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Counting trees around Persepolis

Wouter Henkelman, Matthew W. Stolper

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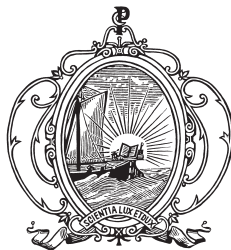


Achemenet. Vingt ans après.

**Études offertes à Pierre Briant
à l'occasion des vingt ans du
Programme Achemenet**

sous la direction de

**Damien Agut-Labordère, Rémy Boucharlat,
Francis Joannès, Amélie Kuhrt et
Matthew W. Stolper**



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Counting trees around Persepolis¹

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Introduction

In *Histoire de l'Empire Perse*, Pierre Briant drew repeated attention to the Persepolis Fortification text PFa 33 in connection with the realities of arboriculture in the Achaemenid heartland (1996, pp. 214, 304, 457-58, 825). The text is part of a growing body of written information on fruit and other tree crops from the Persepolis Fortification Archive (PFA), a source whose historical potential Briant was among the first to recognize. More than four hundred Elamite Fortification texts and journal entries that name more than forty kinds of tree crops reflect intense, closely managed, productive arboriculture around Persepolis, corresponding, at least at a general level, to palynological evidence for sharp increases of cultivated trees and vines in parts of Fārs in the Achaemenid period (Djamali *et al.* 2010, 2016, Henkelman n.d.2).

Most of these texts deal with the crops (fruit in broad sense, including olives, nuts, and aromatics). Richard T. Hallock selected PFa 33 for publication because it was the only text dealing with the trees themselves (1978, p. 116). Among administrative records, where repetitive form and content and orderly process are expected, unique texts pose a challenge, so it is fortunate that a second, comparable text, Fort. 0119-101, has come to light (previously illustrated in Stolper 2016, p. 144 fig. 2). It shares many of the interpretive uncertainties of PFa 33, but as to context, it provides useful prosopographic and geographical links to other records of fruit revenue, as to process, it suggests a hypothesis about the function of these exceptional documents, and as to substance, it more than doubles the number of trees counted and cultivated in a limited region around Persepolis.

1 The Persepolis Fortification Archive Project at the Oriental Institute, from which these observations arise, has received timely support from the Andrew W. Mellon Foundation, the Farhang Foundation, the Getty Foundation, the Iran Heritage Foundation, the National Endowment for the Humanities, the National Geographic Society Committee for Research and Exploration, the PARSIA Community Foundation, the Roshan Cultural Heritage Institute, the University of Chicago Women's Board, and other donors and organizations. Draft editions and images of many of the unpublished Persepolis Fortification texts and tablets cited here by the sigla Fort. and PF-NN are displayed by the Persepolis Fortification Archive Project at the Online Cultural and Historical Research Environment (oi.uchicago.edu/research/ochre/projects.html). Definitive editions, translations and images of some are available on Achemenet (www.achemenet.com/en/tree/?/textual-sources/texts-by-regions/fars/the-persepolis-fortification-archive). High-quality images of many are also available at InscriptiFact (www.inscriptifact.com/).

In what follows, we discuss and compare the two documents, the particulars of their contents, their administrative connections, and their place in the flow of information. Commented editions are appended, but supporting information and argument, including treatment of the lexicon of tree crops and editions of documents linked by prosopography and/or form, are deferred to separate publications (including Henkelman n.d.2).

PFa 33 and Fort. 0119-101

Fort. 0119-101 is almost twice as tall as PFa 33, but the other dimensions of the two tablets are similar, as are the color and fabric of the clay. Both are written in the same broad hand. In both, the scribe did not always align numbers by place-value, that is, with 100s aligned above 100s, 10s above 10s, 1s above 1s, as is usual in Fortification journals and accounts. They are probably the work of a single individual, perhaps on a single occasion.

PFa 33 is organized in six sections, Fort. 0119-101 in nine. The sections are laid out in three columns, without headings. They list numbers of three to seven kinds of trees per section, each section ending with total number of trees under the care of a named person and associated with a facility characterized as *partetaš* (etymologically, “paradise,” functionally “plantation”) or *balum* (a storage, production and handling complex), mostly located at a named place. Each text ends with a statement that names an official with general oversight and responsibility for these localities. The name is different in each, implying two different administrative districts or offices, and raising the likelihood that more such districts were identified with other overseers. Excerpts illustrate this formal structure (leaving key terms untranslated pending discussion below):

PFa 33

(20)	552	<i>hur</i>	apple
(21)	442	ditto	pear
(22)	59	ditto	quince
(23)	196	ditto	<i>karukur</i>
(24)	total 12[49]	ditto	<i>husa mekana</i>
(25)	at the plantation (of) GN, for PN to take care of		

Fort. 0119-101

(47)	[xx]	<i>hur</i>	mulberry
(48)	[(x) x]00	ditto	<i>kazla</i>
(49)	[(xx)] 'x'	ditto	quince
(50)	[(xx)] 22?	ditto	pear
(51)	[(xx)] 384	ditto	<i>karukur</i>
(52)	[(xx)]	ditto	<i>zaritka</i>
(53)	[(xx)] 10	ditto	apple
(54)	[total x]3[x]9	ditto	GIŠ <i>mekana</i> , at the plantation
(55)	(of) GN, for PN to take care of		

As these excerpts indicate, where the section endings of PFa 33 have a syllabic spelling of Elamite *husa* (^{GIŠ}*hu-sa*), those of Fort. 0119-101 have logographic ^{GIŠ}GIŠ^{MEŠ}. The close parallelism between the texts implies equivalence between the terms; this equivalence is unsurprising, considering the

commonly accepted understanding of *husa* as “tree, grove” in older Elamite, notably in Middle Elamite royal inscriptions, in the phrase *siyan* (DN-*me*) *husame*, “temple (of DN) of the grove,” but it is new to Achaemenid Elamite, where ^{GIŠ}GIŠ^{MEŠ} usually represents Elamite *malu* “wood (as material)” (below, comment to Fort. 0119-101:12). The nuance of *husa*, whether “tree” or “group of trees, grove, orchard” is the basis for suppositions about the obscure words *hur* at the heads of sections and *mekana* at the ends.

In both texts, the entries tabulate items called *hur* in the second column and identify them by kind in the third column. The term is not qualified by a dry or a liquid measure, implying that it refers to countable items. In the totals at the end of each section *hur* | *husa mekana* is once again divided between two columns. In the absence of unambiguous grammatical markers, the entries in columns two and three appear to be in apposition. Hallock’s provisional rendering obscures this, giving “tree seedlings² (for) planting², rather than “seedlings² (better: young trees, saplings²), trees/an orchard (for) planting²” or “seedlings² (young trees, saplings²), for tree-/orchard-planting” (so Hinz and Koch 1987, p. 915).

Lexical evidence on *hur* is limited, but includes attestations in two wine journals where it may refer to a product of the vineyard, perhaps “shoot, green part” or “(vine)leaf.” The basic meaning of *hur* may have been “young plant, sprout, shoot, green part, offshoot,” whence, in PFa 33 and Fort. 0119-101, “seedling, sapling” or perhaps “graft.” There is no clear evidence for *mekana* (see comments to PFa 33:01, 09).

Although the meanings of the distinctive words range from ambiguous to obscure and grammatically uncertain, the overall meaning of the texts – lists of fruit trees, with their locales and responsible personnel – is probable, even unavoidable, and for translation, we retain a version Hallock’s guesses, that *hur husa mekana* indicated “saplings², trees/an orchard for planting².”

PFa 33 lists altogether 6,166 or 6,226 trees at five places.² The preserved numbers in Fort. 0119-101 give a minimum of 5,316 trees, and if we assume about 1,000 additional trees at each of the places for which the numbers are lost, then the whole document lists almost 10,000 trees at nine places.

All nine kinds of tree-crops named in PFa 33 recur in Fort. 0119-101, which adds five more. Some were more commonly handled, and sometimes in larger quantities, than the published sample of documents suggests. The following table lists the names of the trees (and their fruit), the current understanding of the words (subject to review and amendment elsewhere), the number of trees in PFa 33 and Fort. 0119-101 and numbers of attestations in other categories of records.³

2 The total of 6,166 trees is based on Hallock’s conjecture that the intermediate totals in l. 36 (600) and l. 46 (697) are in error (to be corrected to 590 and 647 respectively). Alternatively, some of the underlying entries may be in error and the intermediate totals correct, which would give a grand total of 6,226 trees. The text itself does not state a grand total.

3 Numbers of trees are followed by number of locations (in parentheses). Damaged and incomplete numbers in Fort. 0119-101 are minimums, marked with + or ++ (for one or several broken entries). “Deposits,” Transfers, etc.” include records of transports (Hallock’s category A), deliveries (B), so-called “deposits” (C1) and balances (C2), individual entries in multiple-entry “deposits” (provisionally labeled C1/W), and receipts of revenue (G). “Outlays” include records of use (E), elite and administrators’ rations (H), royal provisions (J), regular rations (L), bonus rations (M), counterparts in letter-orders (T) and in individual entries in journals (V). In case of fragmentary journals, where the name of the fruit occurs only in a summary statement or tabular account at the end, a single entry on that fruit is assumed. Multiple attestations in accounts (W) are counted as single occurrences. All numbers are of course approximations, drawn from an incomplete and changing sample.

Name	Understanding	Trees, PFA 33	Trees, Fort. 0119-101	“Deposits,” Transfers, etc.	Outlays	Accounts
<i>bayam</i>	quince	96 (3)	85++ (6)	8	0	1
<i>dakuš</i>	?	0 (0)	[...] (1)	8	6	6
<i>duddam</i>	mulberry	98 (3)	123+ (7)	58	24	24
<i>hasur</i>	apple	1298 (6)	176+ (8)	66	35	42
<i>irtaštiš</i>	?	0 (0)	20+ (3)	13	1	23
<i>kannakduš</i>	(an aromatic)	0 (0)	1750++(4)	5	0	2
<i>karukur</i>	?	3349 (6)	411++ (6)	51	6	0
<i>kazla</i>	?	60 (1)	216++ (4)	32	24	39
MA	fig ²	130 (2)	7+ (5)	96	46	27
<i>silti/telte</i>	?	5 (1)	131+ (2)	10	3	9
<i>umarudda</i>	pear	901 (5)	410++ (6)	10	0	1
<i>zdaritkam</i>	(a yellow fruit)	0 (0)	[...] (2)	1	1	7
<i>zayadam</i>	olive	129 (2)	299+ (2)	3	0	0
<i>zipil</i>	?	0 (0)	226++ (5)	2	0	0

Table 1. Fruit trees in PFA 33 and Fort. 0119-101 and fruits in other PFA texts

Conspicuous by its absence is *pit*, one of the fruits most frequently mentioned elsewhere in the PFA, often alongside MA, “fig².” This omission is surely not significant in terms of production and recording, since the texts most similar to PFA 33 and Fort. 0119-101 in structure and phrasing, namely “deposits” (to use Hallock’s handy but disputed label for his category C1) of fruit kept at plantations (*partetaš nuškima(k)*) and counterpart entries in fruit accounts, also record amounts of *pit*, sometimes alongside amounts of MA. Some of the actors mentioned in PFA 33 and Fort. 0119-101 occur elsewhere in connection with *pit* (see below, comments to the texts). The omission may rather reflect specific regional conditions or cultivation needs.

The correlation between numbers of trees and occurrences of fruit in other texts varies considerably. The comparatively large number of apple (*hasur*) trees matches the comparatively high frequency of mentions of the fruit elsewhere, but a comparable number of pear (*umarudda*) trees contrasts strikingly with the near-absence of the fruit elsewhere. The more than 3,500 *karukur* trees at eleven locations are matched by a comparatively large number of “deposits” of the fruit. Two other texts record outlays of 7,500 l. of this fruit for the royal table, but only four texts record outlays of a total of 240 l. to hundreds of workers. Generally speaking, the great majority of all kinds of records of fruit deal with delivery, intake, and accounting of stores. Of the relatively few documents that record outlays, most deal with bonus rations, payments to high ranking individuals, and supply of the royal table. Mulberries, apples, *kazla* and figs² are well attested, but none was a real staple food in the Persepolis economy as we know it. As with poultry (Henkelman 2008, pp. 420-421), the PFA’s evidence for arboriculture has more to do with production than with consumption.

