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The Year: "Nissen returns joyous from a distant island"

Robert K. Englund
University of California, Los Angeles

In 1988, Hans Nissen carried a Babylonian tablet from London to Berlin; the short edition of that text offered here is dedicated to him, whose support, advice, and friendship during 14 years of work at the Free University I should have valued, more.

Introduction

§1. At the urging of the collaborators of the research project "Archaic Texts from Uruk", the Berlin Senate purchased in 1988 a large portion of the former Erlenmeyer collection, consisting primarily of the then largest privately held group of proto-cuneiform tablets,[1] but also including a number of attractive Ur III tablets. Six documents of that group of texts have been dealt with in two earlier publications.[2] The text treated here was sold during the 1988 Christie's of London auction as lot no. 92 at a price of £ 14,000 (see figure 1).[3] This large Umma account of guruš workmen belongs to a select published group of at most two dozen large texts from the Ur III period, with a particular affinity to *MVN* 15, 94, *MVN* 21, 199, and *TCL* 5, 5674.

General observations

§2. The text Erlenmeyer 152 dates from the second regnal year of Šu-Sin (ca. 2036 B.C. following the now less reliable middle chronology). It contains a year account of a 33-man workforce under a foreman named Lu-Šara. As with any planned economy, the production numbers posted in this account represent a mix of the artificial production norms that were attached to the workmen assigned the foreman by the agents of the household for which he worked, and the real production of the same workmen as confirmed in a large number of receipts. In both cases, the production was converted into "worker days" (guruš u_4 1-$še_3$) by multiplying the number of workmen by the number of days they either worked, or were expected to work to complete a set task. The document has the characteristic structure (figure 2) of yearly accounts of the Ur III period, consisting of sections conveniently designated

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1 H. Nissen offers in H. J. Nissen, P. Damerow and R. K. Englund, *Frühe Schrift und Techniken der Wirtschaftsverwaltung im alten Vordern Orient* (2nd edition, Bad Salzdetfurth 1991) 11-12, a short sketch of the history of the December 1988 auction in London.

2 Erlenmeyer no. 155 in R. Englund, "Hard Work: Where Will it Get You?," *JNES* 50 (1991) 255-280; nos. 93, 94, 112, 118 and 158 in id., "Ur III Sundries," *ASJ* 14 (1992) 77-102.

3 The tablet measures 161×166×36mm. It was a part of a Charlottenburg Palace exhibit organized by H. and M. Nissen, P. Damerow and myself in 1990, and appeared in the catalogue *Frühe Schrift* in chap. 11, figures 92-93, 11a. The entire Erlenmeyer holdings of the Land of Berlin were put on permanent loan to the Vorderasiatisches Museum, Berlin, on 1 July 1999. We have been unable to ascertain whether the tablet was fired in antiquity, or in the course of its conservation by the Erlenmeyers. The text is well preserved; however, a previous owner repaired a damaged lower left corner, and in so doing filled several small gaps with clay and, apparently following optical criteria, impressed a number of cuneiform-similar, but meaningless signs on the fresh surface. These fabrications are noted in the transliteration and translation. Thanks are due to Director B. Salje and Curator J. Marzahn of the VAM for their continued support in keeping the entire Erlenmeyer collection accessible for further inspection and imaging by CDLI staff.

Figure 1: Hans Nissen and Peter Damerow arrive in Berlin with the Christie's tablets of the Erlenmeyer Collection (above); the exhibition *Frühe Schrift* in the Charlottenburg Palace, Berlin, in the summer of 1990 (below; photos courtesy of Margret Nissen).

"debits", "credits", and "balance".

§3. We may imagine the composition of this account in the following way. At the end of Šu-Sin 2 or the beginning of Šu-Sin 3, a bookkeeper from the accounting bureau within the temple household of Šara gathers in his office

a) the full account of Lu-Šara from the previous year (year one of the reign of Šu-Sin);
b) the accounting record of the number and categories of workmen assigned to the foreman for the now completed year;
c) records of any further laborers assigned for some period to the work crew of the foreman;
d) and all records of the work done by this crew over the twelve months of the completed year.

The accountant must proceed to order these perhaps dozens of tablets, presumably in the same sequence as that found in the account Erlenmeyer 152, with those primary records and the previous account of a-c) strictly distinguished from those primary records of d), for the most part sealed receipts probably gathered by the foreman in the course of the year, that represent the real and documented production of his workmen.

§4. With the access to larger numbers of Ur III documents made possible by the continuing publication of administrative text collections and by the networked distribution of the text content within these publications, specialists have been able to identify more and more of the primary documents on which Babylonian scribes based their mid- and long-term accounts.[4] In the present case, twelve such primary texts have been located in collections that range from Istanbul to Barcelona, from New Haven to Ft. Myers, representing the most substantial coverage of a large Umma account heretofore achieved.[5] And yet if it were not for the fortuitous appearance of a receipt from a private collection in Florida (the text *Hand* 1, see below), this study would contain nothing entirely new. For this one text is to my knowledge the first known example of a receipt that documents the movement of real goods or services within the "debits" section of an Umma account.

