"Babylonia and Elam. The Evidence of the Calendars"

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Elam and Babylonia: the Evidence of the Calendars*

Pochi sanno estimare al giusto l’immenso benefizio, che ogni momento godiamo, dell’aria respirabile, e dell’acqua, non meno necessaria alla vita; così pure pochi si fanno un’idea adeguata delle agevolità e dei vantaggi che all’odierno vivere procura il computo uniforme e la divisione regolare dei tempi.

Giovanni V. Schiaparelli, 1892

Babylonians and Elamites in Venice

Every historical research starts from a certain point in the present in order to reach a far-away past. But a journey has some intermediate stages. In order to go eastward, which place is better to start than Venice, the ancient Seafaring Republic? If you went to Venice, you would surely take a look at San Marco. After entering the church, you would probably raise your eyes, struck by the golden light floating all around: you would see the Holy Spirit descending upon peoples through the preaching apostles. You would be looking at the 12th century mosaic of the Pentecost Dome just above your head. Would you be surprised at the sight of two polished figures representing the residents of Mesopotamia among other ancient peoples?

In order to understand this symbolic representation, we must go back to the end of the 1st century AD, perhaps in Rome, when the evangelist described this scene in the Acts of the Apostles and compiled a list of the attending peoples. If you had an edition of Paulus Alexandrinus’ Εἰσαγωγή εἰς τὴν ἀποτελεσματικὴν (an “Introduction to Astrology” dated at 378 AD) within your reach, you should

* I would like to thank Prof. Antonio Panaino (University of Bologna, branch of Ravenna) for his support and for giving me the opportunity to speak about Elamites in Chicago, a city which has a strong tradition in Elamite studies. For this reason, I would also like to thank the Assyrian Community of Chicago: I shall not forget the enthusiasm for those who, as Dr. Norman Solhkhah said, “discovering, cleaning and reading – as we read English or speak Aramaic [i.e. modern Assyrian] – dusty tablets, study our history.” I wish to express my gratitude to Dr. François de Blois (School of Oriental and African Studies, London) for the draft of his essay on Iranian calendars, and to Dr. Grazia Giovinazzo (Istituto Universitario Orientale, Napoli) for the researches on ra-hal. A special thank goes to Dr. Maria Cristina Casaburi, Dr. Giancarlo Lacerenza (Istituto Universitario Orientale, Napoli) and Franco Morisi for many reasons. Thanks to Federica Sarti for having kindly checked my English, and to Mons. Antonio Meneguolo (Procuratoria di San Marco, Venezia) for iconographical researches.

1 Schiaparelli 1926: 237-238.
3 Acts 2:9-11. GNT: “(9) Πάντες δὲ καὶ Μῆθι καὶ Ἐλαμίται καὶ οἱ κατοικοῦντες τὴν Μεσοποταμίαν, Ἰουδαῖαν τε καὶ Καππαδοκίαν, Πόντου καὶ τὴν Λαῖαν, (10) Φυγὼν τε καὶ Παμφυλίαν, Ἀχαιόν καὶ τὰ μέρη τῆς Λιβύης τῆς κατὰ Κυρήνην, καὶ οἱ ἐπιδημιοῦντες Ῥωμαίοι, (11) Ἰουδαίων τε καὶ ἑπτήνων, Ἑβραίσι καὶ Ἰουδαίσι, ἐκείνων λαλοῦντων αὐτῶν ταῖς ἡμετέραις γλώσσαις τὰ μεγαλύτερα τοῦ θεοῦ.”
open it near the end of chapter β’ entitled Περὶ τῶν δώδεκα ζώδιων “On the twelve zodiacal signs,” and you would find a similar list⁵ which attests a common background originating from Babylonian-Hellenistic astral geography. Concluding this vein of conjectures, if the scholars⁶ who say that Luke copied the list from an astral geography were wrong,⁷ we might imagine that some Babylonian Jews were in Jerusalem to accomplish the pilgrimage on the Feast of Weeks (Σαββατοκύριακον) near 30 AD. Anyway, more than 2500 years after the end of the Babylonian kingdom, one can go to Venice and see two Babylonians!

Babylonia, Jerusalem, Rome, Venice, Chicago: the authors of the famous Hebrew captivity ended up in a book, then in a mosaic, and now we are talking about them. But our journey has to go further in space and in time to see a Babylonian heritage in the East. Going back to the mosaic, to the left of the Mesopotamians one can see another people: the writing “ELAMIT” at the top of the figures helps us in recognizing two gray-dressed Elamites.

If there were Babylonian Jews in Jerusalem at Pentecost, there could be Jews from Elam as well⁸: in the book of prophet Isaiah⁹ we find mention of some Jews scattered in Elam, as it is suggested also from Esther’s story set at the Persian court in Susa.¹⁰ On the other hand, the usage of the ethnonym Elamites is not anachronistic: although Elam as a political organization disappeared in the 6th century BC, it survived as a geographic denomination (perhaps also with an ethnic connotation) till the 14th century AD, when the name Elam identified the ecclesiastical province of the Nestorian church located in Khuzistān (the ancient Susiana).¹¹ It is noteworthy that Elamites together with Parthians and Medes replace Paulus Alexandrinus’ Persis in the Acts, which should attest a more recent form of the tradition.¹²

Introduction

The proximity of the Elamite and the Mesopotamian peoples hides a deeper significance. One might say that Elamite culture can not be known without looking both westward at the ancient Mesopotamian civilizations at first and then eastward at the incoming Persians. The same might be said about the Elamite calendar. Here I shall briefly discuss the development of the Elamite calendar during the 2nd millennium and the first half of the 1st millennium BC on the grounds of the