Loci, Places, Personnel

In PFa 33:16, 37 *balum*, “storage complex” alternates with *partetaš*, “plantation” as the site of trees. The term *balum* does not occur in preserved parts of Fort. 0119-101, but a similar alternation occurs in “deposits” of fruit (below, comments to PFa 33:16). Separate subtotals for a storage complex and a plantation and a grand total at the place Pirdubattiš assure that the *balum* is not to be understood as a part of the *partetaš*, e.g., as a utilitarian structure in a multipurpose park, but as a distinct administrative site with distinct individual caretakers. Similarly, the fruit account Fort. 1999-101 enters separate subtotals at a *balum* and a *partetaš* at Mišdubaš. PF 0144 and Fort. 1388-101, both “deposits,” record fruit at a *partetaš* and a *balum*, respectively, at the place Matannan in the same year, under the oversight of the same person, named in the clause PN *šarama*, “for PN to oversee.” This clause also indicates the wider level of responsibility for all the plantations and storage complexes in PFa 33 and Fort. 0119-101.

When only PFa 33 was available, Tuplin presciently argued that all of the places named there were close to Persepolis (1996, p. 181, cf. Hallock 1978, p. 116, Tuplin 2018, p. 488). Ongoing study on the relative topography of Achaemenid Pārsa as well as the places mentioned in Fort. 0119-101 bear this out. Those places all belong to the administrative region known as the “Persepolis region,” and probably to a still smaller area surrounding Persepolis. Details are offered in comments to the texts below; thus:

GN	Comment (Text:Line)	Attested Connections/Location
Appištapan	PFa 33:47	Akkuban, Kamenuš, Matezziš, Persepolis, Rakkan, Tikranuš, Tikraš, Tirazziš, etc.
Halibbaš	PFa 33:36f.	(unattested elsewhere)
Ha[...]rizzaš	Fort. 0119-101:69	(unattested elsewhere)
Mandumatiš	Fort. 0119-101:76	Tikrakkaš, Tikraš, Persepolis
Mišbašiyatiš	Fort. 0119-101:64	at Matezziš (near Persepolis)
Pirdubattiš	PFa 33:10	(unattested elsewhere)
Tikranuš	PFa 33:25	Akkuban, Appištapan, Kamenuš, Persepolis, Tikraš
Tikraš	PFa 33:30	Appištapan, Kamenuš, Mandumatiš, Matannan, Mišdubaš, Rakkan, etc.

Table 2. Places named, comments where citations are given, connections.

Three of the places listed (Appištapan, Tikraš, Tikranuš) are elsewhere characterized as (*h*)*umanuš* (PF-NN 0071, PF-NN 1301, PF-NN 1986), commonly translated as “village” (Iranian *(*h*)*umanīš*, Tavernier 2007a, p. 446 [4.4.12.7]). The implication may be that the places named in PFa 33 and Fort. 0119-101 but not elsewhere were modest rural settlements (Henkelman 2008, pp. 439-40; 2011, pp. 138, 146). The fact that the two texts seem to refer to administrative district(s) close to Persepolis limits the scope of their implications for the rest of the Achaemenid heartland, but (especially in combination with some fruit accounts that deal with the same micro-region) deepens the view they afford of local fruit production and its administration.

The prosopography of the actors named in PFa 33 and Fort. 0119-103 also reflects this focus on the near vicinity of Persepolis. The name of Napapirruna, who appears as general overseer in

PFa 33:48-50, though not otherwise attested in this form, is a likely error for Napapartanna, the name of a logistics official who managed grain and fruit production and storage in an area that included Akkuban, Appištapdan, Barteš (= Persepolis?), Kamenuš, Tikranuš and Tikraš. He may have held an estate (*ulhi*, “house”), a token of high status (see comment to PFa 33:48f.). Zimakka, mentioned in PFa 33 in connection with a plantation at Tikranuš, elsewhere oversees “deposits” of fruit and *tarmu* (emmer?) at places in the Persepolis region; he allocates some 5,000 l. of *karukur* for the royal table at Appištapdan; fruit is sometimes “deposited” in his name (see comment to PFa 33:25). More striking is the prosopography of Fort. 0119-101, where four of the actors recur in various combinations elsewhere. Foremost among them is Maraza, named at the end of the text as the general overseer, hence in the same administrative role and rank as Napapirruna (Napapartanna). Elsewhere, Maraza oversees fruit “deposits” at Persepolis, supervises individuals called “fruit workers” or “fruit processors,” is himself perhaps titled a “deputy fruit manager,” and may act as fruit supplier at Tikrakkaš (see comment to Fort. 0119-101:85). He and three other actors named in Fort. 0119-101 appear together in tabular fruit accounts and multiple-entry “deposits” (C1/W), thus:

Text	Type	GN	Fort. 0119-101 Actors
Fort. 1362-101	multiple-entry deposit (C1/W)	[...]	Gidadda ² , Pukša
Fort. 1899-101	tabular account (W)	Matezziš	Haturadda, Gidadda, Pukša
Fort. 1927-101	tabular account (W)	Matezziš	Haturadda, Gidadda
Fort. 1999-101	tabular account + journal (W+V)	Mišdubaš	Haturadda, Gidadda
Fort. 2043-101	tabular account (W)	Persepolis	Haturadda ² , Gidadda, Pukša, Maraza

Table 3. Collocations of actors named in Fort. 0119-101.

Judging from these connections, not only all of the installations but also all of the personnel of PFa 33 and Fort. 0119-101 belong to the cluster of plantations around Persepolis (Tuplin 1996, pp. 178-82; *idem* 2008, p. 349).

It deserves notice that in Fort. 1899-101 the names of Haturradda (l. 14) and Gidadda (l. 35) are both listed with totals of fruit at a new (*pipšina*) plantation at Matezziš, evoking the planting² of trees in PFa 33 and Fort. 0119-101. In the case of Gidadda the evidence goes further still as his new (*pipšina*) plantation at Matezziš is named Mišbašiyatiš, the same name as one of the plantations in Fort. 0119-101 (l. 64).

Fort. 1999-101 provokes another useful comment in that it refers to amounts of fruit connected with Haturradda and three other officials, each marked as “at the storage complex” (*balum-ma*, ll. 2-5), as well as to Gidadda and two other officials, each marked as “at the plantation” (*partetaš-ma*, ll. 10, 15, 21). This simultaneous occurrence of *balum* and *partetaš* evokes their parallel use in PFa 33.

Operative Clauses and Information Flow

As Tuplin remarked (2018, p. 489) “if there were no C1 documents, the *partetaš* would scarcely impinge on our consciousness.” The vast majority of such plantations appear in “deposits” of fruit (Hallock’s Category C1), in the clause GN *partetaš-ma nuškima(k)* (with variations), similar to the clause at the end of most sections of PFa 33 and some sections of Fort. 0119-101,

partetaš GN-(*na*)*ma* PN *nuškima* (with variations).⁴ In PFa 33 and Fort. 0119-101 the subject of *nuškima*, “guard, keep,” is explicit; in the “deposits” the grammatical or logical subject of *nuškima(k)*, “for guarding, keeping” ~ “to be guarded, kept,” is identified in a clause of disputed meaning that distinguishes C1 texts, PN (*gim*) *uggi daka/zikkaka*, literally “put/deposited on PN (as weight).”⁵ No such comparable contexts help with restoring and interpreting Fort. 0119-101:64, where *pirrikka* replaces *nuškima*. If it is a Conjugation II form of *pari-*, “go” (or a variant of *pirka*, “elapsed (of time)”) it suggests that the meaning of *nuški-* in parallel contexts is not limited to the nuance of “tending” trees. The recurrence of Haturrada, Gidadda and Pukša in fruit accounts assures that they, and by implication the others named in Fort. 0119-101 and PFa 33 as subjects of *nuškima*, were not just nurserymen, but officials overseeing production. In administrative usage *nuškima(k)* must refer to both trees and crops, in Fort. 0119-101 and PFa 33 to management of large orchards, in “deposits” to management of the yield.

Hallock evidently restored the phrases at the end of PFa 33, PAP ... PN *šaramanna* ... *tuppi hi* PN [*tubaka*], “total ... under the oversight of PN ... this tablet [concerns] PN,” on the basis of the well-preserved end of PFa 01, a multiple-entry fruit “deposit.” The end of Fort. 0119-101 corroborates the restoration. A few other multiple-entry fruit “deposits” have the same phrases.⁶

The first phrase, PN *šaramanna*, confirms unsurprisingly that the person named had oversight over many sites and producers; the same is certainly true of the persons named in the counterpart expression in most single-entry “deposits.” Other occurrences of Napapirruna (Napapartanna) of PFa 33 and Maraza of Fort. 0119-101 confirm that they were administrators charged with a range of logistical oversight, and the same is true for other actors mentioned in the texts (see comments to the editions below).

The distinctive second phrase, *tuppi (hi)* PN *tubaka*, suggests that PFa 33 and Fort. 0119-101 were compiled from similar single-entry records with formal variations that are reflected in the sections of the texts. Multiple-entry “deposits” with the same expression were compiled from ordinary single-entry C1 documents.

The upshot of these observations is a series of links among formal types of Fortification documents, implying functional links as well:

- PFa 33 and Fort. 0119-101 share with single-entry fruit “deposits” variations of the phrase *partetaš/balum-ma nuškima*.
- Single- and multiple-entry fruit “deposits” share variations of the identifying phrases (*gim*) *uggi daka/zikkaka*.
- PFa 33 and Fort. 0119-101 share with multiple-entry fruit “deposits” variations of the phrases PN *šaramanna tuppi (hi)* PN *tubaka*.
- PFa 33 and Fort. 0119-101 share features of format with multiple-entry fruit “deposits” (shape, layout, absence of seal impressions).

⁴ A counterpart phrase in “deposits” of *tarmu* is abbreviated to GN *partetaš-ma*, once to GN *nuškima*. Similarly abbreviated phrases appear in tabular accounts of fruit: PN *partetaš* GN, *partetaš* PN GN (Fort. 1899-101:05, 14, 29, Fort. 1927-101:60', 67', 74', 80', 84'); PN *balumma*/PN *partetaš-ma* (Fort. 1999-101:02-05, 10, 15).

⁵ The meaning “(unit of) weight” for *gim* is suggested by the inscription on a duck weight now in the Susa museum, to be published elsewhere.

⁶ See Fort. 1323-102, Fort. 1334-102, and Fort. 2029-103, all partially damaged. Other multiple-entry fruit “deposit” texts lack the second phrase (e.g., PF 2018, Fort. 1389-101, Fort. 1839-102, Fort. 1850-102, Fort. 1920B-101, Fort. 1951-101).

- PFa 33 and Fort. 0119-101 share with fruit accounts some named actors (Haturradda, Gidadda, Pukša, Maraza), sometimes explicitly located at plantations near Persepolis.
- Tabular fruit accounts (and some other accounts) share with “deposits” a version of the key identifying phrase. In the accounts a plural version, *ukkap daka*, is a column heading in tabulations where arithmetic relationships as well as occasional subscripts make it certain that the commodities under this rubric are revenue.

As others have observed, Hallock’s handy label for C1 documents, “deposits,” is misleading. It is beyond doubt that from the point of view of the account-makers – that is, the latest documented stages of information processing at Persepolis – the C1 documents are primary records of revenue.⁷ Like other memoranda, the sealed, single-entry C1 documents came to Persepolis as source records for compilation in tabular accounts, listing deliveries from named producers. Thus, Fort. 1899-101 labels the grand totals of 11 tabulated lists as “fruit *ukkap daka* and delivered (*ullaka*)” (l. 62), and then definitively as “fruit, revenue delivered in the storehouse at GN” (*miktam haduš kandu-ma ullaka GN*, l. 70).