§5. All these records in hand, our scribe must have performed some preliminary calculations to judge the size of tablet he would need for this account, and he then proceeded to enter all the information before him, following a strict bookkeeping template that dictated the means by which data was standardized and "compressed" to form a meaningful yearly record. We expect to soon have the tools to fairly reconstruct the involved instruction that complex Ur III accounting presupposes. Certainly the concrete texts themselves are our primary sources for this reconstruction, but the growing numbers of exercise accounts, and of account duplicates, triplicates and so on, can be brought to bear on the question of how large running accounts were kept. The most involved examples of such documents from the Ur III period seem to derive not from Umma, but rather from the agricultural bureaus of Girsu, of which numerous examples have been offered in the work of K. Maekawa.[6]

§6. Once entered in running accounts, the primary documents were, as is clear from the archaeological and textual record, stored in baskets from which stringed identifying bullae were hung. These bullae, so-called pisan-dub-ba, or "tablet-basket" texts, were of a standardized format that described in concise fashion the

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4 The catalogue of the Cuneiform Digital Library Initiative counts currently over 60,000 tablets, of which ca. 49,000 are published. When Struve proclaimed in the 1948 that he had at his "disposal the primary documentation which served as immediate sources in the compilation of the two reports of Lugalgude ..." (I. Diakonoff, ed., *Ancient Mesopotamia,* 156), he had access to ca. 12,000 published Ur III texts. In 1960, that total had climbed to 14,000, in 1980 to 23,000 and in 2000 to 41,000. Specialists, and through the internet increasingly non-specialists can today search electronic files of nearly twice as many texts, with text annotations and standardized transliterations that allow targeted searches across the full data set. It is therefore not surprising that we are seeing greater numbers of fits between secondary accounts and the primary records from which they were written, including in the present case a primary coverage of more than half of the entries within the credit section of the account.

5 M. van de Mieroop, "An Accountant's Nightmare: the Drafting of a Year's Summary," *AfO* 46-47 (1999-2000) 111-129, has diagrammed the unparalleled case of *UET* 3, 1498. Such an account is not likely to ever be rivaled in the number of primary document hits it contains, yet the highly monotonous accounting structure of the Ibbi-Sin text from Ur makes it of limited interest beyond the confirmation it gives us of the concrete way that Ur III accounts were compiled. Somewhat more complex in their bookkeeping structure are the accounts from Drehem; M. Hilgert in *OIP* 121 (forthcoming), pp. 57-60, presents the compelling case of a text (no. 248) linked to 41 receipts, documenting just over a third of the total of the animals mentioned in the account.

6 See, for instance, his treatment of *OBTR* 254 and corresponding BM fragments in *ASJ* 10 (1988) 37-94, esp.

nature of the tablets thus archived:[7]

§7. *TRU* 1[8]

obv.

1) pisan dub-ba
2) gu_4 udu ba-$uš_2$
3) zi-ga
4) sipa unu_3-e-ne
5) kišib *na-ra-am-i_3-li$_3$*
6) mu a-ra_2 2-kam-aš si-mu-ru-um^{ki} ba-ḫul-ta

rev.

1) mu us_2-sa bad_3 ma-da ba-du_3-$še_3$
2) mu 13-[kam]

Tablet-basket:
large and small cattle, slaughtered,
booked (out of the accounts of)
the shepherds and cowherds;
sealed (tablets of) Naram-ilī.
From the year: "Simurrum was destroyed for the second time" (=Šulgi 26),

to the year following: "The wall of the land was erected" (=Šulgi 38),
[it is (a period) of] 13 years.

Account structure (see figure 2)

§8. The first section of the account, the debits (obv. i 1 to iii 4, described by the Sumerian term sag-nig_2-gur_{11}-ak-am, "it is the head of the goods"), consists of three subsections. In the first place, the scribe posted a record of arrears accruing to the foreman Lu-Šara from his previous running account. The notation obv. i 1 corresponding to 456 $^1/_6$ workdays is not substantial relative to deficits posted in the accounts of comparably sized troops of workmen, and it will in the course of this account balloon to a total of over 1700 workdays recorded in rev. v 3. It is difficult to overstate the seriousness of these deficit workdays for the foremen involved, since a capricious central administration at the level of the province governors, or the crown in Ur, views them as effective loan debts that can be called in at will. In practice, their threatening nature is most obvious when the involved foremen go missing, either as a result of flight from service, or of death. In such cases, the households of the individuals are claimed by the state, including, dependent on the level of arrears, property, moveable goods, chattel slaves and family members.[9]

§9. The second subsection of the account debits lists the workmen in the charge of Lu-Šara, in this case individually named, but in like accounts often simply recorded as a number. Such long-standing "crew workers" are qualified in Sumerian as $giri_3$-se_3-ga, literally "laid to the foot". Twenty-four of these workers were qualified with the Sumerian designation "dumu-gi_7" and the numerical notation meaning "one half", that is, they were qualified as workers from whom only one half of a norm production was anticipated.[10] The remaining workmen were qualified as "porters" (ug_3-ga_6, often abbreviated to ug_3, in the literature usually transliterated un-il_2) from whom the foreman expected full production. One of the porters was included in the workforce for just 4 of the twelve-month period of this account. Since the debits sections of Ur III labor accounts list ideal and therefore artificial work performance of a planned household, the calculations of the workdays assigned to foremen is straightforward, in this case (obv. ii 23-24):

24 dumugi × $^1/_2$ × 12 months ×
30 days (per month[11]) = 4320 workdays

53-55. The Sumerian phrase ugu_2 PN ba-a-gar indicates the booking into an account debit of goods or services transferred from the credits sections of other accounts.

