJSL* 58 (1941), 295–98.

verso: 19 Tishri [= 11 Epiph, year 14 =] October 25, [472]
20 Tishri [= 12 Epiph, year 14 =] October 26, [472]
21(?) Tishri [=13(?) Epiph, year 14 =] October 27(?), [472]
recto: [27 Tish]ri = 19 Epiph, [year 14 =] [Novemb]er 2, [472]
[? Tishri = ? Epiph, year 14 = November ?, 472]

But if we move back one year to Xerxes 13 = 473 then we get an exact synchronism which allows us to maintain the accepted papyrological order of recto-verso. We also get a separate scroll for Tishri with the turn-around from recto to verso falling after 18 Tishri.

recto: [17 Tish]ri = 19 Epiph, [year 13 =] [Novemb]er 2, [473]
[18 Tishri = 20 Epiph, year 13 = November 3, 473]
verso: 19 Tishri [= 21 Epiph, year 13 =] November 4, [473]
20 Tishri [= 22 Epiph, year 13 =] November 5, [473]
21(?) Tishri [= 23 Epiph, year 13 =] November 6(?), [473].

For determination of the regnal year see No. 2.

2. AG 10–11, 13–15, 20; also AG 5 — The restored text has preserved the last 1 1/2 columns of the recto and the first column of the verso. The latter half of the first column (recto) has preserved the Egyptian date (1 Choiak) and the royal year (10[+3+]2 = 15). The two entries in Col. 2 (recto) have virtually intact two double dates. The column on the verso has a fully preserved double date and this serves as the basis for reconstructing the other dates:

24 Adar, year [11 +]3 (= 14) = March 26 ≠ 9 [Choi]ak, year 15 = March 27, 471.

The dating formula follows the same principles employed by the Elephantine scribes: (1) Babylonian month precedes the Egyptian month; (2) in the period between 1 Thoth and 1 Nisan, the Egyptian regnal year is one year ahead of the Babylonian and so both are listed (cf. C 25, 28). Since a contract was a self-contained document, the name of the king in whose reign it was drawn up had to be stated. In a journal, it need only be stated at the outset. To identify the king and achieve a same-day synchronism, we have to assume that the beginning of the month was still fixed by observation and not calculation. According to Huber's tables, in the 14th year of Xerxes at Memphis, Shebat had 29 days. If the evening of the 29th of Shebat had been cloudy at Memphis and the crescent not seen, Shebat would have been given a 30th day and Adar begun not on March 3 (as we should have expected from Huber's tables for Memphis) but on March 4. Thus it would turn out that 24 Adar = March 27 = 9 Choiak.[76] The four dates on this restored papyrus, listed in chronological order, are thus:

recto: col. 1 — [16 Adar, year 14 =] 1 Choiak, year 10[+3+]2(= 15) = March 19, 471

76 *Ibid.*

col. 2 top — 18 A[dar], year 14 = 3 Choiak, year [15] = March 21, 471
col. 2 bottom — 23 Adar, year 14 = 8 Choiak, year [15] = March 26, 471
verso:top — 24 Adar, year [11+]3(= 14) = 9 [Choi]ak, year 15 = March 27, 471.

The Egyptian month preceding Choiak is Athyr and one of the papyrus fragments (AG 5) has preserved "day 21 of Athyr." If this fragment belonged to our scroll then it could be restored:

[6 Adar, year 14 =] 21 Athyr, [year 15] = March 9, 471.

Ten days would have separated this entry from the first one in the reconstructed piece while only six days remained between 24 Adar and the end of the month. If we assume that each month had its own scroll, then the accounting on the verso would have run out before it fell opposite the sheet on the recto that recorded the activities of 6 Adar. Therefore that sheet has no writing on the verso.

3. AG 12, 18 — The corresponding Egyptian and Babylonian months after Adar and Choiak are Nisan and Tybi. One fragment (AG 12) is written on the recto and has the second half of a double date with "[Ty]bi, year 15" preserved. As in the previous case, so here we may assume that a separate scroll existed for Nisan and whatever accounts did not fit on the recto were recorded on the verso. We may restore the two dates as follows:

recto: AG 12 — [18–29 Nisan = 1–12 Ty]bi, year 15 = [Ap]ril [18–29,] 471
verso: AG 18 — 30 Nisan [= 13 Tybi, year 15 =] April 30, [471]

4. Segal 95a:1 — "[*x*] of Tishri th[at is *y* of Egyptian month]." Though a tiny fragment, the formula clearly suggests a double date.

5. Segal 22:3 — "[that da]y 1 of Tybi, year 20[+1?]."

As stated, none of these documents concerns Jews. All are part of the Persian judicial or fiscal administration.