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⁵ Boer 1958: 8, lines 1-8. This is a summary (with some omissions here restored in square brackets) of the preceding sign by sign treatment: Προσπαθεί τε ταῖς χώραις τα ζώδια τα μὲν Κρίς τῇ Περσίδι, ὁ δὲ Ταφρός τῇ Βαβυλωνίᾳ, ὁ δὲ Δίδυμος τῇ Κασπαράκοιᾳ, ὁ δὲ Καρκινός τῇ Λιβανίᾳ, ὁ δὲ Λέων τῇ Λιβαδίᾳ, ὁ δὲ Παρθένος τῇ Ελαίαν (καὶ Ιωάννῃ), ὁ δὲ Ζεύς τῇ Λυβίᾳ (καὶ Κυρήνῃ), ὁ δὲ Σερπίς τῇ Ιταλίᾳ, ὁ δὲ Τοῦμπας τῇ (Καλέας καὶ) Κρήτῃ, τοὺς Αγωνοκόρος τῇ Συρίᾳ ἐπονομαζομένους, τοὺς Υλοργόνα τὴν Ἁγίαν νεοτὸς, τῶν Ίηθῶν τὴν [Ερμαθάνθι τολμάσαν καὶ] Τυνδαῖον χώραν προσωρινώς.

⁶ Weinstock 1948; Brinkman 1963. See also Cumont 1909.


⁹ Isaiah 11:11.

¹⁰ Esther 2:5-7.


occurrences of both Elamite and Babylonian month-names. At the end of this time span, the Old Persian calendar made its appearance abruptly, interposing between the other two.

I must take the assumption that Elamites used a luni-solar calendar for granted. Unfortunately there is no direct evidence for this and we must be careful not to take the Elamite calendar as a whole, without internal subdivisions by periods and areas.

Because of a strong Mesopotamian influence starting from the second half of the 3rd millennium BC, Elamites should have adopted a luni-solar calendar like Sumerians and Babylonians. On the other hand, Mesopotamian menologies of the 1st millennium BC and the intercalary scheme K. 3923 make sense only from this point of view.

The Elamite calendar in Achaemenid time is generally associated with the Old Persian calendar, which is in turn superimposable to the Babylonian calendar. The lunar fashion of the Old Persian calendar can be inferred from Darius’ Bīsotūn inscription where day numbers in the Old Persian version coincide with those in the Babylonian one. After more than 20 years, the Aramaic glosses in some Persepolis Fortification tablets attest correspondences between Old Persian and Babylonian month-names which are coherent with the Bīsotūn ones. So the intercalation system should be quite similar, if not the same.

I shall outline the Elamite calendar in a wider perspective because the study of a local calendar is not a local matter: reckoning time involves politics, cultic needs, cultural influences and social dynamics (in Elam also sociolinguistics).

Time, Gods and Power

Our time flows meekly within the embankments of days, months and years, according to a regular rhythm in which the only foreseeable variation is represented by the added day in leap years. We owe this to a relatively unknown astronomer from Naples, Aloysius Lilius (1510-1576). Nevertheless, if we want to name our calendar, we will use the name of Pope Gregory XIII, who supported the

14 De Blois, unpublished.
15 See footnote 90.
17 PF 855, PF 857, PF 858 and PF 968, all belonging to the 23rd regnal year of Darius.
18 Here I can not go deeply into the debated question of be-ip-ti-ka. See Hallock 1969: 75, Hartner 1985: 740-748 (however W. Hartner seems to forget that there is another word indicating an intercalary month, mešana, and it is attested exactly in the 19th year with the 6th Old Persian month in PF 660:8, PF 894:11 and PF 1943:3; see also PF 1790:18 with 2-um-me-na), Hinz/Koch 1987: 181-182, “be-ip-ti-qa" (however they consider as scribal errors 6 on 7 occurrences; the miscalculations in PF 1073 could have nothing to do with improper use of language). De Blois, unpublished, gives an accurate meaning to beptika on the ground of the etymology of the corresponding Old Persian word hm集成电路 in Darius’ Bīsotūn inscription (for example DB §54). After Parker/Dubberstein 1956, a list of intercalations is in Walker 1997: 23 (see column Persepolis) which however missed the following: two intercalations in the 22nd year (probably, PF 873:9 and PF 875:11 marked by KI.MIN) and one (probably, PF 879:10 marked by 2-e-da-na) in the 27th year of Darius.
19 About ethnic and linguistic stratifications in Achaemenid time see Rossi 1981 and 1984, Potts 1999: 337-345.
1582 reform. In order to understand the role of politics in reckoning time, we must consider the time of gestation and the troubles which the new calendar met around the world. A calendar needs the support of political powers.

The calendar was the human endeavour to dominate time, intended as the immediate expression of the divine world. Royal ideology implied this control. Consider these needs: taxing people, computing loan interest, regulating trade between remote lands, fixing a diplomatic appointment and celebrating a ritual feast.

The Babylonian calendar with its month-names was a powerful standard in ancient near East since the beginning of the 2nd millennium BC. Maintaining a different calendar system was a mark of political autonomy, while having different month-names implied at least a strong local community.

Excursus: Deified Month-Names

In Achaemenid Elamite the words *ITU* “month” and *na-an* “day” are almost always marked by a star, the cuneiform sign *AN*, a reminder of the tight tie with the heavenly gods who ruled over time rhythms, specifically Moon and Sun. But even month-names, both the Old Persian and the Elamite ones, were often preceded by this divine determinative: such habit is unprecedented before Darius’ Bisotūn inscription and apart from its Elamite version.

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<td>sum</td>
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Elamite texts from Tall-i Malyān (11th century BC) employed in case the locative determinative *AŠ* before *ITU* (however, afterwards it became an integral part of the sign *ITU*) or *UD* “day,” but never before a month-name.

In Achaemenid period from Persepolis, 72% of the published Elamite tablets (510-494 and 492-458 BC) bearing month-names have the divine determinative before month-names. This percentage is homogeneous even into separate regnal years, i.e. there is no significant evolution in time.

Even if Old Persian script does not have the capability to write determinatives, indeed this habit seems to originate with Old Persian month-names: one could

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20 See Coyne/Hoskin/Pedersen 1983, especially Hoskin 1983 and Gingerich 1983. Duncan 1998 is a more novelized reference which however underlines very well the political factor in reckoning time.