7 The number of tablets within a tagged basket were never recorded, probably because accounting in the Ur III period was fluid, with old or incorrect tablets removed, and missing tablets added to the group. Unfortunately, early regular excavations of Ur III settlements were conducted with a level of attention paid to find locus that makes it fairly impossible to reconstruct the position of groups of tablets within the presumed archive rooms of central households. Obviously, *irregular* excavations have eliminated all hope of such archaeologically justified reconstructions.

8 M. Fitzgerald has remarked upon the technique of tagging such baskets in *CDLB* 2003:2.

9 See *JNES* 50, 267-268 + n. 15.

10 Based on the attestations of these qualifications in administrative texts, it is simply not possible to judge the social status of these workers (since F. Kraus, *Sumerer und Akkader*, 58, and C. Wilcke, *Le palais,* 230, most have considered this is a privileged class of "native" workers ["freie Bürger", etc.] distinguished from foreign slaves). While one might imagine that the complex system of work-norm categories mirrored in some way methods of compensation for dependent laborers of varying levels, for instance requiring of some dependents less real labor than of others, still it is important to remember that they did remain charges of central households assigned the most difficult of unskilled labor tasks.

11 R. Englund, "Administrative Timekeeping in Ancient Mesopotamia," *JESHO* 31 (1988) 121-185.

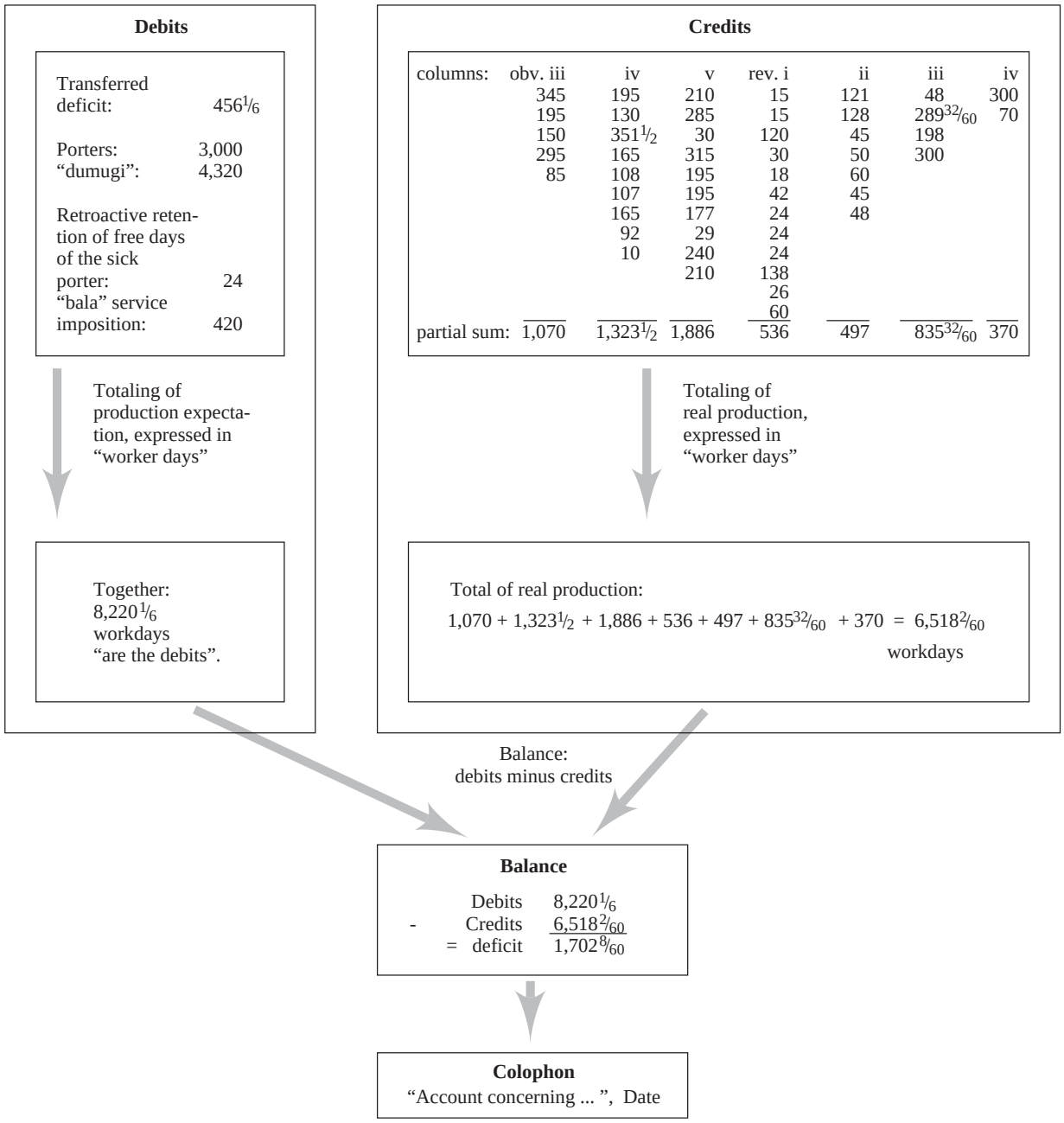


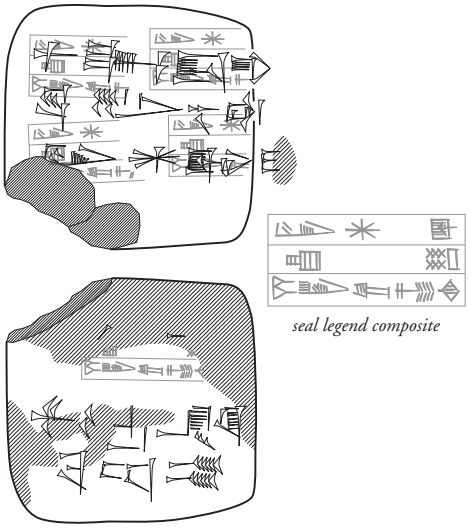
Figure 2: The structure and accounting flow of the document Erlenmeyer 152

8 1/3 ugga[12] × 12 × 30 = 3000 workdays

§10. The three workmen listed in obv. ii 10-14 of this subsection were received by the foreman Lu-Šara from two named individuals. The first of these two entries was copied from a primary text now in the private collection of C. Hand in Ft. Myers, Florida (see figure 3).[13] Although the name of the foreman Lu-dingira, from whose crew the dumugi workman was transferred to Lu-Šara, is not preserved, there can be little doubt that this text was the source for the Erlenmeyer entry. The name and work-norm qualification of the laborer is the same; it is dated to the precise moment (begin-

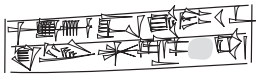
[12] The fraction 1/3 represents the porter assigned to the crew for just four of the twelve months.

[13] Mr. Hand first contacted me by email in August 1999 with information about this text, that he reported to have been in his family more than sixty years (and thus



seal legend composite

Hand 1 = *CDLJ* 2003/1 no. 2



CDLJ 2003/1 no. 1 obv. ii 10-11

Hand 1 (private collection)	*translation:*
obv.	*obv.*
$^1/_2$ un-da-ga	*$^1/_2$ (work norm): Undaga*
iti ŠE.KIN-ku$_5$-ta	*from the month "Harvest" (on)*