Single-entry C1 documents typically record a single kind of fruit, associated with a single person,⁸ but most tabular fruit accounts compile lists of several kinds of fruit, each list associated with a single person. The multiple-entry C1/W documents provide a middle term, with lists of several kinds of fruit associated with single persons, with several lists in each document, sometimes under a single overseer (*šarama(nna)*). Unlike single-entry C1 documents on sealed, tongue-shaped memorandum tablets, most multiple-entry C1/Ws recognized until now are on unsealed rectangular tablets, mostly in portrait format (i.e., with short lines of texts on tall tablets).⁹

The multiple-entry versions were compilations that connected several crops with individual managers and connected several managers with district overseers with the phrases PN *šarama (tuppi hi PN tubaka)*. As aids for sorting information in the primary C1 tablets, the multiple-entry texts were procedural documents, requiring no seals. *Ad hoc* compilation from shorter source documents accounts for formal variations within and among them.¹⁰ Final accounts were compiled on the same terms as the multiple-entry lists, that is, connecting lists of crops with individual managers, and lists of managers with locales and overseers. As the accounts were done, the interim compilations were ordinarily discarded, hence their scarcity in the preserved PFA.¹¹ The two fruit-tree texts, PFa 33 and Fort. 0119-101, with similar format, contents, and phrasing, are also to be seen as procedural aids to organizing information, describing the sizes of fruit gardens connected with individuals charged with fruit revenue.

7 To this extent Koch 1980, p. 115, Aperghis 1998, pp. 48-51 and 1999, p. 177, Tuplin 2008, p. 371 n. 151 and others concur.

8 Exceptions include PF-NN 0700, PF-NN 0938, PF-NN 2088, PF-NN 2106, PF-NN 2559.

9 Exceptions are Fort. 1951-101, in landscape format (i.e., written on the long axis of the tablet), and perhaps Fort. 1389-101 and Fort. 1262-102, each with impressions of PFS 2183, as well as exceptional phrasing.

10 This category of documents, represented by only two published examples until now, requires discussion and illustration elsewhere.

11 This documentary chain is implicit in the lapse mentioned in PF 1988:20, where the subtotal of one of the tabulated lists of fruits (PAP *hi* PN) includes the comment that “he did not send a sealed document” (*halmi inni tingiš*).

Conclusion

If, as still seems probable in spite of their obscure vocabulary, PFa 33 and Fort. 0119-101 deal with young fruit trees, they testify to the development and maintenance of large orchards set in plantations or storage complexes, producing many kinds of arboreal crops. In fact, at least for the immediate vicinity of Persepolis, they point to more intense and more diverse production than the PFA's routine records of fruit storage and consumption imply.

Formal links between PFa 33 and Fort. 0119-101 and the single-entry "deposit" texts (C1) along with prosopographic links between Fort. 0119-101 and tabular fruit accounts corroborate the consensus that in their final use and from the point of view of the compilers of the PFA, the C1 documents are records of production counted as revenue. The caretakers in PFa 33 and Fort. 0119-101 are officials charged with production, not beneficiaries of production.

Formal resemblances between PFa 33 and Fort. 0119-101 and multiple-entry versions of such revenue records (provisionally, C1/W) indicate a probable chain of documentation that connects the primary records of revenue (C1) with the final fruit accounts (W) and implies that PFa 33 and Fort. 0119-101 are formally and functionally comparable procedural documents.

This inference, however, begs the questions raised by the most distinctive contents of PFa 33 and Fort. 0119-101: if they are procedural compilations, where are the final accounts for which such documents were compiled? Why do they count trees, perhaps even trees that are not yet productive, rather than crops? Why do they exist at all? Are they intrusive survivors of another lost set of records that monitored development and production, rather than products and workers, as most of the PFA does?

Texts

PFa 33

8.8 x 11.9 x 1.9 cm

No seal.

Obverse

(01) 75	GIŠ <i>hu-ir</i>	GIŠ[za ²]- ^r a ² -da ² -[um ²]
(02) 2 ME 41	GIŠ ^{KI+MIN}	GIŠ ^r ka ₄ -ru- ^r kur ^r
(03) 60	GIŠ ^{KI+MIN}	GIŠ ^{kaz} ₀ -la
(04) 5	GIŠ ^{KI+MIN}	^r GIŠ ^{si-el-ti}
(05) 3 ME 84	GIŠ ^{KI+MIN}	GIŠ ^{ha-su-ur}
(06) 30	GIŠ ^{KI+MIN}	GIŠ ^{ba-a-ia}
(07) 70	GIŠ ^{KI+MIN}	GIŠ ^{du-ud-da-um}
(08) 3 ME '3'	GIŠ ^{KI+MIN}	GIŠ ^{hu-ma-ru-ud-da}
(09) PAP 1 ŠI [1] ME 68	GIŠ ^{KI+MIN}	GIŠ ^{hu-sa me-ka₄-na} ^{AS}
(10) pá ^r - ^r te-taš ^r ^{AS} pír-du-bat-ti-iš-ma ^{HAL} mi-iš-pu-ut-⟨ra ² ⟩		
(11) nu- ^r iš-gi ^r -e ¹ -ma		
(12) 1 ŠI [8] ME	GIŠ <i>hu-ir</i>	GIŠ ^{ka₄-ru-kur}
(13) 40	GIŠ ^{KI+MIN}	GIŠ ^{ha-su-ur}
(14) 27	GIŠ ^{KI+MIN}	GIŠ ^{ú-ma-ru-ud-da}
(15) 'PAP' 1 ŠI 8 ME 67	GIŠ ^{KI+MIN}	GIŠ ^{hu-sa me-ka₄-na}

- (16) ^rAŠ¹ba-lu-um¹-ma AŠ²pír-du-bat-ti HAL³ú-ul-la
 (17) nu-iš-gi-e¹-ma
 (18) PAP 3 ŠI 35 GIŠ⁴hu-ir GIŠ⁵hu¹-sa me-ka₄-na¹
 (19) AŠ²pír-^rdu¹-bat-ti mu-iš-šá-ka₄
 (20) 5 ME 52 GIŠ⁴hu-ir¹ GIŠ⁵ha-su-ur
 (21) 4 ME 42 GIŠ⁴KI+MIN GIŠ⁵hu-ma-^rru¹-ud-da

Lower Edge

- (22) 59 GIŠ⁴KI+MIN GIŠ⁵ba-^ra-ia¹
 (23) 1 ME 90+^r6¹ GIŠ⁴KI+MIN GIŠ⁵ka₄-^rru¹-kur
 (24) PAP 1 ŠI 2 ^rME¹ [49] ^rGIŠ⁴KI+MIN GIŠ⁵hu-sa me-ka₄-na ^rAŠ¹

Reverse

- (25) [pár]-te¹-^rtaš¹ AŠ²ti¹-[ik]-^rra¹-nu-iš-^rma¹ HAL³zú-ma-[ka₄] nu-iš-gi-ma
 (26) ^r1¹ ME 53 ^rGIŠ⁴hu-ir¹ GIŠ⁵ha-su-ur ^rka-ma-ka₄¹
 (27) 4 ME 20 GIŠ⁴KI+MIN GIŠ⁵ka₄-ru-kur KI+MIN
 (28) 72 GIŠ⁴KI+MIN GIŠ⁵hu-ma-ru-ud-da KI+MIN
 (29) PAP 6 ME 45 GIŠ⁴KI+MIN GIŠ⁵hu-sa me-ka₄-na KI+MIN
 (30) AŠ²ti-ik¹-ra-iš-ma HAL³ma-du-du¹-ma nu-iš-gi-ma
 (31) 55 GIŠ⁴hu-ir GIŠ⁵ha-su-ur
 (32) 50 GIŠ⁴KI+MIN GIŠ⁵MA^{MEŠ}
 (33) 4 ME 72 GIŠ⁴KI+MIN GIŠ⁵ka₄-ru-kur
 (34) 7 GIŠ⁴KI+MIN GIŠ⁵ba-a-^ria¹
 (35) 6 GIŠ⁴KI+MIN GIŠ⁵du-ud-da-um
 (36) PAP 6 ME GIŠ⁴KI+MIN GIŠ⁵hu-sa me-ka₄-na AŠ¹
 (37) ha-lib¹(ŠÀ)-^rba-iš¹-ma AŠ²ba-lu-um-ma HAL³za-ir-nu-ia
 (38) nu-iš-gi-ma
 (39) 1 ME 14 GIŠ⁴hu-ir GIŠ⁵ha-su-ur
 (40) 22 GIŠ⁴KI+MIN GIŠ⁵du-ud¹-da-^rum¹
 (41) 54 GIŠ⁴KI+MIN GIŠ⁵za-a-da-um
 (42) 46 GIŠ⁴KI+MIN GIŠ⁵ka₄-ru-kur ku-[ur²-ma²-na²]
 (43) 2 ME 74 GIŠ⁴KI+MIN GIŠ⁵KI+MIN
 (44) 80 GIŠ⁴KI+MIN GIŠ⁵MA^rMEŠ¹
 (45) 57 GIŠ⁴KI+MIN^r GIŠ⁵hu¹-[ma-ru-ud-da]
 (46) PAP 6 ME 97 GIŠ⁴KI+MIN ^rGIŠ⁵[hu-sa me-ka₄-na]
 (47) AŠ²pár-te-taš AŠ²ap-pi-iš-tap-^rda¹-[an-ma HAL³x x x]
 (48) nu-iš-gi-ma PAP hi AŠ²pár²¹-[x x x x HAL³na]-

Upper edge

- (49) ba-pír-ru-na šá-ra-man-na ^rAŠ¹[be-ul x x x x]
 (50) [AŠ²]tup-pi hi HAL³na-pa-pír-ru-^rna¹ [tu-ba-ka₄]

Translation

(01-08) 75 olive saplings², 241 karukur saplings², 60 kazla saplings², 5 silti saplings², 384 apple saplings², 30 quince saplings², 70 mulberry saplings², 303 pear saplings²; (09-11) total 1,168 saplings² – trees/an orchard for planting² at the plantation at Pirdubattiš, for Mišputra to take care of.

(12-14) 1,800 *karukur* saplings², 40 apple saplings², 27 pear saplings²; (15-17) total 1,867 saplings² – trees/an orchard for planting² at the storage complex at Pirdubattiš, for Ulla to take care of.
(18-19) Total 3,035 saplings² – trees/an orchard for planting², counted at Pirdubattiš.

(20-25) 552 apple saplings², 442 pear saplings², 59 quince saplings², 196 *karukur* saplings²; (24-25) total 1,249 saplings² – trees/an orchard for planting² at the plantation at Tikranuš, for Zimakka to take care of.

(26-28) 153 *kammaka* apple saplings², 420 *kammaka karukur* saplings², 72 *kammaka* pear saplings²; (29-30) total 645 *kammaka* saplings² – trees/an orchard for planting² at the plantation at Tikraš, for Maduduma² to take care of.

(31-36) 55 apple saplings², 50 fig² saplings², 472 *karukur* saplings², 7 quince saplings², 6 mulberry saplings²; (36-38) total 600 saplings² – trees/an orchard for planting² at the plantation at Halibbaš, at the storage complex, for Zarnuya to take care of.

(39-45) 114 apple saplings², 22 mulberry saplings², 54 olive saplings², 46 *ku[tmana²]* *karukur* saplings², 274 *karukur* saplings², 80 fig² saplings², 57 pear saplings²; (46-48) total 697 saplings² – t[rees/an orchard for planting²] at the plantation at Appištapan, for [PN] to take care of.

(48-50) This (is) the total at pla[ntations²] under the oversight of [Na]papirruna², year [xx]. This tablet [pertains to] Napapirruna.

Comments

(01 and *passim*) ^{GIŠ}*hu-ir*, appropriate to fruit trees of all sorts, is not a species but a semantic subset of *husa*. All commentators on PFa 33 have accepted Hallock's provisional rendering as “seedling” (Hallock 1978, p. 136). Hinz and Koch (1987, p. 689) add that it may equally refer to “saplings” (“Jungbäume”). The fact that no liquid or dry measure is expressed in either PFa 33 or Fort. 0119-101 agrees with these interpretations. In two ‘journals’ (registers) on wine, however, the word ^{GIŠ}*hu-ir* is attested with a dry measure; in these cases it occurs in a position parallel to ^{GIŠ}*pi-za(-an)*, which is also expressed in dry measure (Fort. 0283-101:43-44, Fort. 1688-102:36-38). Since *piz(z)a(n)* can alternatively be expressed in liquid measure and presumably denotes a product of the vineyard, it may refer to “pomace.” If correct, *hur* may be similarly interpreted and, given its expression in dry measure, denote “shoot, green part” or “(vine)leaf.” The difference with PFa 33 and Fort. 0119-101, where no measure is indicated, would then be that in these cases *hur* denotes something countable, rather than measurable, hence “seedling, sapling” or perhaps “graft.” The basic meaning of *hur* may accordingly have been “young plant, sprout, shoot, green part, offshoot” (for older Elamite lexical evidence see Henkelman n.d. 2).