The most dramatic double date was uncovered only recently in a most unexpected place, and it shows the extent to which both dating systems were part of bureaucratic consciousness. The source is Cowley 72, formerly known as Papyrus Luparensis because it was acquired by the Louvre as part of the Drovetti collection.[77] This piece too is part of a record of accounts written on the recto and verso, specifically disbursement of wine, both local Egyptian wine and imported Sidonian wine. The parties involved are Egyptians, with an Aramean name here (*z*ʿ*r*, Zeir [recto: Col. 2, line 5]) and a Persian name there (read *bgwd*, *Bagavada, "Bringer of Luck"[Shaked, orally; verso Col. 2 line 2]). The two dates in the first two lines of Col. 2 recto are 1 and 2 Phaophi. The two dates at the top of Col. 2 verso are the 23rd and 24th of Choiak. Phaophi is the second month of the Egyptian year and Choiak the fourth. The scroll must have covered disbursements for five-six months. The regnal year was probably recorded at the beginning of the scroll. As read by Cowley, the entry for the 25th of

77 See note 1.

Choiak read *zy hw ywm lndr*, "which was the day of a vow" (C 72:18). When I looked at a photo of the papyrus supplied by the Louvre I noticed the numeral stroke "1" after *ywm* and saw that *ndr* had to be read *nys*. Certainly *nun* must have been hidden in a crease which was evident in the photograph. Sure enough, once the papyrus was smoothed out by the conservator of the Department of Egyptian Antiquities, Mme. Marie-Françoise de Rozières, the true reading was revealed — *hw ywm 1 lnysn*, "that is day 1 of Nisan." When the Aramean scribe, dating according to the Egyptian calendar, reached the Babylonian New Year, he felt it appropriate to take note thereof. Having done so, he continued with the Egyptian dates, 26th, 28th, 29th of Choiak with no more mention of Nisan. Given the special circumstances in which this double date was drawn up, there is no reason to doubt its accuracy. Calculation gives two possible synchronisms — in 422 both 1 Nisan and 25 Choiak fall on March 31. In 411, 1 Nisan falls on March 29 and 25 Choiak on March 28. This latter date would be possible were the record made on the night of the 28th. In either case the new date falls several decades earlier than was generally assigned to this papyrus purely on the basis of paleographic considerations. Until now, it was considered a parade example of a text of the 4th century; either ca. 375 B.C.E.[78] or as late as 350 B.C.E.[79] A half-dozen or so other papyri and ostraca (AG 4bis, 86bis, 87–89; Pap. el-Hibeh) have been dated either slightly earlier than this text or later than it because their script was judged to be respectively either less developed (AG 4bis, 86bis, 87–89)[80] or more developed (Pap. el-Hibeh)[81] than its script. These determinations will now have to be re-examined.

Our chronological investigation leads to the following conclusions:

1. Contracts were almost universally dated, and at the beginning. Private letters were occasionally dated, but at the end.

2. The Babylonian and Egyptian calendars were synchronously observed between the years 473 and 402, both in private contracts and stone inscriptions from Elephantine and bureaucratic records from Memphis (AG) and elsewhere(?) (C 72). The Babylonian date regularly appeared first.

3. Prior to 482 contracts and stone inscriptions bore only an Egyptian date (Bauer-Meissner, C 1, 2||3, 11; KAI 267) and after 413 most contracts again bore only an Egyptian date (C 7, 29, 35, 43, 45; K 11, 12; P. Leiden).

4. The Egyptian calendar was regularly used in the dating of private letters (Padua 1, C 37, 42; Ḳ 13) and accounts (C 22, 63, 68, Aḥiqar palimpsest), all but one (Aḥiqar palimpsest) stemming from the end of the fifth century, and appears on an isolated tax receipt from the middle of the third century (Spiegelberg ostracon).

5. The Babylonian calendar was regularly used in the dating of official letters and

78 Naveh, "Aramaic Script," 48.

79 F.M. Cross, "The Development of the Jewish Scripts" in G.E. Wright, ed., *The Bible and the Ancient Near East*, (Doubleday Anchor Book), 178.

80 *Ibid.*

81 Naveh, "Aramaic Script," 43–44, 48–49.

stone inscriptions, also stemming from the last quarter of the fifth century (C 17, 21, 26, 30||31; Ashmolean), and is found in a Ptolemaic record of accounts (Papyrus Levi Della Vida).

6. Of 24 double-dated documents (C 5, 6, 8, 9, 10, 13, 14, 15, 20, 25, 28; K 1–10, 14; AG 10–11, 13–15, 20 [all one piece]; sandstone stela) seven have precise synchronisms (C 5, 20 [only month]; K 4, 5, 7 [only month], 10, 14 [restored]), eight synchronize if written at night (C 6, 14, 15 [restored], 25, 28; K 1, 3, 9), eight have scribal errors (C 8 ||9, 10, 13; K 2, 6, 8) or require special explanation (AG) to achieve proper synchronism, and one (with only month dates) synchronizes in only one week of the corresponding months (sandstone stela).

7. Of the four contracts written by Nathan b. Anani, three have noncongruencies of more than one day (C 10, 13; K 2) and the fourth is restored (C 15).

8. Chronological determination must go hand in hand with papyrological (AG) and paleographic (K 2) considerations.

9. There is no evidence for a Jewish calendar at Elephantine as distinct from the Babylonian calendar.