lu$_2$-^{d}šara$_2$ i$_3$-^{r}dab$_5$^{1}	*Lu-Šara seized (administratively).*
[ ]	[ ]
rev.	*rev.*
[ugula] ^{r}lu$_2$^{1}-[dingir]-^{r}ra^{1}(?)	[*foreman:*] ^{r}*Lu-dingira* ^{1}*(?)*
mu ^{r}ma$_2$ ^{d1}en-ki ba-ab-du$_8$	*Year: "The boat of Enki was caulked".*
Seal legend	*Seal legend*
lu$_2$-^{d}šara$_2$	*Lu-Šara,*
dub-sar	*scribe,*
dumu lugal-inim-gi-na	*son of Lugal-inim-gina*
Erlenmeyer 152 obv. ii 10-11:	
$^1/_2$ un-da-ga dumu u-bar	*$^1/_2$ (work norm): Undaga, son of Ubar,*
ki lu$_2$-dingir-ra ugula-ta	*from Lu-dingira, the foreman.*

Figure 3: A comparison of a section from Erlenmeyer 152 with its corresponding source text *Hand 1* (75% of original)

ning of the first month of Šu-Sin 2) of the beginning of this man's work under Lu-Šara; the laborer was booked as having been received from another ugula, consistent with the format and seal of Lu-Šara on Hand 1. Indeed, this latter consistency in format and sealing was a central search criteria in identifying all other primary documents used by the scribe of Erlenmeyer 152, but, as sources for the *credits* section of the account, flipped to name another official as receiving and therefore also sealing agent, and Lu-Šara as agent of delivery (usually noted as "Foreman: Lu-Šara", so that *Hand 1* rev. 1 might be reconstructed with [ugula] ^{r}lu$_2$^{1}-[dingir]-^{r}ra^{1}).

§11. The third subsection of debits contains two numerical entries. The second of these, 420 workdays described as "the production of 'dumugi apprentices' in bala service," seems to represent a sort of tax assessed against the foreman, since no compensatory allowance of laborers is evident in the text.[14] The first entry of 24 workdays is qualified as a$_2$ u$_4$ du$_8$-a ug$_3$-ga$_6$ sag-ba zi-ga, "the production of free days of the porter already booked out of the debits[15]". 24 days correspond to $^1/_{10}$ of the work period of 8 months recorded in the debits section of the account as sick-leave time of the porter Ea-lubi (obv. i 21 and obv. v 27-31). The period in which this worker was missing due to illness, that is, the final eight months of the fiscal year covered by this account, were qualified as work performance and this labor time was "received" by the official Ur-E'e. This accounting procedure presumes a certain social quality within the organization of the household that ultimately acted as slave master to such laborers, for their rations were distributed entirely independent of their specific production. Nonetheless the Ur III social state remained punctilious; those 24 days which had, for accounting technical purposes, been deducted from the debits in rev. iv 2-3, were here retrieved for the state, in exact parallel to other cases in Ur III accounts of the

possibly one of the "Banks" tablets; see my contribution to the Pettinato Festschrift, forthcoming).