^{GIŠ}[za²]-[a²-da²]-[um²]: restored after line 41.

(02) Of almost 60 other PFA texts and journal entries that mention *karukur*, most are “deposits” and accounts; among the few outlays are small quantities for bonus rations and large amounts for the royal table (2,500 l. in PF-NN 1735; 5,000 l. in PF-NN 0923). See

Henkelman n.d.2 for further discussion of this and the other fruits mentioned in PFa 33 and Fort. 0119-101.

(03) Among more than 90 occurrences of *kazla* in other texts and journal entries, recording amounts as high as 2,220 l. (PF-NN 2276, W), the number of outlays stands out by comparison to most other fruits, apart from apples, figs², and mulberries (see [Table 1](#)).

(04) The spelling *si-el-ti* recurs only in Fort. 0119-101. Elsewhere the word is spelled ^{GIŠ}*te-el-te* (unless *sa-el-te* in the obscure Fort. 1270-101+:09, 14, 15, 18 [Stolper n.d.1 No. 4] represents the same word). The fruit occurs in 22 texts and journal entries, mostly “deposits” and accounts, in amounts up to 620 l. (PF-NN 0085, C1).

(05) After *pit* and MA, *hasur*, “apple,” is the most common fruit in outlays, even substituted for normal rations of barley (PF 0992 and PF-NN 1521, both L1). Listed among other fruits, it usually appears in large amounts, up to 4,368 l. (PF-NN 0575, W).

(06) *baya*, “quince,” appears in 9 other texts, none of them recording outlays, in amounts up to 220 l. (Fort. 1850-102, C1/W).

(07) *du-* over erasure. “Mulberries,” *duddam*, appear mostly in “deposits” and accounts, in amounts up to 1,540 l. (Fort. 1999-101:24, W), but outlays for elite rations and bonus rations are comparatively frequent.

(08) “Pears,” (*h*)*umarudda*, appear in at least 8 other texts, in amounts up to 260 l. (Fort. 1951-101:03, C1/W), none recording outlays.

(09) ^{GIŠ}KI+MIN: ^{GIŠ} over erasure.

Discussions of meanings of *husa*, “tree, forest, grove” are listed in Hinz and Koch 1987, p. 72; see Henkelman 2008, pp. 441-45 and n.d.2 for further discussion; see Tavernier 2007b on *Husa* as a divine name.

Hallock’s proposed rendering of *mekana* as “(for) planting?” implies a Conjugation III verbal noun (infinitive, supine) from an unattested verb base **mek-*, expressing purpose (on such forms see Stolper 2004, p. 81; Henkelman 2008, pp. 409-410). Also possible is an unattested nominal base **mek-* with possessive-attributive *-na*, with adjectival sense. Henkelman (n.d. 2) tentatively proposes analysis as a factive Conjugation II-III form, [me.k.na], hence “for arranging, for lining, for planting in a regular pattern” (supine) or simple “of arrangement.”

In the absence of clear lexical evidence and any syntactic markers the quasi-syntactic layout of the columns provides the best clue to understanding the phrase *hur husa mekana*: *hur* are totaled as *hur*; various fruits are totaled *husa mekana*; *husa mekana* appears to be an apposition to a numbered total of *hur*. That *hur* is a form or part of a tree is unavoidable.

Hallock’s provisional rendering of the summary phrase *hur husa mekana* as “tree seedlings² (for) planting?” (Hallock 1978, p. 136) obscures the appositional construction and its inherent ambiguity. “Baumsetzlinge zum Baumpflanzen,” the interpretation given by Hinz and Koch (1987, p. 915 s.v. *me-qa-na*), fits the division of the phrase over two columns better, but

appears to assume a verbal compound *husa-mekana*, “for tree-planting” (Conjugation III verbal noun) or a nominal compound *husa-meka-na* “of/for the planting of trees” (with attributive suffix *-na*). The context and position of *husa* make it likelier, however, that *husa* is the object of *mekana*, hence “saplings²: *husa* to be planted².”

If *husa mekana* means “trees for planting” or “*meka* trees” the usage entails a partial redundancy between *hur* and *husa*. A nuance of *husa* more common in older Elamite, “grove,” would also be admissible, giving “orchard for planting” as the collective of individual trees.¹²

(10) *-bat-* over erasure.

Analysis of the name Pirdubattiš, found only here and Il. 16 and 19, as **Prθupatiš*, “lord of the flank” (Tavernier 2007a, p. 393 [4.3.174], following Hinz and Koch 1987, p. 209), suggests a military rank, but for a likely wider semantic range of **prθu-* (and **prsu-*) in western Old Iranian see Mayrhofer 1996, pp. 100-101 on Old Indian *párśu-*.

^{HAL}*mi-iš-pu-ut<-ra²*, if read correctly, is a contracted form of Miššaputra (also Miššapušra, reflecting **Visapuθra-*, “Prince” [as PN]; Tavernier 2007a, pp. 351-352 [4.2.1915]), a dialectal variant of Misapušša (**Viθapuša-*; *ibid.* p. 355 [4.2.1934]). None of the individuals with either variant of the name can be identified with the Mišputra of PFa 33.

(15) 67: digit 7 over erasure.

(16) *-du-bat-* over erasure.

Parallel entries for fruit at a *partetaš* and a *balum*, as in PFa 33, also appear in Fort. 1323-102 (C1/W) and Fort. 1999-101 (W); and where many “deposits” (C1) refer to fruit at a *partetaš*, at least one (Fort. 1388-101) refers to fruit at a *balum*. Hallock (1969, p. 674) surmised that *balum* was a synonym of *ambaraš* (**hambāra-*) and/or *kanti*, both also indicating storage sites. It is nevertheless prudent to distinguish among the terms for such locales (cf. Henkelman 2008, pp. 398-400). In other contexts, *balum* may be the location of sacrifices (Henkelman n.d.1); it is connected with storage or production of barley, *tarmu*, sesame, and wine (e.g. PF 0200, PF 0435, PF 0623); once (PF 1589) a *balum* manager (*balum nuškira*) issues rations for women grinding (grain), suggesting that they worked at a *balum*. Given the implied size and the attested and implied range of goods and activities, a *balum* must be something more complex than a simple magazine or utilitarian building.

^{HAL}*ú-ul-la* (^{HAL} over erasure), found only here, is probably an Elamite hypocoristic of a name formed with the divine name Uli (Henkelman 2014).

(18) *-na¹* on right edge.

(19) *-bat-* over erasure; *mu-* over erasure; *-šá-* preceded by erasure.

(20) *-ir¹* (tablet NI).

12 Parsing the phrase as [hur husa.me ka.n.a], “tree seedlings² for *ka*-ing” (taking *kana* as a Conjugation III form of an unattested verb *ka-*) would be admissible in Middle Elamite, but the collapse of the inherited system of gender-suffixes and its replacement in Achaemenid Elamite by a single construction for attributive expressions (referent followed by attribute + *-na*) makes this solution unattractive for PFa 33 and Fort. 0119-101.

(25) *nu-iš-gi-ma* on right edge.

The place Tikranuš (^{Aš}*ti-ik-ra-nu-iš*, once ^o*ra-na*; *Tigranīš; Tavernier 2007a, p. 398 [4.3.222]), a site of sacrificial feasts and with royal connections (Henkelman 2008, p. 440; 2011, pp. 109, 138) has been surprisingly difficult to locate in the relative topography of Achaemenid Pārsa. In the fragment Fort. 1262-102, collocation of Tikranuš (line 03') with the PN Napapirzana (line 07') offers a hint as Napapirzana/Napapartanna is connected to Kamenuš, Tikraš, Appištapdan, and Persepolis (see comments to ll. 48f., below), places that are also interconnected in other contexts (Koch 1990, pp. 109, 276-77, Henkelman 2010, p. 680 fn. 37), and all located in the Persepolis region.

Among several individuals named Zimakka (^{HAL}*zī-ma-ak-ka₄*, ^o*ik-ka₄*, ^o*ka₄*; *Jīvaka, Tavernier 2007a, pp. 221-222 [4.2.902]), of first interest is one who oversees “deposits” of fruit and *tarmu* at Upirizzan, Kandukka, and a third place (PF-NN 0619, PF-NN 0810, PF-NN 0813, PF-NN 2088; also PF-NN 0831 [C2]). All except PF-NN 0831 are sealed with PFS 0260, a seal also used with “deposits” (C1) at plantations at various places, including places that occur in PFa 33: Akkuban (PF-NN 1455), in turn connected to Appištapdan (PF-NN 0049, PF-NN 1581, Fort. 1334-102, Fort. 2043-102), and Tikraš (PF-NN 2628). The Zimakka who allocates 5,000 l. of *karukur* for the court at Appištapdan (PF-NN 0923, J) may be the same person, given that logistics officials (identified with the phrase PN *šaramanna*) sometimes act as suppliers when the court is involved. The Zimakka located in PFa 01 (C1/W) at Dautiya, a place collocated with Tikraš (PFa 01, Fort. 1420-102, Fort. 1551-101) may also refer to the same official, active in a limited area (Tuplin 2008, pp. 350, 361-62 with fn. 119). The case of the Zimakka who oversees the intake of fruit and the payment of fruit as bonus rations at Uššakampan (PF 0254[?], PF-NN 1520, PF-NN 1521, PF-NN 1817, Fort. 2148-101) is of less certain relevance. Uššakampan (also Uršakampan) is connected to Persepolis itself *via* the fruit supplier Šutena (PF 0053, PF-NN 2598, PF-NN 1520, PF-NN 1521, etc.) and to Akkuban *via* the grain supplier Miramanna (PF 2043, PF 2075, PF-NN 1432, PF-NN 2160). Akkuban, as noted, is connected to Appištapdan and Tikraš; identification with the Zimakka active in the Tikranuš-Tikraš-Appištapdan district is therefore possible but not inevitable.

(26) The reading of '*kam-ma-ka₄*', written over an erasure, is corroborated by Fort. 0119-101:21. Since it applies to three species in PFa 33:26-28, a fourth in Fort. 0119-101:21, and a total of three in PFa 33:29, it must modify not the fruit but the trees (unless KI+MIN in PFa 33:29 is an error). The expression *me-en* ^{A^{MES}} *kam-ma-ka₄*[?] in broken context at the end of a journal fragment (Fort. 0117-002: 04'') is unhelpful. A relation with Old Iranian **kāmaka-*, “wish, desire, bonus” is unlikely as that term is always rendered with single intervocalic *-m-* (*ka₄-ma-ak-ka₄*, *ka₄-ma-ka₄*, *ka₄-ma-kaš*, etc.; see Tavernier 2007a, p. 408 [4.4.3.5]).

(28) MIN: on right edge.

(29) KI: over erasure.

(30) *ti-ik*^l- over erasure; *-ik*^l- looks like GI. Like Appištapdan and Tikrakkaš, Tikraš (^{Aš}*tuk-ráš*, ^{Aš}*ti-ik-ráš*, ^{Aš}*ti-ik-ra*, *Tigra-, Tavernier 2007a, p. 398 [4.3.220]) is a site of cultic activity, with royal connections, including, perhaps, a palace (PT 83, see Henkelman 2008, p. 322

with fn. 744). Its location in the Persepolis region, close to Persepolis itself, is not in doubt (Hallock 1978, p. 116, Koch 1990, p. 78-87, 261, 274, Arfaee 2008, p. 19, 21, Henkelman 2008, pp. 316-23, 462, 489-90, 509, Henkelman and Stolper 2009, pp. 293, 309). Pertinent to fruit production at Persepolis are PF 1981, Fort. 1371-102 (fruit accounts), and PFa 01 (C1/W). Compare also Fort. 1294-102 (wine account) and PF-NN 0462 (wine revenue).

(30) HAL^r *ma-du-du²-ma*, if correctly read, does not recur in the known texts of the PFA.