21 Hoskin 1983: 263.


In PF 1779:8 there is one of the extremely rare occurrences of *ITU* without the divine determinative; *na-an* is attested sometimes also with the locative determinative.


24 Both Fortification and Treasury tablets, including data inferred from unpublished tablets quoted in Hinz/Koch 1987 and in Hallock’s glossary (Hallock 1969: 663-776). This is the data base of “Lankelli” (Basello 2000), queried throughout this paper.
refer to the Zoroastrian calendar where each month and each day in a month is entitled to a god or related to religious concepts. It could be that each month was represented by a god, but I think that it is first of all the “sealing” of the Moon god over the monthly cycle. It is noteworthy that in Achaemenid Elamite be-ul “year” is never preceded by determinatives other than the locative AŠ.

Old Elamite Period

The earliest information about Elamite month-names comes from the tablets dealing with juridical matters discovered at Susa, written in Babylonian and belonging to the SUKKAL MAH dynasty (ca. 1970-1600). The dating formulae provide us with a great number of month-names, more than the twelve we might expect. The month-names occurred alone, so we do not have lists of months except in very few tablets.

Some month-names (addaru, abu and šabātu) are the same of the standard Babylonian calendar, unless we follow Cohen’s opinion that the route of this month-names was inverse: they were originally Elamite; then the Babylonian king Samsu-iluna (1749-1712 BC) included them in the Babylonian calendar, in order to create a composite calendar of wide acceptance. Other month-names are linguistically Babylonian (for example šer'ī ša ešēdī, the month of “the furrow (ready) for reaping,” or pît bābi, the month of “the opening of the gate”), while the remaining names seem to be truly Elamite even if it is difficult to give a tentative etymology of them.

There is also a solitary occurrence of APIN, the logogram for the 8th standard Babylonian month, in a tablet which mentions three other month-names: ha-al-ba-tum, e-la-ma-tum and pa-pa-kum which “sound” as Elamite. So, rather than a standard Babylonian month-name, I prefer at least to suppose that APIN is a shortened form of a month-name like AŠÁ DINGIR.RA URU₄.A or šer'ī ša erēšī (written also še-er-bū-um URU₄.A) where URU₄ is another reading of the sign APIN.

The Babylonian cultural influence

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26 Published in MDP X (1908) as Tablettes de l’époque d’Adda Pakšu (i.e. ad-da.hu-šu in Hinz/Koch 1987: 27 or Atta-hušu in Vallat 1998; these are accounting tablets) by V. Scheil, MDP XVIII (1927) as Textes économiques by G. Dossin, MDP XXII (1930; S.jur. 1-165), MDP XXIII (1932; S.jur. 166-327), MDP XXIV (1933; S.jur. 328-395) and MDP XXVIII (1939; S.jur. 396-551) as Actes juridiques susiens by V. Scheil.
29 MDP XXIII 31:5; MDP XXVIII 508:11 and passim. It “is amply attested in the Old Babylonian Susa texts, but was so far taken as belonging into the Babylonian (Nippur) calendar and thus not recognized as part of the local Elamite calendar” (Reiner 1973: 98).
33 MDP XXVIII 550.
seems to be strong, as Babylonian was the official written language; the calendar system probably originated in Mesopotamia, too, but it was adjusted to local needs with the adoption of local month-names. In fact, Elam was ruled by a steady Elamite dynasty, whose kings bore Elamite names.

The question is: how can we cut off a coherent group of twelve month-names? W. Hinz suggested two sets (“Bezeichnung”) of months: a) a Babylonian calque of an Elamite month-name; and b) an approximate Babylonian rendering (translation) of the first set. Instead, F. de Blois follows E. Reiner in defining a group of twelve months looking at a stela belonging to the beginning of the middle Elamite period; the other month-names might be alternate spellings.

Among these, the month-names related to the agricultural activities in the “field of god” (the temple fields), A.ŠÁ DINGIR. RA ŠE.KIN.KUD.A and A.ŠÁ DINGIR.RA URU₄.A, deserve further attention. E. Reiner underlines the striking parallelism with šer’i ša eṣēdi and šer’i ša erti (written še-er-i-URU₄ on the middle Elamite stela) and takes them for unabridged variants. However, in two tablets A.ŠÁ DINGIR.RA URU₄.A occurs in a sequence between lalubû and šer’i ša erti (written še-er-ḫu-um URU₄.A). S. Langdon takes into account this evidence only for A.ŠÁ DINGIR.RA URU₄.A, while I think that, according to W. Hinz, we can state that the months A.ŠÁ DINGIR.RA precede the respective months šer’i.

The intercalary month dar-bi-tum. DIRIG is noteworthy, as well.

Middle Elamite Period

In Babylonian from Haft Tepe

In the middle Elamite period we have a clearer situation. From a royal Elamite tomb at Haft Tepe, the ancient town of Kabnak near Susa, E.O. Negahban found a stela with an inscription in contemporary Babylonian reporting a list of ritual provisions. The mention of king Tepti-Ahar dates it around 1365 BC. The list is ordered by month: it begins with a-da-ri (similar to the last Babylonian month) and ends with ša-ba-a-ti (similar to the 11th Babylonian month). Later findings of administrative tablets written in Babylonian with single occurrences of month-names confirmed the names on the stela and filled a gap on the list.

37 Hinz 1963.
40 MDP X 6 and 21.
42 Hinz 1963: 14 and 15.
44 Published in Reiner 1973 with full commentary. About Haft Tepe see Negahban 1997.
Only the 6th month-name is still missing. P. Herrero and J.J. Glassner suggest that it may be the following (outside the list of ritual provision) occurrence in the stela of the word *ta-āš-ri-i-ti* (the name of the 7th Babylonian month). Nevertheless *tašrētu* is not attested in the tablets. To me, the occurrence of *tašrētu* in the stela seems to be simply the name of a ritual feast, not a month-name: in fact it is not preceded by the usual logogram *ITU* “month.” Therefore, I suggest *la-aš-lu-u-bi-e*, attested unfortunately only in one tablet, as the name of the missing 6th month.