14 The only other mention of the bala service in this account occurs immediately before the summation in rev. iv 4-6. Cp. *MVN* 21, 199, with rev. v 3-6: 10 guruš ug$_3$-ga$_6$ 6 guruš dumu-gi$_7$ a$_2$ šeš-tab-ba bala-a gub-ba ib$_2$-ta-zi / u$_4$-35-še$_3$ / bala-a gub-ba bala-še$_3$ gen-na u$_3$ bala-ta gur-ra / a$_2$-bi u$_4$ 9.20 (and thus with 35 days the same period of service as noted rev. iv 3).

15 sag = sag-nig$_2$-gur$_{11}$-ra-kam.

retrieval of free time accorded, again for technical reasons, sick or dead workers.[16]

§12. We thus have the following entries subsumed in the debits total obv. iii 2:

obv. i 1 (si-i_3-tum)	7.36 $^1/_6$ (10 gín)
obv. ii 23 (ug_3-ga_6)	50.00
obv. ii 24 (dumu-gi_7)	1.12.00
obv. ii 25 (u_4-du_8-a)	24
obv. ii 27 (bala-a gub-ba)	7.00
	2.17.00 $^1/_6$

§13. The following "credits" section of the account (obv. iii 5 to rev. v 2, Sumerian $ša_3$-bi-ta—zi-ga-am_3, "therefrom (viz., from the debits) deducted") demonstrates that the crew under Lu-Šara performed above all agricultural jobs, including, however, the transportation of products and the maintenance of the irrigation system.[17] We must again imagine that the Sumerian bookkeeper drawing up this account had before him all sealed receipts gathered in the course of the year by the foreman Lu-Šara, and that these primary documents were ordered roughly according to the type of work they confirmed. Thus the first documents entered in the account dealt with what was likely the primary assignment of this work crew, namely, the field tasks of harvesting grain and maintaining the system of canals upon which Babylonian agriculture depended, including the labor-intensive dredging of established, and the excavation of new canals. A second set of tasks consisted of the assistance of his crews in the transportation of various commodities by barge along the canals of lower Mesopotamia: reeds, leather bags, processed and unprocessed cereals, fish, dairy products and even oxen.[18]

§14. A wide variety of officials from within the household economy of the province of Umma act as receiving agents of the labor performed by the workmen of Lu-Šara. Upon the completion of tasks assigned the work crews, a sealed tablet confirming the work was issued, of which twelve have been located in the published record of Ur III texts (those reference texts below in parentheses are merely close parallels to the account passage cited; see figure 4):

obv. iii 6-16	*SACT* 2, 31
obv. iv 6-v 1	*MVN* 18, 397
obv. v 2-5	*MVN* 16, 1359
obv. v 6-9	NBC 2689
obv. v 10-12	(*UTI* 3, 1966)
obv. v 13-17	*MVN* 16, 1567
obv. v 21-23	*UTI* 3, 1630*
obv. v 24-26	*UTI* 3, 1692, (*MVN* 16, 1390)
obv. v 32-35	(*UTI* 4, 2862, *UTI* 5, 3147, *MVN* 14, 310)
rev. i 1-3	*MVN* 16, 865
rev. i 7-16	*MVN* 15, 20 [ll. 9-11], *UTI* 4, 2608 [ll. 12-15]**
rev. ii 3-5	*Princeton* 1, 380?[19]
rev. ii 6-8, 17, iii 11	*MVN* 16, 1071, (*UTI* 5, 3521)
rev. iii 8-11	*UTI* 4, 2919

*=one of two sealed tablets **=two of three sealed tablets

§15. These primary documents follow a strictly standardized format: so-and-so many work days; description of the task completed; foreman of the crew involved; notice of the seal of the receiving agent (kišib PN); the physical impression of the cylinder seal; date formula.[20]

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16 R. Englund, *JESHO* 31 (1988) 172-173 n. 46 and *JNES* 50 (1991) 277 n. 34. To Ea-lubi (variant -lu_2-bi) as agricultural hand, cp. for instance *Princeton* 1, 440, *SANTAG* 6, 380 (?; both texts date to the reign of Amar-Suen and describe this person as ugula, "foreman"), *MVN* 2, 178, *UTI* 5, 3271, etc.

17 Compare the translation below, and the more detailed treatment of the production entries of this text in N. Vanderroost's dissertation on the administrative organization of Umma agriculture, forthcoming.