(32) GIŠMA^{MEŠ} (reading unknown), tentatively “fig?” (despite Hallock) and *pit* are the most commonly attested tree crops in the PFA, in amounts up to 3,000 l. of *pit* (PF-NN 0834) and 13,000 l. of MA (PF-NN 0150). Both are frequent in outlays, mostly as bonus rations, but MA also appears as regular rations (PF-NN 1934, Fort. 1750-102) or travel rations (PF 1577).

(35) *-um* over erasure.

(36) 6 ME: 590 expected, if the figures in lines 31-35 are correct.

(36f.) AŠ^{ha-lib-^rba-iš^r-ma}: otherwise unattested.

(37) AŠ over erasure (of BA?).

HAL^{za-ir-nu-ia}: this personal name occurs only here in this spelling, but is also reflected in HAL^{šá-ir-nu-ia} (PF 1707; cf. Tavernier 2007a, p. 370 [4.2.2052]). There, a caretaker of cattle at Ibat is probably not the same individual.

(39) 1 ME over erasure.

(40) GIŠ^{du-ud^l-da-^rum²}: GIŠ over erasure (of DU?).

(41) 54: preceded by erasure.

Three C1/W texts (Fort. 1362-101, Fort. 1920B-101, Fort. 1951-101) refer to olives. In at least one (Fort. 1951-101) and probably another (Fort. 1920B-101), the olives are in a list connected with Turpiš, otherwise found in “deposits” of fruit at a plantation at Nupištaš (PF 0146, PF-NN 0817, PF-NN 0989).

(42) *ku-[ut²-ma²-na²]*: see Fort. 0119-101:11, below.

(46) 697: 647 is expected, if the figures in lines 39-45 are correct.

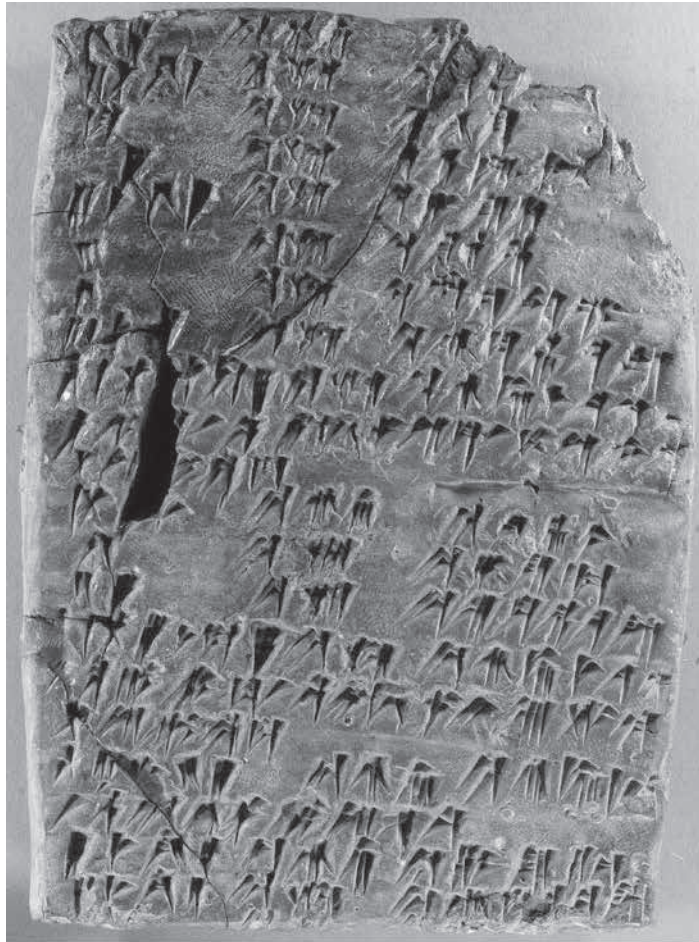
(47) Appištapdan (AŠ^{ap-pi-iš-tap-da}, °*da-an*, °*da-na*, AŠ^{ap-pi-iš-tap^{ip}-da-an}, AŠ^{ha-pi-iš-da-ap-da}; see Tavernier 2007a, p. 372 [4.3.3]), mentioned in more than 30 texts and entries, like Tikranuš, was a place with royal connections, the site of sacrificial feasts (Henkelman 2008, p. 439-40, 549-50; 2010, p. 715, 727; 2011, p. 109-110, 144-151; 2017b, p. 285; n.d.1; Henkelman and Stolper 2009, p. 286). Collocations with Rakkan (PF 1947:21-22, Fort. 1249-101 [Stolper n.d.2, No. 8], Fort. 1278-101, etc.), Tikraš (Fort. 1298-101, Fort. 1405-102, etc.), Persepolis (PF-NN 2493:55-57, Fort. 0371-102, etc.) and nearby Matezziš (PF-NN 2493:58-

60, Fort. 1248-103, etc.) firmly place Appištapdan in the so-called Persepolis region (cf. Hallock 1978, p. 116). Germane to the plantation there are PF-NN 0923 (5,000 l. of *karukur* for the royal table), PF-NN 2486: 47'-48' (fruit sacrifices), Fort. 00X1-101, Fort. 1760-101, Fort. 1334-102 (all C1/W), and perhaps wine accounts PF-NN 1468 and Fort. 1249-101 (Stolper n.d.2 No. 8).

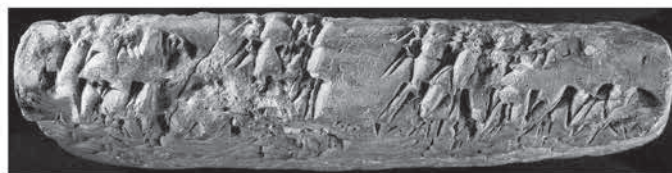
(48) *-ma* followed by erasure (of PAP?). *pár²¹*: perhaps *ba²* (so Hallock).

(48f. and 50) Although the sign *-ru-* is clear in both occurrences, it is nevertheless inviting to adopt a simple emendation to *-tan¹*-, arising from a misreading by the scribe who compiled this text from shorter source documents. The emended spelling would be an unproblematic variant of ^{HAL}*na-pa-pár-tan-na* (*Nāfabrdana-; Tavernier 2007a, p. 255 [4.2.1149]). There is probably only one individual with the name of Napapartana (var. Napapirzana), a logistics official (PN *šaramanna*) overseeing the production, intake and distribution of barley (and other cereals) and probably also of fruit (cf. Koch 1990, p. 78-79, 267; Henkelman 2017b, p. 285). With barley he occurs in connection with Akkuban (PF 2075, Fort. 1982-101; also PF 1941:01), Appištapdan (Fort. 1405-102 [Henkelman 2017b, p. 285]; also PF 1941:10), Kamenuš (PF 1941), Persepolis² (Fort. 1203-101 [^{AŠ}*ba-ir-te-iš*]; also PF 1941:18). and Tikraš (PF 1981, Fort. 1298-101:42', Fort. 1405-102:07-09, 10-13, 14-18; also PF 1941:03, 05-06). One of the barley accounts here mentioned, PF 1981, also lists amounts of apples, *pit*, figs², *telte*, *kazla*, and mulberries. A fragment of an irregular C1/W (above, fn. 9) mentions *pit*, the name of Napapirzana (Napapartanna), and the toponym Tikranuš (Fort. 1262-102). Napapartanna is once said to have delivered barley from the (his²) "house" (*ulhi*), perhaps an estate (PF 2075:08; see Garrison and Henkelman n.d. §7.1 *ad l.* 6).

(50) *-pa-* over erasure.

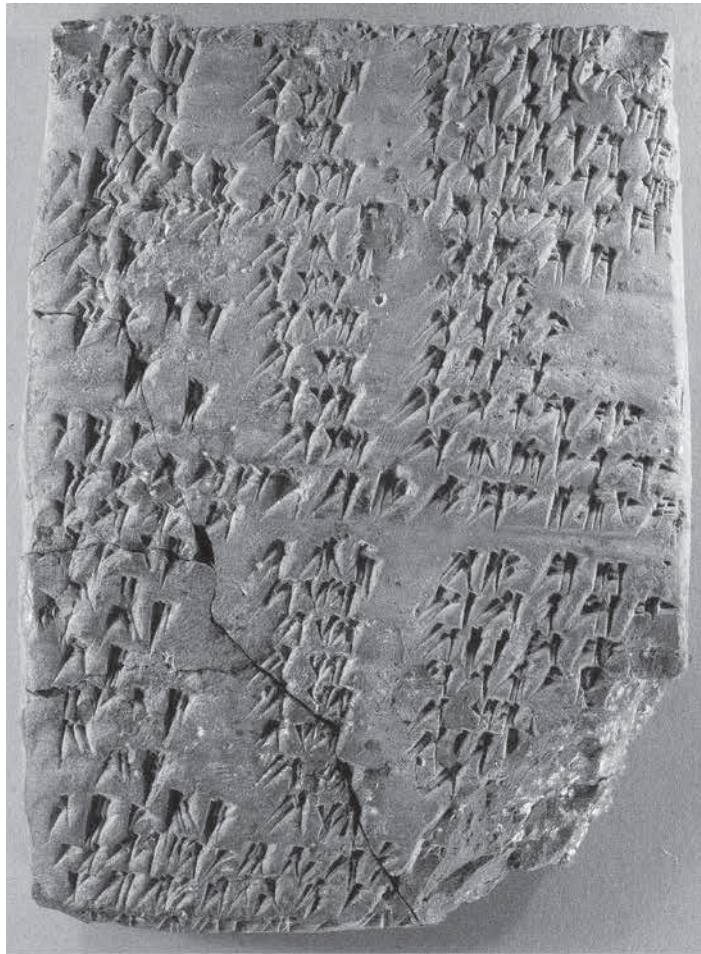


PFa 33 Obverse



Lower Edge

Fig. 1a. PFa 33 Obverse and Lower Edge.



PFa 33 Reverse

1 cm



**Right
Edge**



Upper Edge

Fig. 1b. PFa 33 Reverse, Right Edge, Upper Edge.

Fort. 0119-101

(8.6) x 19.5 x 2.3 cm

No preserved seal.