As I mentioned above, it is relevant that the month-names listed in the stela are also attested with slight variations in the Old Babylonian tablets from Susa. The only exception is the 7th month-name in the stela, *še-bu-še-bi-i*: perhaps the month-name having the same relative position in the Old Babylonian tablets from Susa could be *A.ŠA DINGIR.RA URU₄.A*. Anyway, on this ground we can define a set of twelve month-names which I suggest to name “Susiana group.”

In Elamite from Tall-i Malyān

Afterwards, Babylonian influence decreased and Susiana became more Elamite. The Elamite language appeared in royal and votive inscriptions. F. Vallat speaks of “Elamization” of Susiana. The relationship with Mesopotamian peoples became more and more a state of disagreement. The apex of this escalation was when the Babylonian king Nebuchadnezzar I defeated Elamites and took Susa around 1110 BC.

Therefore, we are not astonished by the discovery of administrative tablets in Elamite language from Tall-i Malyān, probably the ancient town of Anšan, 43 km west of Persepolis. These tablets belong to the very end of the middle Elamite period, near 1000 BC (M.-J. Stève regards them as the first neo-Elamite texts). They were found in two separate parts of level IVa and scattered in the next level IIIa. The dating formulae provide us with month and day; the absence of year indication makes M.W. Stolper suggest that we are in presence of temporary archives. We have now left Susiana to reach the eastern district of Elam, farther from Mesopotamia.

Apart from the odd occurrence of *APIN* discussed above, the Malyān tablets, despite being written in Elamite, attest the first appearance in Elam of some logograms for standard Babylonian month-names, both in abbreviated (*GU₄, KIN*) and full (*BAR.ZAG.GAR, GU₄,SI.SA*) form.

Aside from the few occurrences of Babylonian logograms, there are two month-names (written consistently *a-pi* and *la-lu-be*) recurring several times, which are similar to those of the Susiana group but written in Elamite. They are attested only in the first group of tablets from level IVa.

Other month-names are less attested: besides the unclassifiable *ka₄-te-en-ka₄*, they ([(m)a-an-šar-ki and ma-an-ša-ar-<ki>, s[i-b]a-ri, še-er-man?, gam-ma-ma, a-da-ri]) are almost identical to the

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52 Published in Stolper 1984.
Elamite month-names attested five centuries later in the Persepolis Fortification tablets. Some of these appear only in the unpublished tablet of level IIIa, where we find this sequence:

\[\begin{align*}
&\text{s[i-b]} \text{a-ri še-ru-um še-ru-um-x-[…] gamma-} \\
&\text{ma}
\end{align*}\]

A comparison with ši-ba-ri, še-ir-mu and ku-ut-ma-ma⁵⁸ (the 9th, 10th and 11th Elamite month-names in the Persepolis Fortification tablets) is made by W. Hinz and H. Koch,⁵⁹ that restore še-ru-um. D[IRIG] as an intercalary month. The form še-ru-um could be a coupling ring between the Susiana (written in Babylonian) and the Persepolis (written in Elamite) groups of month-names, for it seems to be an abridged form of šer’i ša erēši.⁶⁰ In this connection, it is noteworthy that at Malyān the form še-er-man⁴ is attested, as well.⁶¹

Neolithic Period

The same function of coupling ring could also be assigned to the solitary occurrence of a-da-ri⁶² (related to the 3rd Persepolis Elamite month-name ha-da-ir, in turn scarcely attested⁶³), but especially to belili which is attested 8 times, both in the first and second group of level IVa. The written forms be-li-li⁶⁴ or be-li-li⁶⁵ should be the Elamite phonetic transcription of the Susiana month-name DINGIR. MAH.⁶⁶ The remaining written form NIN.i-lī⁶⁷ fits very well with this hypothesis. According to F. de Blois, the month-name be-el-ri.DINGIR⁶⁸ (i.e. bēlī ili “mistress of the gods”) attested at Haft Tepe beside DINGIR.MA⁶⁹ is another transition form. At the other end of this chain, we find the 6th Persepolis Elamite month-name be-li-li-ut.⁷⁰ It is noteworthy that be-li-li-ut and ha-da-ir are the only Elamite Persepolis month-names written without variants.

Neo-Elamite Period

The neo-Elamite period comes after a dark age: when the light of written sources comes back, we can see that Elamite language is still spread. Despite this, in the neo-Elamite administrative tablets from the acropolis of Susa (S 1-298, plus S 309), the abbreviated logograms for standard Babylonian month-names are widely used except, strangely, for the 7th month. It was probably replaced by the occurrence of the month ra-hal⁷² which is attested as many times as the average of

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⁵⁷ Quoted in Stolper 1984: 15a.
⁵⁸ As in PF 1001, dated at the 22nd regnal year of Darius. ši-ba-ri is the main written form (26 occurrences on 39) besides ši-ba-ir (10 occurrences) and ši-ba-ir-ri, ši-ba-ri-me, ši-bar (each with a single occurrence). še-ir-mu is attested 11 times, against 21 of the main form še-ir-mi, besides še-ir-ma (2 occurrences), še-ir-me (2) and še-ir(-i) (1). ku-ut-ma-ma is attested 18 times, besides kam-ma-ma and ku-ut-na-ma (each with a single occurrence). Data from Basello 2000.
⁶⁰ Cf. again še-er-hu-um URU⁴ from Susa and še-er-ur-URU⁴ on the Haft Tepe stela (already Stolper 1984: 15a).
⁶¹ M-1468 (unpublished).
⁶² M-1461 (unpublished).
⁶³ Only 5 occurrences (PF 1275, PF 1401, PF 1524, Fort. 2403 and Fort. 5634). Data from Basello 2000.
⁶⁴ TTM I 53:7 and 79:10.
⁶⁵ TTM I 4:7.
⁶⁷ TTM I 24:4 and 50:4.
⁶⁹ HT 27:10 (=Herrero/Glassner 1990, n. 65), HT 37:8 (=n. 36), HT 148:12 (=n. 44; restored).
⁷⁰ Attested 14 times. Data from Basello 2000.
⁷¹ Published in MDP IX (=Scheil 1907) as Textes elamites-anzanites by V. Scheil; S 309, of unknown origin and published in MDP XI (=Scheil 1911), must be added to this group (Steve 1986: 8). Published also in Yusifov 1963.
⁷² Scheil 1907: 32.
the Babylonian logograms.\textsuperscript{73} These tablets belong to the 7th or even to the beginning of the 6th century BC.\textsuperscript{74} As the Malyān tablets, there is no year indication and there is always one month-name per tablet. However, Malyān tablets are nearly always dated with day number, while here only few tablets are.\textsuperscript{75}