18 The location of many of the toponyms in this text, above all those describing field names and irrigation installations, is unknown. In an article treating the likely course of the ancient Tigris, P. Steinkeller, "New Light on the Hydrology and Topography of Southern Babylonia in the Third Millennium," *ZA* 91 (2001) 22-84, presents a comprehensive review of waterways and their settlements in the province of Umma based on these sorts of texts that record water transportation between two settlements, qualifying the trip according to the number of days required and the direction the barges took (upstream or downstream, assuming a general waterflow in southern Mesopotamia of northwest to southeast).

19 Although this receipt is otherwise a perfect fit for this passage of Erlenmeyer 152 (received from Lu-Šara by Lu-Ḫaya [Erl. 152 rev. iii 11] via Lu-Suen the fattener), its numerical notation is 3 guruš u_4-6-$še_3$ and thus well off the 128 workdays recorded in our text. It is therefore likely that the scribe of Erl. 152 had one or more additional receipts from Lu-Ḫaya that had moved through the office of Lu-Suen, multiple receipts that he had forgotten, or for some reason chosen not to register in rev. iii 11 (altogether at least nine receipts).

20 As a rule, the date will consist of only the year name; there is an occasional inclusion of the month during

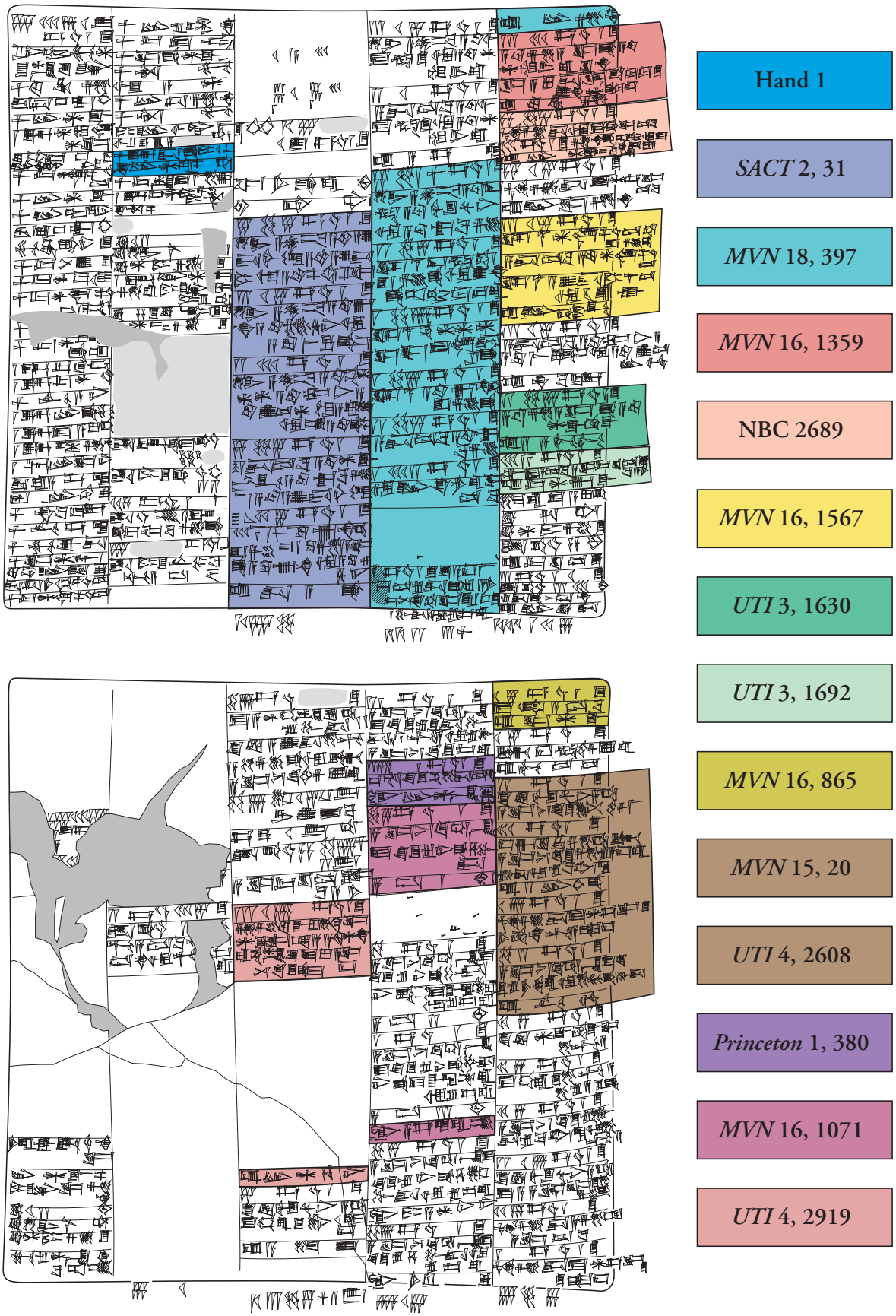

Figure 4: All found primary documents of the account Erlenmeyer 152

MVN 16, 1567	Erl. 152 obv. v 13-17[21]:
obv.	
1) 3.15 guruš u_4 1-$še_3$	3.15 guruš u_4 1-$še_3$
2) kab_2-ku_5 ^{d}šul-pa-e_3-ta sahar zi-ga	kab_2-ku_5 ^{d}šul-pa-e_3-ta sahar zi-ga
3) a-da gub-ba a-$ša_3$ ^{d}šul-pa-e_3	a-da gub-ba a-$ša_3$ ^{d}šul-pa-e_3
4) kab_2-ku_5 a-u_2-da-tur ku_5-ra_2	kab_2-ku_5 a-u_2-da-tur ku_5-ra_2
rev.	
1) u_3 $šu_2$-luḫ-ak	u_3 $šu_2$-luḫ-ak
2) *ugula* lu_2-^{d}*šara*$_2$	
3) kišib lugal-ḫe$_2$-gal_2 (seal)	kišib lugal-ḫe$_2$-gal_2
4) mu ma_2 ^{d}en-ki ba-ab-du_8	
Seal legend	
1) lugal-ḫe$_2$-gal_2	
2) dub-sar	
3) dumu ur-nigar$_x$(NIGIN$_3$)^{gar}	

Both of the pieces of information corresponding to *MVN* 16, 1567, rev. 2 and 4, are supplied in the colophon of the account Erlenmeyer 152: the year formula, and the general qualification rev. v 5-6: nig_2-ka_9-ak a_2 $erin_2$-na-ka / lu_2-^{d}šara$_2$ ugula dumu lugal-inim-gi-na, "account of the production of the erin workers. Lu-Šara is the foreman, son of Lugal-inim-gina".