Obverse

(01) [xx]	^r GIŠ ^r hu'-ir	GIŠ ^r ha-su'-[ur]
(02) [xx]	^r GIŠ ^r KI+MIN ^r	GIŠ ^r za-a-'da'-um
(03) [xx]	GIŠ ^r KI+MIN	GIŠ ^r du-ud-da-um
(04) [(xx)](+)'20'	GIŠ ^r KI+MIN	GIŠ ^r ka ₄ -ru-'kur'
(05) [(xx)](+)'20'	GIŠ ^r KI+MIN	GIŠ ^r ir-da-iš-ti-iš
(06) [(xx)] 85	GIŠ ^r KI+MIN	GIŠ ^r ba-a-ia
(07) [(xx)] '3' ME 60	GIŠ ^r KI+MIN	GIŠ ^r ka ₄ -na-ak-du-iš
(08) [(xx)] '1' ME 77	GIŠ ^r KI+MIN	GIŠ ^r ú-ma-ru-ud-da
(09) [(xx) x] ME 10	GIŠ ^r KI+MIN	GIŠ ^r zì-pi-el
(10) [(xx)] 7	GIŠ ^r KI+MIN	GIŠ ^r MA ^{MEŠ}
(11) [(xx) x] 'ME' 16	GIŠ ^r KI+MIN	GIŠ ^r kaz ₀ '-la 'in [?] -ni [?] ku-ut-man-'na [?]
(12) [PAP x] 'ŠI' 5 ME 97	GIŠ ^r KI+MIN	GIŠ ^r GIŠ ^{MEŠ} me-'ka ₄ -na'
(13) [x x x ^{HAL} ha]-tur-ra-ud-da nu-iš ¹ -gi-ma		
(14) [(xx)] 'x' ME 10	GIŠ ^r hu-ir'	GIŠ ^r ha-su-ur
(15) [(xx)] 30	GIŠ ^r KI+MIN	GIŠ ^r ka ₄ -na-ak-du-iš
(16) [(xx)] '90	GIŠ ^r KI+MIN ^r	GIŠ ^r zì-pi-el
(17) [xx]	GIŠ ^r KI+MIN	^r GIŠ ^r ba-a-ia
(18) [(xx)] 'x'(+)2	GIŠ ^r KI+MIN	GIŠ ^r ú-ma-ru-ud-da
(19) [(xx)]	GIŠ ^r KI+MIN	GIŠ ^r du'-ud-da-um
(20) [(xx)]	GIŠ ^r KI+MIN	GIŠ ^r ir-'taš ^r -ti-iš
(21) [(xx)]	GIŠ ^r KI'+[MIN]	^r GIŠ ^r kaz ₀ -la' kam-ma-ka ₄
(22) [PAP x]+ ^r 2 ŠI ^{o?} [xx] 'x'	GIŠ ^r KI+MIN ^r	GIŠ ^r GIŠ ^{MEŠ} me-ka ₄ -na
(23) [(x)] ^{HAL} gi-da-ud'-da nu-iš-gi-e-ma		
(24) [(xx)] 45	GIŠ ^r hu-ir	GIŠ ^r ha-su-ur
(25) [(xx)] 3 ME 60	GIŠ ^r KI+MIN	GIŠ ^r ka ₄ -na-ak-du-iš
(26) [(xx)] 2 ME 99	GIŠ ^r KI+MIN	GIŠ ^r za-a-da-um
(27) [(xx)] 'x' ME 31	GIŠ ^r KI+MIN	GIŠ ^r si-el-ti
(28) [(xx) x] 'ME' 23	GIŠ ^r KI+MIN	GIŠ ^r du-ud-da-um
(29) [(xx)] 'ME' 99	GIŠ ^r KI+MIN	GIŠ ^r ú-ma-'ru'-ud-da
(30) [xx]	^r GIŠ ^r KI+MIN	GIŠ ^r da-ku-iš
(31) [xx]	^r GIŠ ^r KI+MIN	GIŠ ^r ba-a-ia
(32) [(xx)] '20'(+)6	GIŠ ^r KI+MIN	GIŠ ^r zì-pi-el
(33) [(xx)] '7'	GIŠ ^r KI+MIN	GIŠ ^r ka ₄ -ru-kur
(34) [PAP x ŠI x] ME 68	GIŠ ^r KI+MIN ^r	GIŠ ^r GIŠ ^{MEŠ} me-ka ₄ -na
(35) [^{HAL} x-x(-x)]-šá-ak-ka ₄ nu-iš-gi-'ma'		
(36) [[(xx)] 'x'	GIŠ ^r hu-ir	GIŠ ^r ha-su-ur
(37) [xx]	GIŠ ^r KI+MIN	GIŠ ^r ka ₄ -na-ak-du-'iš'
(38) [xx]	GIŠ ^r KI+MIN	GIŠ ^r ir-taš ^r -ti-iš ^r
(39) [xx]	GIŠ ^r KI+MIN]	GIŠ ^r si-el-ti

Lower Edge

(40) [XX	GIŠ _{KI+MIN}]	°GIŠ _{zĩ-pĩ} -el
(41) [XX	GIŠ _{KI+MIN}	GIŠ _] ú-ma-°ru-ud°-da
(42) [XX	GIŠ _{KI+MIN}	GIŠ _{zã} °]-°ri°-ur°-ka ₄ °?

Reverse

(43) [XX	GIŠ _{KI+MIN}	GIŠ _X]-°X-X-X-(X)°
(44) [XX	GIŠ _{KI+MIN}	GIŠ _] °X-X-X-X°
(45) [PAP]	°X X X X X GIŠ°GIŠ ^{MEŠ}
(46) [X X X (X)]	°AŠ _{pár} -°te-taš° [X] °X X X X e°-ma°	
(47) [XX]	°GIŠ _{hu-ir}	GIŠ _{du} -ud-da-°um°
(48) [(XX) X] °ME°	GIŠ _{KI+MIN} °	GIŠ _r °kaz ₀ -la°
(49) [(XX) X] °X°	GIŠ _{KI+MIN} °	GIŠ _r °ba°-a-ia
(50) [(XX)] 20(+) ² °?	GIŠ _{KI+MIN}	GIŠ _] ú-ma-ru-ud-da
(51) [(XX)] 3 ME 84	°GIŠ° _{KI+MIN}	GIŠ _{ka₄} -ru-kur
(52) [XX]	°GIŠ _{KI+MIN} °	GIŠ _{zã} °-ri°-ur°-ka ₄
(53) [(XX)] 10	GIŠ _{KI+MIN}	GIŠ _{ha-su-ur}
(54) [PAP X] °ŠI 3°? ME °X(+) ⁹ °	GIŠ _{KI+MIN} °	GIŠ _r °GIŠ ^{MEŠ} me-ka ₄ -na °AŠ _r °pár°-te-taš
(55) [X X X (X)]-°X°-da°-ma °HAL°pu°-ik-šã°? nu-iš-gi-ma		
(56) [(XX)] 11	°GIŠ°[hu]-°ir°	GIŠ _{ha-su-ur}
(57) [XX]	°GIŠ _{KI+MIN} °	GIŠ _{ka₄} -ru-kur
(58) [XX]	°GIŠ _{KI+MIN} °	GIŠ _r °ba°-a-ia
(59) [XX]	°GIŠ _{KI+MIN} °	GIŠ _r °zĩ-pi-el
(60) [XX]	°GIŠ _{KI+MIN} °	GIŠ _r °ú-ma°-ru-ud-da
(61) [XX]	GIŠ _{KI+MIN}	°GIŠ _{MA} °? MEŠ°
(62) [XX]	GIŠ _{KI+MIN}	°GIŠ _{du-ud} -da-um
(63) [PAP X ŠI X ME XX]	GIŠ _{KI+MIN} °	«GIŠ» GIŠ _] GIŠ ^{MEŠ} me-ka ₄ -na °HAL
(64) [X X X X X (X)]-°X-mã°? AŠ ₂ °mi°-iš°-ba-iš°-šã-ti-iš pír-ri-ik°-ka ₄		
(65) [XX	GIŠ _{hu}]-ir	°GIŠ° _{MA} ^{MEŠ}
(66) [XX]	°GIŠ _{KI+MIN} °	GIŠ _r °ka ₄ °-ru-kur
(67) [XX]	°GIŠ _{KI+MIN} °	GIŠ _r °du°-[ud]-°da°-um
(68) [PAP X ŠI X ME XX	GIŠ _] °KI+MIN°	GIŠ _] GIŠ ^{MEŠ} me°-ka ₄ -na °HAL°mi-iš-še-
(69) [X X (X) nu-iš]-°gi-mã°? AŠ _r °pár-te°-taš° AŠ ₁ °ha°-ri-ia°-ri°-iz-za-iš-mã		
(70) [XX]	GIŠ _{hu-ir}	°GIŠ _{ha-su-ur}
(71) [XX]	GIŠ _{KI+MIN}	°GIŠ°[du]-°ud-da-um°
(72) [XX]	GIŠ _{KI+MIN} °	°GIŠ°[ba]-a°-ia°
(73) [XX]	GIŠ _{KI+MIN}	°GIŠ _{MA} °[MEŠ]
(74) [XX]	°GIŠ° _{KI+MIN}	GIŠ[X-X(-X)]
(75) [PAP X ŠI X ME XX]	°GIŠ° _{KI+MIN}	GIŠ _] GIŠ ^{MEŠ} °me°-ka ₄ -°na °HAL!°ba°?°-
(76) [X X X X (X) nu-iš]-°gĩ-mã°? AŠ _r °pár-te°-taš° AŠ ₂ °ma-du-mã-ti-iš-na-mã		
(77) [XX	GIŠ _] °hu-ir°	GIŠ _{ha-su-ur}
(78) [XX	GIŠ _] °KI+MIN°	GIŠ _{kaz₀} -la
(79) [XX	GIŠ _] °KI+MIN°	GIŠ _{MA} ^{MEŠ}
(80) [XX	GIŠ _] °KI+MIN°	GIŠ _{ka₄} -ru-kur
(81) [PAP X ŠI X ME XX	GIŠ _{KI+MIN}]	°GIŠ° _{GIŠ} ^{MEŠ} °HAL°su-za-bã nu-iš-gi-mã
(82) [X X X X X X X (X) GIŠ°?]	°GIŠ° ^{MEŠ} °HAL°ma°-ak°?°-ka ₄ -ri-iz-za nu-iš-gi-mã	

(83) [x x x x x x (x) AŠ²hu²-ma²]-^rnu²-iš² ha-tu²- ma

(84) [x x x x x x x x (x)] GIŠhu-ir GIŠGIŠMEŠ me-ka₄-na

Upper Edge

(85) [^{HAL}ma-ra-za šá-ra-man]-^rna AŠ²[be-ul xx]-^rum²-me-man-na

(86) [AŠ²tup-pi hi] ^{HAL}ma-ra-za tu-^rba-ka₄²

Translation

(01-11) [xx] apple saplings², [xx] olive saplings², [xx] mulberry saplings², [x]20 *karukur* saplings², [(x)]20 *irtaštiš* saplings², [(x)]85 quince saplings², [(x)]360 *kannakduš* saplings², [(x)]177 pear saplings², [(x)]110 *zipil* saplings², [(x)]7 fig² saplings², [(x)]116 *kazla* saplings² (that are) not ... ; (12-13) [total: x],597 saplings² – trees/an orchard for planting² [at ...], for [Ha]turadda to take care of.

(14-21) [(x)]110 apple saplings², [(x)]30 *kannakduš* saplings², [(x)]90 *zipil* saplings², [xx] quince saplings², [(x)]2 pear saplings², [xx] mulberry saplings², [xx] *irtaštiš* saplings², [xx] *kazla kammaka* saplings²; (22-23) [total] 2,[xxx] saplings² – trees/an orchard for planting² [(...)], for Gidadda to take care of.

(24-33) [(x)]45 apple saplings², [x],360 *kannakduš* saplings², [(x)]299 olive saplings², [x]31 *silti* saplings², [x]23 mulberry saplings², [x]99 pear saplings², [xx] *dakuš* saplings², [xx] quince saplings², [(x)]26 *zipil* saplings², [x]7 *karukur* saplings²; (34-35) [total x,x]68 saplings² – trees/an orchard for planting² [(...)] for [...]šakka to take care of.

(36-44) [xx] apple saplings², [xx] *kannakduš* saplings², [xx] *irtaštiš* saplings², [xx] *silti* saplings², [x] *zipil* [saplings²], [xx] pear saplings², [xx] *zaritka*² [saplings²], [xx ... saplings²], [xx ... saplings²]; (45-46) [total ... saplings² ...] trees/an orchard [...] at the plantation for [PN] to [...].

(47-53) [xx] mulberry saplings², [x]00 *kazla* saplings², [(xx)]^rx² quince saplings², [(x)]22² pear saplings², [(x)]384 *karukur* saplings², [xx] *zaritka* saplings² [(xx)]10 apple saplings²; (54-55) [total: x],3[x]9 saplings² – trees/an orchard for planting², at the plantation in [...]da², for Pukša² to take care of.

(56-62) [(xx)]11 apple saplings², [xx] *karukur* saplings², [xx] quince saplings², [xx] *zipil* saplings², [xx] pear saplings², [xx] fig² saplings², [xx] mulberry saplings²; (63-64) [total ...] saplings² – trees/an orchard for planting²; [PN ...] in [the plantation²] (called) Mišbašatiš, gone².

(65-67) [xx] fig² [sap]lings², [xx] *karukur* saplings², [x] mulberry saplings²; (68-69) [total ...] saplings² – trees/an orchard for planting², for Mišše[...] to take care of, at the plantation at Hariyarizzaš².

(70-74) [xx] apple saplings², [xx] mulberry saplings², [xx] quince saplings², [xx] fig² saplings², [xx ...] saplings²; (75-76) [total ...] saplings² – trees/an orchard for planting², for Ba²[... to take] care of, at the plantation of Mandumatiš.

(77-80) [xx] apple saplings², [xx] *kazla* saplings², [xx] fig² saplings², [xx] *karukur* saplings²; (81-83) [total: ... saplings²] – trees/an orchard for Suzaba<nuš>² to take care of [...] and] trees/an orchard² for Makkarizza² to take care of [...] in [two²] villages².

(84-86) [This (is) the total ...] saplings² – trees/an orchard for planting² [under the oversight of Maraza²], year [xx]. [This tablet] pertains to Maraza.