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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th APIN</td>
<td>9</td>
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<td>yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9th KAM for GAN</td>
<td>14</td>
<td>yes</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>10th AB</td>
<td>15</td>
<td>yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11th ZIZ</td>
<td>19</td>
<td>1</td>
<td>yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12th ŠE</td>
<td>17</td>
<td>3</td>
<td>yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12th ŠE DIRIG</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 DIRIG</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The same scenario appears in seven loan tablets from the apadāna of Susa (S 301-307),\textsuperscript{76} very similar to the Mesopotamian contemporary typology of texts,\textsuperscript{77} and in one tablet from the Achaemenid village (S add. 3),\textsuperscript{78} dated shortly afterwards the tablets from the acropolis.\textsuperscript{79} S 302 and S 303 have two month-names each: the latter is dated at the 11th Babylonian month, with an interest applied from the 12th month; S 302 is dated at the 12th Babylonian month followed by ra-hal. Unfortunately, V. Scheil is not sure about the reading of the sign HAL and nothing let us understand how many months elapsed.

Ra-hal is a really curious case: it is also the only month-name in the Ururu’s bronze plaque,\textsuperscript{80} found at Persepolis but dated at the second half of the 7th century BC. At least in this occurrence, it is strange that the plain sign HAL is so close to the preceding sign RA. Strangely enough, ra-hal is attested also in the Persepolis Fortification tablets, beside the Elamite and the Old Persian groups.

However, on the obverse of the only Elamite tablet reporting astrological omens\textsuperscript{81} (dated at the 8th or first half of the 7th century BC\textsuperscript{82}), we find a whole series of the Babylonian logograms twice. According to V. Scheil, these first two omens are an Elamite copy of a Mesopotamian original. On the reverse, we find two other omens. One is badly damaged, the other attests two new month-names:

\textsuperscript{73} Survey based on Scheil 1907 and Yusifov 1963 (the only discrepancy is in S 126, but see Yusifov’s translation). This data differs sometimes from the occurrences of month-names given in Hinz/Koch 1987.


\textsuperscript{75} For example, S 13 (day 14), S 41 (29), S 59 (22), S 70 (21), S 77 (2), S 85 (5), S 97 (3), S 296 (5).

\textsuperscript{76} Published in MDP XI (=Scheil 1911). See p. 89.

\textsuperscript{77} Reiner 1969: 61.

\textsuperscript{78} Published in Paper 1954.

\textsuperscript{79} Steve 1986: 8.

\textsuperscript{80} Ururu (Oruro in Hinz/Koch 1987), reverse 11; still unpublished, a brief commentary and legible photographs are in Cameron 1957.

\textsuperscript{81} Published in Scheil 1917.

In the Elamite syllabary, the signs for $\text{DU}_6$ and $\text{APIN}$ appear only as Babylonian month-names and only in this period. Nevertheless, the appearance goes back to their old Babylonian shape.

According to M.-J. Stève, the sign $\text{KAM}$ is always used in place of the logogram $\text{GAN}$ for the 9th Babylonian month. In my opinion, this is because the sign $\text{GAN}$ belongs only incidentally to the Elamite syllabary, while $\text{KAM}$ is widely used.

An intercalary month $\text{DIRIG}$ is attested in four tablets from the acropolis.

Few other month-names are attested in Susiana. As soon as we leave economic texts, Elamite tradition peeps out again: the Susiana month-name $\text{la-lu-bi-e}$ seems to survive still in $\text{la-lu-pe}$, from an Elamite inscription of the priest Šutru$rur$ (kingdom of Šutruk-Nahhunte II, 717-699 BC); in an Elamite inscription of the king Tepti-Humban-Însûsinak (664-653 BC) from the acropolis of Susa we find $\text{ku'}-\text{na-ma'}-\text{na}$. It could be an intermediate form between Maly $\text{gam-ma-ma}$ and Persepolis $\text{ku-ut-ma-ma}$. In this connection, the single occurrence of $\text{kam-ma-ma}$ attested in a Persepolis Fortification tablet is perhaps more interesting.

**Elamite Month-Names in Mesopotamia**

While Elamites used Babylonian logograms, Babylonian menologies and neo-Assyrian sources, both inscriptions and astrological reports, employed sometimes the Susiana month-names. Some menologies give us the complete listing with Babylonian equivalents. The relative order corroborates that of Haft Tepe but, in some tablets, the absolute position is different. In tablet Sp. II 381 two lacking Elamite month-names correspond to the 1st Babylonian month-name; the Elamite month-name corresponding to the 2nd Babylonian month-name is $\text{addaru}$ and so on. The neo-babylonian commentary on Elamite month-names Rm. 2,127 confirms that the 1st month is the well-known $\text{šabātu}$ together with $\text{BAR.SAG.SAG}$, an apparently new month-name.