§16. The very common practice in neo-Sumerian account-writing of combining the associated information of two or more receipts into one entry is evident also in our text with its two explicit and several implied references to multiple sealed tablets (kišib 2+ PN), and the nature of this combination made clear in the two passages obv. v 21-23 and rev. i 9-11. In the former case, we have the correspondence (one of two sealed tablets):

UTI 3, 1630	Erl. 152 obv. v 21-23
obv.	
1) 2.15 guruš u_4 1-$še_3$	2.57 guruš u_4 1-$še_3$
2) a-$ša_3$-ge a du_{11}-ga	a-$ša_3$-ge a du_{11}-ga
3) a-$ša_3$ ^{d}šara$_2$-gu_2-gal	a-$ša_3$ ^{d}šara$_2$-gu_2-gal
4) *ugula* lu_2-^{d}*šara*$_2$	
rev.	
5) kišib a-gu-gu[22]	kišib 2 a-gu-gu
(seal)	
6) mu ma_2 ^{d}en-ki ba-ab-du_8	
Seal legend	
1) ur-e_2-maḫ	
2) dub-sar	
3) dumu da-da	

It is safe to assume that the second sealed tablet is a copy of this one, exchanging 42 for 2.15 in the first line.

§17. Similarly, in the latter case:

MVN 15, 20	Erlenmeyer 152 rev. i 9-11
obv.	
1) 15 guruš u_4 2-$še_3$	30 guruš u_4 1-$še_3$
2) ga_2-nun du_6-ku_3-ge-ta	ga_2-nun du_6-ku_3-ge-ta
3) $guru_7$ a-pi_4-sal_4^{ki}-$še_3$	$guru_7$ a-pi_4-sal_4^{ki}-$še_3$
4) gi ma_2-a gar ma_2 ba-al-la	gi ma_2-a ga_2-ra ma_2 gid_2-da u_3 ma_2 ba-al-la[23]
rev.	
5) *ugula* lu_2-^{d}*šara*$_2$	
6) kišib lu_2-du_{10}-ga (seal)	kišib 2 lu_2-du_{10}-ga
7) mu [ma_2 ^{d}]en-ki ba-ab-du_8	
Seal legend	
1) lu_2-du_{10}-ga	
2) dub-sar	
3) dumu ur-^{d}utu	

§18. The accountant responsible for Erlenmeyer 152 employed a standard method of calculation of the credits section of the text, consisting as it did of a large list of numerical notations (see the transliteration, and figure 2 above). Partial sums inscribed at the bottom of each column were evident tools to simplify the final summations, and to serve as a second control of the accuracy of entries. Despite the difficulties introduced into the calculation flow by the various modern "improvements" in

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which the work was done, for instance in the case of Erlenmeyer 152 the primary documents *MVN* 16, 865 (=rev. i 1-3; iti šu-numun), and *MVN* 16, 1071 (=rev. ii 6-8, 16, iii 11; iti ^{d}dumu-zi).

21 Translation: "195 workdays, from the water installation at the Šulpa'e (field) earth excavated, irrigation work in the Šulpa'e field, water installation of the Audatur (field) cut off (?) and cleaned. Sealed tablet of Lugal-ḫegal."