Comments

(05) *irtaštiš* (otherwise regularly spelled ^{GIŠ}*ir-taš-ti-iš*) occurs in at least 37 texts and journal entries, in amounts up to 1,392 l. (Fort. 2164-001, W); all attestations are in accounts and single- and multiple-entry “deposits,” except Fort. 0000-111:03'-06', a journal entry listing various fruits issued as bonus rations. The proposed meaning, “prune (lit. red food)” (Tavernier 2007a, p. 460 [4.4.20.14], following Hinz) is untenable (discussion in Henkelman n.d.2).

(07) *kannakduš* appears, in various spellings, in seven other texts, in amounts up to 240 l. (Fort. 1899-101, W). No interpretation has been put forward, but a connection with Akkadian *kanaktu* (an aromatic, attested from the late third millennium on, see Jursa 2009) seems obvious.

(09) *zipil* occurs otherwise only in Fort 1389-101 and Fort. 2029-103 (both C1/W; 230 l. and 110 l.).

(11) ⁱⁿ-ⁿⁱ *ku-ut-man-^{na}*’ (last two signs on the right edge): negative of the conjectured form *ku[tmanna]*, said of *karukur* trees, in PFa 33:42. If *kutmanna* is a Conjugation III_m form of *kuti-*, “carry,” its nuance here might be “not (yet) bearing (fruit).” Restoring an unnegated occurrence of the same term in PFa 33:42 would, however, produce an implausible contrast between “bearing” *karukur* trees and otherwise unqualified *karukur* trees. Also unconvincing is interpretation as a Conjugation III form of *kutma-* (previously read as *tarma-*), an active counterpart to intransitive-passive *kutmak(a)*, “complete, finished” (Stolper n.d.2). A positive expression, “finishing,” might be a plausible way to characterize trees as “maturing, immature,” but what would a negative, “not finishing,” express?

(12) ^{GIŠ}^{GIŠ}^{MEŠ} corresponds unambiguously to ^{GIŠ}*ma-lu*, “wood (as material)” in DSz 48, referring to people working the wood for the Susa palace (Hinz 1950). The parallels between PFa 33 and Fort. 0119-101 now show correspondence with ^{GIŠ}*hu-sa*, “tree, grove” (full discussion in Henkelman n.d.2).

(12) *Haturrada* (also ^{HAL}*ha-tur-ra-da*, ^o*ra-ad-da*, ^{HAL}*ha-tar-ra-da*, ^o*ra-ad-da*, and perhaps ^{HAL}*ha-da-ra-da*, *^Ā*ṭrāta-*, Tavernier 2007a, p. 125 [4.2.194]) is the name of several individuals in the PFA. Twelve or more texts appear to refer to the one mentioned here. (1) The fruit account Fort. 1899-101, places him at a new (*pipšina*) plantation (l. 14), probably at Matezziš (cf. ll. 05, 29, 35). The same text also mentions *Gidadda* (l. 35, see l. 23 below) and *Pukša* (l. 60, see l. 55 below) at the same site, and repeats the name of *Haturrada* at the end (l. 63), now as a supplier designated *abbe-abbe-huttira*, “food producer.” (2) A closely similar fruit account, Fort. 1927-101, again puts *Haturrada* at a plantation (l. 67',

perhaps l. 28'), again probably a new one at Matezziš (cf. ll. 60', 74', 80', 84'); it again mentions Gidadda (l. 84') at the same place, and probably names Haturrada again at the end, this time as "assigner" (PN *dama*, l. 03'). (3-4) Haturrada the "food-producer" (*abbe-abbe huttira*) is a recipient of an uncertain commodity in Fort. 1975-101:07' (V) and of barley at Persepolis in PF 1940:07-09. (5) The account PF-NN 2345 lists flour, wine and fruit received by Haturrada, who processed or prepared fruit with it (ll. 03, 10), and the same text computes a balance of fruit and wine on deposit for allocation by Haturrada as supplier (*kurman* PN-*na*, ll. 16-17). (6) Fort. 0024-102, a fragment of a fruit journal, mentions Matezziš at the beginning and Haturrada at the end. (7) In the tabular fruit account Fort. 2043-101:20'', ^{HAL}*ha-da-ra-da* may be a variant spelling of Haturrada, since the same text mentions other actors named in Fort. 0119-101, namely Pukša (l. 06'', see l. 55 below), Gidadda (l. 27'', see l. 23 below), and Maraza, the last in connection with Persepolis (ll. 09'-10', 26'-27', see l. 85 below). (8) Fort. 1999-101, a fruit account combined with journal entries, puts Haturrada at the *balum* (l. 02) at Mišdubaš and Gidadda at the *partetaš* there (l. 10). This place recurs as the site of a plantation in PF 0158 (C1, spelled ^{AS}*mi-iš-du-uk-ba*, see Hinz and Koch 1987, p. 926, see Tuplin 1996, p. 96) and Fort. 1792-102 (C1/W). It is connected with both Tikraš (Fort. 1420-102, Fort. 1551-101) and Persepolis (PF-NN 2492:14-15, 16-17, 18-19, 20-21, 22). (9-10) Haturrada appears in interim summaries of the multiple-entry C1/W texts Fort 1881-101:04' and Fort. 00X1-101:04' and 11''. The former text also refers to the place Pirnukuš (08') and the place Hazidda (08''-09''), connected to Tirazziš (PF 2018:18-21). The latter refers to the places Mandama² (11'), Appištapdan (16', see comment on PFa 33:47), Ukbarakka (10'', associated with Mandumatiš, Fort. 0232-101), and perhaps Akkuban (09', above, Table 1), placing this Haturrada in the Persepolis region. (11) The tabular fruit account Fort. 1988-102 mentions Haturrada in at least three interim summaries (ll. 06, 18, 25), but preserves no place name. (12) A short tabular fruit account, Fort. 1333-101, records amounts of fruit from three places, including Rakkān and Antarrantiš, all "deposited to" (*uggi zikkaka*) Haturrada. In sum, a fruit caretaker, producer, and perhaps processor named Haturrada was active in Matezziš, Mišdubaš, and perhaps other places in the Persepolis region, evidently all close to Persepolis itself.

(13) *ir'*: tablet NI.

(23) Erasure follows -'ud'-*da*. The name Gidadda (also ^{HAL}*gi-da-ad-da*, *Gēdāta-, Tavernier 2007a, p. 190 [4.2.653]) occurs in at least six other texts, in five collocated with one or more names of other actors mentioned in Fort. 0119-101. (1) In Fort. 1362-101 (fruit, C1/W), interim summaries name Gidadda (l. 10) and Pukša (l. 44, see l. 55 below); no place name is preserved. (2) A tabular fruit account, Fort. 2043-101 mentions Maraza in connection with Persepolis (ll. 09'-10', also 26'-27', see l. 85 below), as well as Pukša (l. 06''), Gidadda (l. 27''), and perhaps Haturrada (^{HAL}*ha-da-ra-da*, l. 20'') without location. (3) Another tabular fruit account, Fort. 1899-101, locates Gidadda (l. 35) and probably Haturrada (l. 14) at a new (*pipšīna*) plantation at Matezziš, and mentions Pukša in connection with grand totals at the end (l. 60). (4) A similar fruit account, Fort. 1927-101, again puts Gidadda (l. 84') and Haturrada (l. 67', cf. l. 28') at the new plantation at Matezziš. (5) The tabular account Fort. 1999-101 records amounts of fruit at installations at Mišdubaš, including a *balum* under Haturrada (l. 02) and a *partetaš* under Gidadda (l. 10). Mišdubaš is connected

with Tikraš and Persepolis (see l. 12 above). All this establishes Persepolis and its vicinity as the area of Gidadda's activity. (6) PF 0187 concerns a "deposit" of *tarmu* (emmer?) in the name of Gidadda; the seals impressed on this tablet suggest a different area and perhaps a different person.

(25) *-iš* on right edge.

(30) *dakuš* appears in at least twenty other texts and journal entries, usually in modest quantities (up to 330 l. in Fort. 2047-002, perhaps 440 l. in Fort. 0317-104:13'-15').

(35) Among possible restorations of the PN, most promising are ^{[HAL}*te*]-šá-ak-ka₄ and ^{[HAL}*mi-iš*]-šá-ak-ka₄. A Tešakka appears in accounts of figs² (MA) at Tuppiruna (PF 1983, PF 1984, PF-NN 2347) and acts as fruit supplier at Turšikkan (Fort. 2223-102, W). Miššakka figures in a "deposit" of royal mulberries at Pirraššetaš (PF-NN 1418; on the GN see Arfae 2008, p. 10, 15-16 and Henkelman 2010, p. 705 fn. 142).

(37) *-iš'* on right edge.

(42, 52) *zaritka(m)* appears in one fragmentary journal and in at least seven accounts, in amounts up to 150 l. (Fort. 1999-101:23-24). It occurs in a ninth text, a receipt for revenue (PF 0644, category G), in the form *daritkan*. The two forms transcribe dialect variants **zarit-ka* and **darit-ka* (Henkelman n.d.2), hence indicating a small yellow/green fruit (on the range of Avestan *zairi-*, see Rossi 2007, p. 348 n. 42).

(46) *'x x x x e²-ma'*: traces do not favor the expected *'nu-iš-gi-e-ma'*.

(54) *-te-taš* on right edge.

(55) *-iš²-* (or *-da²-*).

Pukša (more commonly spelled ^{HAL}*pu-uk-šá*, *Buxša-, Tavernier 2007a, p. 151-52 [4.2.373]) is the name of at least three different individuals in the PFA. Six texts seem to pertain to the Pukša mentioned here. (1) Fort. 2043-101 names Pukša (l. 06'') at the end of an interim summary of fruit in a fragmentary account connected with Persepolis (l. 09') that also mentions Maraza as overseer (*šarama*, ll. 10', 27'), Gidadda (l. 27'') and perhaps Haturrada (l. 20''), both at the ends of interim summaries, that is, three individuals who co-occur with Pukša in Fort. 0119-101. (2) In Fort. 1899-101 Haturrada (l. 14), Gidadda (l. 35) and Pukša (l. 60) are named in interim summaries of fruit at two plantations at Matezziš and perhaps at other places around Persepolis. (3) PF 2018, a multiple-entry "deposit" (C1/W) puts Pukša at Matezziš (l. 17) and (4) Fort. 0169-101, a single-entry "deposit" of fruit (C1), puts him at Ankarakkan, near Persepolis (as shown by PF 1966). (5) Pukša also delivers *zali*, "cress," at Ankarakkan in PF 0649. (6) In Fort. 1362-101, a damaged multiple-entry "deposit" of fruit, Pukša (l. 44) and probably Gidadda (l. 10) are named at the ends of lists of fruit.

(64) *-ik'-ka₄* over erasure.

^{AŠ}*mi*[?]-*iš*-^ʿ*ba-iš*^ʿ-*šá-ti-iš* (AŠ, if read correctly, is written over erasure) is a contracted variant of ^{AŠ}*mi-iš-ba-ši-ia-ti-iš* “all prosperity” (**vispašyātiš*; Tavernier 2007a, p. 401 [4.3.256]). It appears in Fort. 1899-101:36 (spelled ^{AŠ}*mi-iš-ba-šá-ti-iš*) as the name of a plantation at Matezziš, near Persepolis, associated with Gidadda, who also occurs in Fort. 0119-101 (above, l. 23). In two texts from the Persepolis Treasury Archive from reign of Xerxes, the name identifies a workplace of bitumen-workers, plantation-caretakers (*kurtaš kupirriš*, *partetaš-nuškip*, PT 49) and of house-servants preparing food (*puhu batimanuš kurriškarraš*, PT 59; see Tavernier 2007a, pp. 429 [4.4.7.86], 437 [4.4.7.133], 535 [5.5.2.3], Potts and Henkelman, elsewhere in this volume). All toponyms in the Treasury Archive appear to belong to the administrative subdivision known as the “Persepolis region” (Henkelman 2017a, pp. 99-100; n.d.2]), supporting the idea that Mišbašiyatiš was located in the close vicinity of Persepolis (cf. Tuplin 1996, p. 181).

(68) *-iš-še* on right edge, *-še* over erasure.

(68f.) Possible restorations of the damaged PN include ^{HAL}*mi-iš-še-[na]* (but more signs are expected in the gap) and ^{HAL}*mi-iš-še-[iz-za]*, but no-one of either name appears in known contexts that suggest connections with Fort. 0119-101:68f.