**Achaemenid Period**

Reckoning and recording time seems to be an important matter in this period. Darius’ Bīsotūn inscription is rich of dating formulae, accurate down to the day. A new group of month-names appears here: the Old Persian one, both in
the Old Persian and the Elamite (as a calque) versions.\(^{95}\) Instead, the Babylonian version keeps its own logograms for standard Babylonian calendar.

While Babylonian logograms in Elamite texts only underwent the Elamite development of sign shapes, Old Persian month-names suffered a lot of variants in syllabic rendering.\(^{96}\)

Even if Darius did not impose his language to the administration of the empire, the Old Persian month-names are widely spread in the Elamite administrative texts from Persepolis, both the Fortification (510-494 BC) and the Treasury tablets (492-458 BC). The Old Persian month anāmaka-, written ʰAʰNAMAKA, was recognized by G.G. Cameron also on the unique tablet in Phrygian letters and language.\(^{97}\) However, as we have already seen, in the Persepolis Fortification tablets a group of month-names, which R.T. Hallock\(^{98}\) considers “native Elamite,” is attested, as well.

<table>
<thead>
<tr>
<th>Darius’ regnal year</th>
<th>total number of PF + PFa tablets(^{99})</th>
<th>PF + PFa tablets with month-names</th>
<th>Old Persian</th>
<th>Elamite</th>
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</thead>
<tbody>
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<td>13th</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
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<td>3</td>
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<td>0</td>
</tr>
<tr>
<td>17th</td>
<td>40</td>
<td>13</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>18th</td>
<td>89</td>
<td>25</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>19th</td>
<td>122</td>
<td>46</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>20th</td>
<td>82</td>
<td>28</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>21st</td>
<td>152</td>
<td>40</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>22nd</td>
<td>429</td>
<td>130</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>23rd</td>
<td>443</td>
<td>206</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>24th</td>
<td>167</td>
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<td>1</td>
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<tr>
<td>25th</td>
<td>67</td>
<td>35</td>
<td>0</td>
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<tr>
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<td>28th</td>
<td>61</td>
<td>37</td>
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</tr>
<tr>
<td>tablets with year</td>
<td>1737</td>
<td>640</td>
<td>123</td>
<td></td>
</tr>
<tr>
<td>without year(^{100})</td>
<td>383</td>
<td>119</td>
<td>13</td>
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</tr>
<tr>
<td>sum</td>
<td>2120</td>
<td>759</td>
<td>136</td>
<td></td>
</tr>
</tbody>
</table>

\(^{95}\) It would be interesting to know if there are differences in the dating formulae of the first Elamite version (cf. Cameron 1960: 59-61).

\(^{96}\) Cameron 1948: 41, even if this is partly true also for Elamite month-names. As an example, Basello 2000 counts 19 different written forms on 140 occurrences of the 2nd Old Persian month-name: the most frequent is tu-ru-ma-ir, attested 25 times, while the form attested in the Bīsotūn inscription is tu-ir-ma-ir with 21 occurrences; other 8 variants are unpublished.


\(^{98}\) Hallock 1950: 241 and 1969: 74. See also Cameron 1948: 41.

\(^{99}\) From Hallock 1969: 74 (the right sum is 1714) plus the evidence from Hallock 1978.

\(^{100}\) Including damaged tablets which might have had it originally.
The regnal year is often written at the end of the tablets, even if the name of the related king is always unexpressed. Day number is very rare: when we find it, the dating formula is often similar to the B/g431/g460/sot/ in one. We have either texts with a single month-name, lists of consecutive (occasionally one in and one out) months or “from-to” periods in the formula:

\[ \text{\textit{dITU\textit{MES}} (ik-(ki-))\textit{mar ku-is \textit{dITU\textit{MES}} \textit{month-name}} \]

often remarked by the total number of months elapsed. Lists or periods beginning in one year and ending in the following one are rare but very useful for us: a list such as in PF 1790 proves that ha-du-kān-nu-īs is the 1st month of the year. The month seems to be the basic unit in order to measure time for administrative purposes, while day numbers are required in dating the glorious undertakings of king Darius.

The two groups of month-names are well-defined, with twelve months each, so we do not know how the 8 or 9 occurrences of ra-hal can be classed. Here \textit{ra-hal} is nearly always followed by the sign \textit{MES}, i.e. the determinative usually placed after logograms from neo-Elamite period on.

The surviving of an Elamite group is explained as being in “documents which have their origin in regions populated entirely by Elamites.” Therefore my suggestion is to name it “Anšan group,” comprising in it the corresponding month-names from Malyān. Notice that this group seems to include some Susiana month-names.

In my opinion, it is not easy to know for sure the absolute positions (i.e. fixing the first month of the year) of Elamite month-names. At least in three instances the text of a tablet with Elamite month-names is included in a summary tablet replacing the original Elamite month-names with Old Persian ones: so we know that in the 22nd year of Darius zi-ik-li and za-ir-pa-ki-um correspond to the 1st and 2nd Old Persian month, but these are first of all correspondences which can not prove that Elamite year began with zi-ik-li.

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101 Regnal year lacks with higher frequency in some text categories, as Hallock’s category Q, “Travel Rations.”
103 PF 1116, PF 1117 and PF 1129 with the odd months and PF 1098 with the even ones.
104 For example, with explicit mention of both year numbers, PF 1085, PF 1779 and PF 1790. With explicit mention of just one year number (the latter one? See Hallock’s addition in the translation of PF 306:15): PF 306, PF 398: 14, PF 757, PF 804, PF 1039 (with a sixteen-month period), PF 1040, PF 1041: 10, PF 1189 (with a twelve-month period) and PF 1778: 13. Never in the Treasury tablets.
105 Notice also the complete list of month-names and the intercalation of the 19th year. Hallock’s category T, “Letters.”
106 A few doubts remain about ha-da-ir, the 3rd Elamite month-name, which is never attested with other month-names, except for the unpublished tablet Fort. 2403 (=PF NN L-610; cited in Hallock 1969: 75, footnote 13).
107 Hallock 1969: 75, updated in Hallock 1978: 111. Hinz/Koch 1987: 1024, “ra-hal” and “ra-hal-la,” lists only 7 occurrences. These are the documented occurrences: PF 321 (22nd regnal year of Darius), PF 1330 (21st), PF 1366 (22nd), PF 1466 (23rd), PF 1486 (23rd), Fort. 6516 (=PF NN P-1690), Fort. 7250.
108 Except for PF 321:8 where it is written exceptionally ra-hal-la.
Babylonian Month-Names