(69) ^{AŠ}! : tablet ^{HAL}.

(69) ^{AŠ}! *ha-^ʿri-ia[?]-ri[?]-iz-za-iš-ma*: the GN, if read correctly, is not attested elsewhere.

(76) Ma(n)dumatiš (^{AŠ}*man-du-man-ti-iš*, ^o*ma-ti-iš*, ^o*ma-ut-ti-iš*, ^{AŠ}*ma-du-ma-ti-iš*, **Vantavatīš*, Tavernier 2007a, p. 400 [4.3.238]), and Mandumattizza (^{AŠ}*man-du-ma-ut-ti-iz-za*, **Vantavatīca*, *ibid.* [4.3.237]): collocation with seal PFS 0001* and the name of Šundayauda in PF 0905 implies that Mandumatiš was situated in the “Persepolis region” administrative subdivision (Hallock 1985, p. 598 fn. 1; for further connections see Koch 1990, pp. 109, 118, 277; Tuplin 1996, p. 181; Henkelman 2003, pp. 104-105; Arfaee 2008, pp. 16, 30; Henkelman and Stolper 2009, p. 308 with fn. 121). The wine supplier mentioned in PF 0905, Maraza, also collocated with Mandumatiš in PF 2080 (fruit) and Fort. 2175-101 (fruit[?]), may be the same person as the Maraza at the end of Fort. 0119-101 (see l. 86 below). The tabular account Fort. 0232-101 lists revenue in *pit*, figs[?], *dakuš*, mulberries and apples in a number of sections pertaining to Mandumatiš and Ukbarakkan. The multiple-entry “deposit” Fort. 1951-101 includes a list of fruit at Mandumatiš (l. 24), and three journal entries (Fort. 2175-101:03-05, 06-08, 29-31) speak of fruit allocations for workers there. In PF-NN 1157 “treasury workers” (^{AŠ}*ka₄-ap-^ʿnu-iš^ʿ-ki-ip*) at Mandumatiš[?] are mentioned, plausibly implying the presence of a “treasury” (craft centre, see Potts and Henkelman, elsewhere in this volume; but note that the reading of the place name is uncertain).

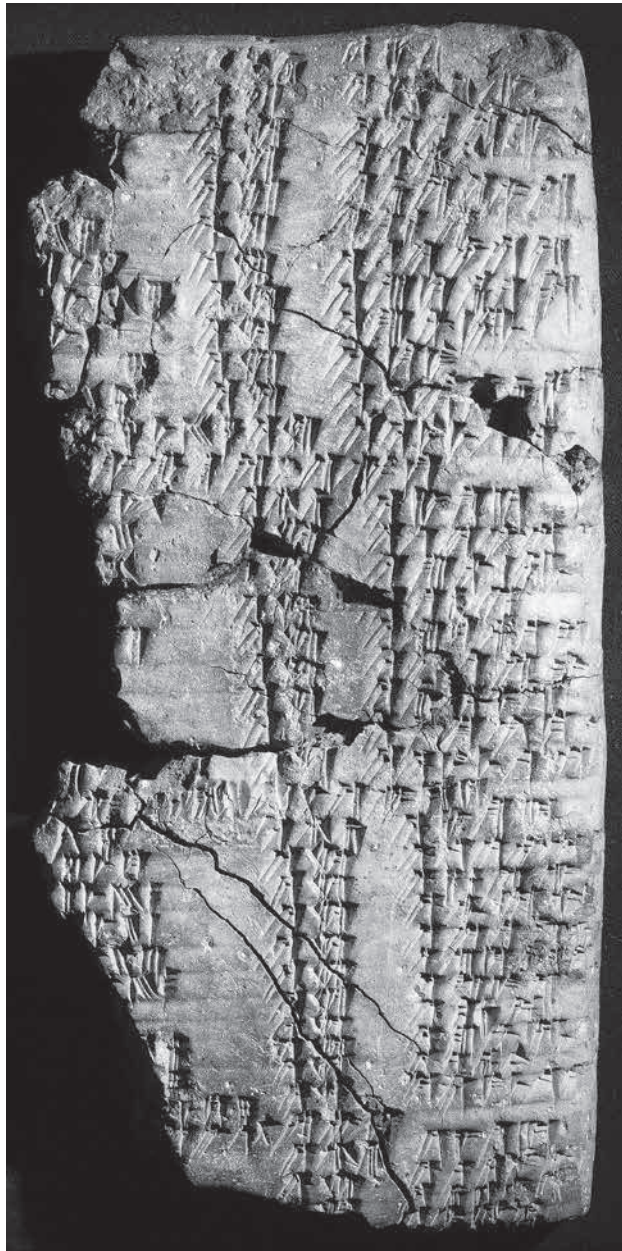
(81) *-gi-ma* on right edge.

A reading ^{HAL}*su-za-ba-^ʿnu-iš^ʿ nu-iš-gi-ma*, with haplography is not excluded, but neither Suzaba nor Suzabanuš is otherwise attested.

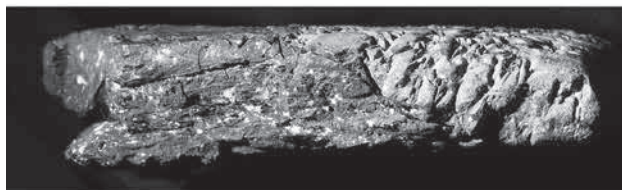
(82) ^{HAL}*ma³-ak²-ka₄'-ri-iz-za*, if read correctly, occurs only here. *nu-iš-gi-ma* on right edge and obverse.

(84) ^{GIŠ}*hu-ir* preceded by erasure.

(85, 86) The name Maraza (^{HAL}*ma-ra-za*, rarely ^{HAL}*mar-ra-za*, **Varāza*-; dialectal variant ^{HAL}*ma-ra-da*, **Varāda*-, Tavernier 2007a, p. 338 [4.2.1800, 1802]) is ubiquitous in the PFA, referring to several individuals (Koch 1990, index q.v.; Arfae 2008, p. 16). One, entitled *ukbahamitiya* (PF 1979) or *ukbahamišiya* (PF 1980), reflecting dialectal variants of a title tentatively interpreted as “vice-fruit manager” (Tavernier 2007a, p. 510 [5.3.4.58-59]), appears to be based at (H)ištiyanuš; from this same place he sends 240 l. apples to nearby Kutima (PF 1990:17-18, ^{AŠ}*hi-iš-ti-nu-iš*). The name Maraza is frequent in the formula PN *šaramanna*, denoting logistic oversight, but rarely in connection with fruit. An exception is the Maraza, perhaps the same as the vice-fruit manager, who oversees individuals labelled as “fruit-worker” or “fruit-processor” (*miktam-huttira*, *mikdakurra*) at Matannan (PF 1945:04-05) and Persepolis³ (Fort. 2050-101:33-35; Fort. 2175-101:63-64³, 65-66³). A Maraza appears at the end of a fragmentary tabular account of fruit at Rakkan and Yamadanuš, the latter known to be the locus of or the name of a plantation (Fort. 0442-101; cf. Fort. 1866-102). Most pertinent is a fragmentary tabular account (Fort. 2043-101) in which a Maraza twice occurs in interim summaries as an official overseeing fruit at Persepolis (Il. 09'-10', 26'-27'³). The same text mentions totals of various fruits connected with Pukša (l. 6''), Gidadda (^{HAL}*gi-da-'ad³'-da*, l. 27''), and, perhaps, Haturrada (^{HAL}*ha-da-ra-da*, l. 20'), i.e., names known from Fort. 0119-101. Since overseers sometimes stepped into the role of supplier, PF 2080 is probably also relevant. This fruit account centers on Tikrakkaš in the Persepolis region (above, on PFa 33:30) and names Maraza as supplier (l. 22). The Maraza appearing in Fort. 0119-101 overseeing fruit trees at several places can be confidently equated with the Maraza at Persepolis (Fort. 2043-101) and Tikrakkaš (PF 2080), and therefore the Maraza overseeing the processing of fruit at Persepolis³ and Matannan (PF 1945:04-05, Fort. 2050-101:33-25; Fort. 2175-101:63-64³, 65-66³) may also be the same person. Less certain is his identification with the Maraza in the Rakkan area (Fort. 0442-101) or with the “vice-fruit manager” at (H)ištiyanuš. With this geographical range, other texts come into play, such as wine account Fort. 2177-103, which mentions a Maraza at Tikrakkaš or Fort. 2181-102 (L1), in which a Maraza supplies wine for workers at Rakkan (cf. Fort. 0442-101). Since fruit and wine are often administratively connected in the PFA, identification would in principle be admissible.

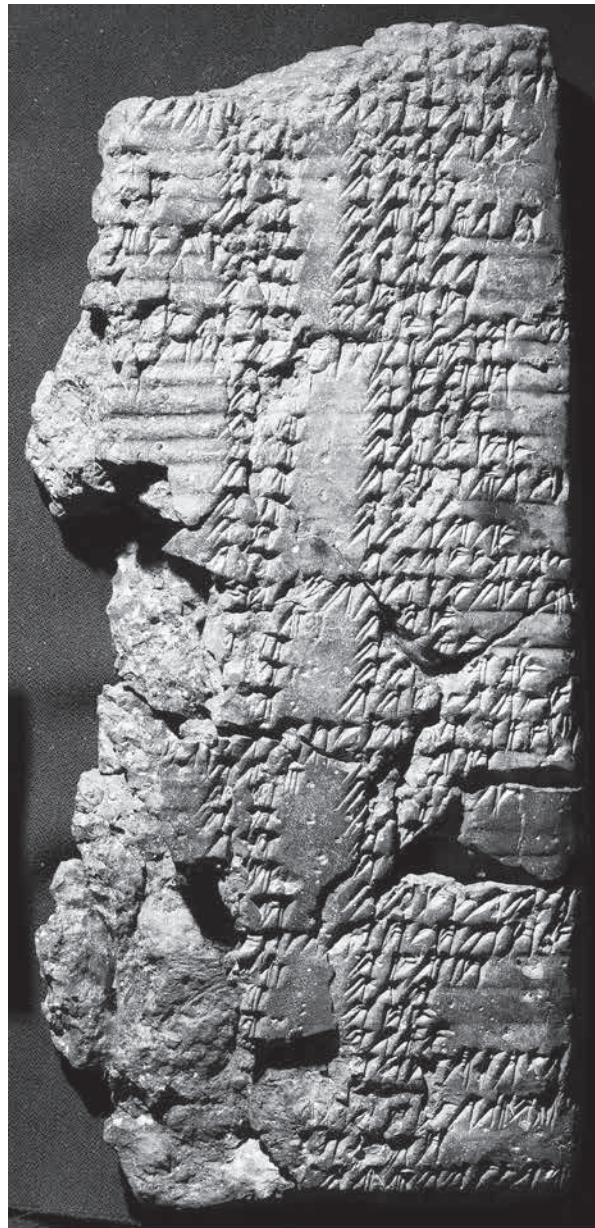


Fort. 0119-101 Obverse 



Lower Edge

Fig. 2a. Fort. 0119-101 Obverse and Lower Edge



Fort. 0119-101 Reverse



Right Edge



Upper Edge

Fig. 2b. Fort. 0119-101 Reverse, Right Edge, Upper Edge.

Abbreviations

DN	divine name.
Fort. #####-###	Elamite Persepolis Fortification tablet recorded by the Persepolis Fortification Archive Project; the first four digits indicate the box from which the tablet came and the last three digits are a sequential identification number.
GN	geographical name.
PF #####	Elamite Persepolis Fortification text published in Hallock 1969.
PFa ##	Elamite Persepolis Fortification text published in Hallock 1978.
PFA	Persepolis Fortification Archive.
PF-NN #####	Elamite Persepolis Fortification text cited from draft edition by Richard T. Hallock, collated, corrected and prepared for publication by Wouter F.M. Henkelman.
PFS #####	Persepolis Fortification Seal, cited according to Garrison and Root 1998, with updates by Mark B. Garrison.
PN	personal name.
PT ##	Elamite Persepolis Treasury text published in Cameron 1948.

Images of Persepolis Fortification tablets presented here are products of the Persepolis Fortification Archive Project at the Oriental Institute of the University of Chicago.

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