Besides Old Persian and Elamite groups, there are some occurrences of Babylonian standard month-names. In phonetic writing: Greek tablet Fort. 1771 (*TEBHT*; no year indication),\(^\text{113}\) unpublished monolingual Aramaic tablets,\(^\text{114}\) Aramaic glosses in Fortification tablets,\(^\text{115}\) Elamite tablet YBC 16813:7 (*šu-ša-an-na*; 15th year),\(^\text{116}\) As logograms: PF 2055:10-11 (*SIG₄-na*; 23rd year),\(^\text{117}\) PF 1803:11-12 (*SIG₄-na*, recognized only by W. Hinz and H. Koch; 23rd year),\(^\text{118}\) PFa 11:11 (*GUD⁴-MES-na*; no year indication).\(^\text{119}\)

The only logogram occurrence followed by logogram determinative *MES* is PFa 11. In PF 2055 the month-name is strangely linked to regnal year number by *a-ak “and.”* PF 1803 is puzzling because the 3rd Babylonian month-name follows the 4th Old Persian month-name.

The Babylonian Month-Names in Elam and the Elamite ones in Assyria

The logograms for the Babylonian month-names are attested in Elam starting from the 11th century BC. They might have been introduced as a consequence of the cruel capture of Susa\(^\text{120}\) by the Babylonian king Nebuchadnezzar I in 1110 BC. They are firstly partially attested in the distant Anšan, where the Elamite king Hutelutuš-Inšušinak took refuge\(^\text{121}\); afterwards they became widely employed in Susa. Indeed, they are confined to the administrative practice: notice that Elamite month-names still survive at Susa in royal and votive inscriptions.

In my opinion, until we understand the interference of *ra-hal*, these Babylonian logograms simply represent Babylonian month-names, and not aliases for Elamite names.\(^\text{122}\) We do not know how scribes and officials read them or what kind of month-names were used by people. Anyway, Babylonian logograms were written in local administrative and legal texts. This is an official use which attests the convenience and spread of Babylonian month-names and calendar.

According to M.E. Cohen,\(^\text{123}\) the occurrence of Elamite month-names in Assyria is an effort of showing independence from the dominating Babylonian culture. So the royal Assyrian ideology preferred learned or foreign month-names rather than standard Babylonian ones.

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\(\text{114}\) Some “traces” of these tablets can be found in Herzfeld 1934: 232, Cameron 1948: 23a and footnote 139, Bowman 1970: 19, footnote 26. About month-names, see Jones/Stolper 1986: 251.

\(\text{115}\) PF 855, PF 857, PF 858 and PF 968. About Aramaic glosses, see Hallock 1969: 82.

\(\text{116}\) Published in Jones/Stolper 1986: 247-253. In Cohen 1993: 306 and footnote 3, it seems to be quoted wrongly and without stating that the source is in Elamite.

\(\text{117}\) Cameron 1948: 41, footnote 5 (tablet quoted as Fort. 4696); Hallock 1978: 111.

\(\text{118}\) Hinz/Koch 1987: 1070, “SIG₄.”

\(\text{119}\) Hallock 1978: 120.


\(\text{121}\) Lambert 1972.

\(\text{122}\) Cf. Dandamaev/Lukonin 1989: 290; however *ra-hal*, the supposed 7th month in the economic tablets from Susa, does not seem to belong to Persepolis Elamite group. Referring to these month-names as “Susan” could be misleading: for example, cf. Hallock 1978: 111 with Stolper 1984: 15a about *GUD/GU₄*.

Elamite versus Babylonian Calendar

The first point to make regards the month-names from Tall-i Malyān. M.W. Stolper\textsuperscript{124} puts provisionally belili in the 4th position as in the Haft Tepe stela and manšarki in the 7th position as in the Persepolis Fortification tablets. However, the two are separated by nearly 1000 years and 500 kilometers. At Persepolis belilit was shifted to the 6th position. It is hard to derive the absolute position, but the relative order seems to be clear and should be maintained. This interpretation leads to the overlapping of the two months abi and manšarki, for which I have no explanation: abi belongs to the Susiana group while manšarki belongs to the Anšan one.

As an exemplification, we can have a brief survey on a widely attested month like addaru. In Babylonia it is the last month of the year. In the stela from Haft Tepe it is the 1st month in the list. In Babylonian menologies it is the 1st or 2nd month. In the Persepolis Fortification tablets it should be ha-da-ir, the 3rd month of the Elamite group.

According to F. de Blois’s accurate analysis,\textsuperscript{125} we have three shiftings at the beginning of the year. The first takes place at least by the time of king Tepti-Ahar, as the Haft Tepe stela attests; the second is perhaps reflected in the menology Sp. II 381 (surely the viewpoint was Babylonian; it is not clear if the Elamite year actually began with it), while the third can be seen in the Elamite month-names from the Persepolis Fortification tablets.

These shiftings can be explained by supposing that Elamites added three more intercalary months than Babylonians in about 1500 years. Perhaps there were other discrepancies, but they were recovered in some way. Nevertheless these three shiftings remained. I can hardly imagine how such a traumatic event as the change of the 1st month of the year could happen, especially if you think of the religious festival attached to the beginning of the year. Eventually the resynchronization happened only in Darius’ time, due to the strong imperial Persian ideology.

Otherwise, we have to suppose periods in which autonomy was emphasized by the political choice of using the Elamite calendar and periods in which Babylonians conquered Elam imposing their own calendar. During autonomy, the Elamite calendar went on its way and added one intercalary month more than the Babylonian calendar. This could be due to the lack of communication or to the desire of showing cultural independence. Then Babylonians came and retained their beginning of the year. During dependence, nobody implemented the Elamite intercalations so, when new autonomy arose, it was easier to keep the Babylonian beginning of the year in order not to change payments and accounts. It is likely that after the second shifting the Babylonian logos were preferred in administrative and legal practice in order to avoid the problem of the different beginning of the year.

New questions arise in Achaemenid time: why were not Elamite month-names

\textsuperscript{124} Stolper 1984: 15.

\textsuperscript{125} De Blois, unpublished.
employed in the Elamite version of Darius’ Bīsotūn inscription? Perhaps because they were not “Elamite” in general, but belonged only to Anšan? How could the administrative practice tolerate two groups of month-names? Was it an ingrained local habit of the Persepolis hinterland, an habit which needed time to be eradicated? Were the correspondences with Babylonian or Old Persian month-names easy to recall? Or were there discrepancies due to a different intercalation system? But who could oversee such independent systems? Mechanical rules of intercalation are soon going to be born. However, our journey comes to an end at Persepolis and tentative answers to these questions go beyond the scope of this paper.

Coming Back

I tried to locate some tesseras of the Elamite calendar mosaic. But these have to be placed into a bigger mosaic, representing also other near eastern peoples and cultures, as in the Pentecost Dome in Venice. However, these figures are not on a golden background, but on a background which has all the shading and dynamics of history.

It is time to leave the past behind and to return to the present. But even today, whether you are on top of a modern skyscraper or along a silent country road, if you look at the golden light of the sunset and see a very thin lunar crescent just above the western horizon, you know that it would have been the beginning of a new month for both ancient Babylonians and Elamites.126

126 The speech from which this paper is taken was given in Chicago on 2000, October 28. For a curious chance, that evening, after a boat ride and while the participants of the Symposium had dinner at a Persian restaurant, a new lunar month began. The sun set at 5:49 pm local time (Universal Time – 5 hours); the moon set at 7:01 pm. At sunset, the height of the moon was 10.4°, with an azimuth difference from the sun of 15.6°. The new moon was on October 27 at 2:58 am. Calculations made by Guide 7.0 (Gray 1998); crescent visibility according to the values used in Langdon/Fotheringham/Schoch 1928.

ABBREVIATIONS

BM Tablets in the British Museum, London.
Fort. First cataloguing of the Persepolis Fortification tablets, partly reordered in PF (concordance in Hallock 1969: 12) and almost completely in PF-NN (concordance in Hinz/Koch 1987: 1370-1392).

K.  Tablets from the Kouyunjik collection of the British Museum, London.

M- Excavation number of tablets from Tall-i Malyan (see Stolper 1984: 155).

MDP  Mémoires de la Délégation en Perse, Mémoires de la Mission archéologique de Susiane, Mémoires de la Mission archéologique de Perse, Mémoires de la Délégation archéologique en Iran, Paris.

PF  Tablets from the Persepolis fortification wall published in Hallock 1969.

PFa  33 tablets from the Persepolis fortification wall published in Hallock 1978.

PF-NN  New cataloguing for the unpublished Persepolis Fortification tablets (see Hallock 1978: 109).


Rm.  Tablets from the Rassam Collection of the British Museum, London.

S  Tablets from Susa published in MDP IX (S 1-298) and XI: 89-101 (S 299-309).


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Courtesy of Procuratoria di San Marco.
Pentecost Dome. San Marco, Venice.
The Elamite and Mesopotamian peoples.
Courtesy of Procuratoria di San Marco.
Babylonian month-names in the neo-Elamite administrative tablets.

Proportion of tablets with Old Persian and Elamite month-names to the whole Persepolis Fortification tablets.
Synopsis of the month-names in Elam.

<table>
<thead>
<tr>
<th>century</th>
<th>language</th>
<th>Babylonian standard</th>
<th>Babylonian</th>
<th>Elamite</th>
<th>Mesopotamian sources</th>
<th>Elamite</th>
<th>Persepolis</th>
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</thead>
<tbody>
<tr>
<td>1st</td>
<td>nisāmmu</td>
<td>šer-iša-ēşēdî / šer-i-ēbu-ri</td>
<td>addaru / A.ŠA DINGIR.RA ŠE.KIN.KUD.A ?</td>
<td>a-da-rî</td>
<td>(BĀR.ZAG.GAR)</td>
<td>šăbātu / BAR.SAG.SAG</td>
<td>zikli</td>
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<td>ayaru</td>
<td>pīt bābî</td>
<td>šer-iša-ēşēdî / šer-i-ēbu-ri</td>
<td>še-er-i-EBUR</td>
<td>adari (GU₄)</td>
<td>adari</td>
<td>zarpakim</td>
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<td>pī-it-ba-ba</td>
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<td>lanlube</td>
<td>la-al-lu-u-bi-e</td>
<td>api (KIN) / abu</td>
<td>belilit</td>
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<td>šer-iša-ērešî</td>
<td>A.ŠA DINGIR.RA URU₄.A ?</td>
<td>še-bu-še-bi-i</td>
<td>lalube</td>
<td>lal(l)ubû</td>
<td>manšarki</td>
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<td>araḥšamma</td>
<td>tamḫîru</td>
<td>šer-iša-ērešî</td>
<td>še-er-i-URU₄</td>
<td>sibari</td>
<td>sibûtu / šebûtu</td>
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<td>tamḫîru</td>
<td>tam-ḫi-ri</td>
<td>šerum / šerman</td>
<td>šer-iša-ērešî / AB.SIN URU₄-Si</td>
<td>Šibari</td>
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<td>ćebeṭu (AB)</td>
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<td>ḫu-ul-tu-up-pi- e</td>
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<td>šăbātu</td>
<td>ša-(a)-ba-a-tî</td>
<td>ḫultuppû / ḪUL.DÛB.E</td>
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