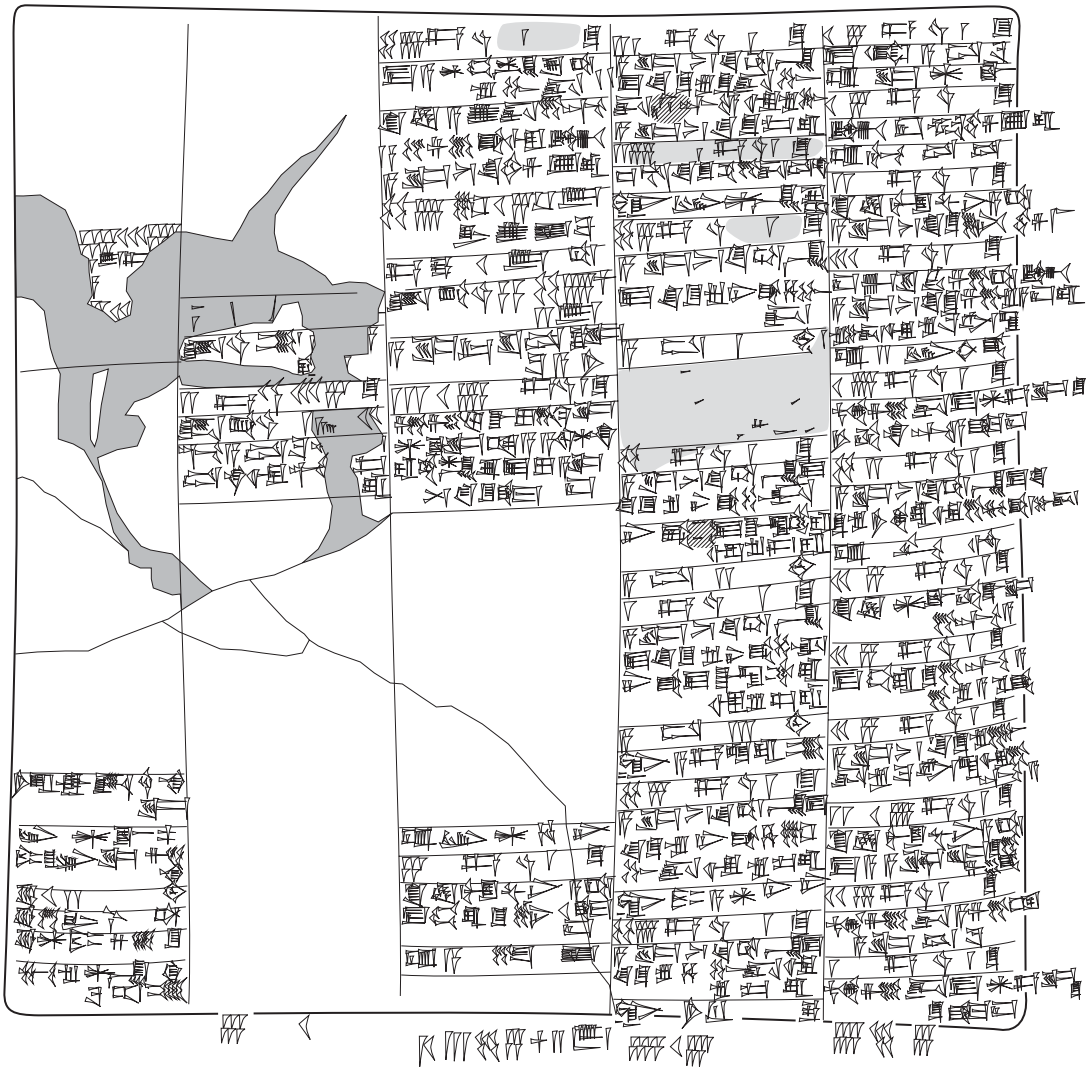
22 The administrative role of this person is unclear to me. Although an important Umma šabra official (explicitly in *Princeton* 2, 421 [M. Sigrist, forthcoming]), Agugu seems never to have used a personal seal, but rather seals of other officials, including that of Ur-emaḫ (*UTI* 3, 1630, and for instance *MCS* 3, 87 BM 105514, *MVN* 14, 351, and *UTI* 3, 2299) and of Ur-emah's brother Lugal-ezim (passim, but note the pisan-dub-ba text *SAT* 3, 2167, that records sealed tablets of Agugu and Lugal-ezim together in rev. 4).

23 Note the variant additional information in Erlenmeyer 152 that must result from either the existence of a fuller duplicate text of *MVN* 15, 20, or the lively memory of a young scribe. *MVN* 15, 20, records the reality of a group of 15 workmen occupied over two days, simplified in Erlenmeyer 152 to 30 guruš u_4-1-$še_3$, "30 workdays". The second of the two tablets mentioned contained a receipt corresponding to the preceding entry in Erlenmeyer 152: 2.00 guruš u_4-1-$še_3$ / ki-su_7 nin_{10}-nu-du_3-a-ta a-pi_4-sal_4^{ki} -$še_3$ in-u im-la_2.

Erlenmeyer 152 obverse

erasure
modern reconstruction
abraded surface
broken surface
broken edge
case/column divider
preserved edge

Figure 5a-b: Copy of the text Erlenmeyer 152 (75% of original size)



Erlenmeyer 152 reverse

the damaged surface of the tablet (see the notes below in the transliteration), it has been possible to reconstruct the entire account with little likelihood of error. This reconstruction demonstrates that the scribe calculated with untiring precision, and raises anew the question of the calculation tools he must have employed to achieve this result. We unfortunately cannot state with confidence what these tools were, whether for instance the scribes had a set of counting tables or abacuses, and whether preliminary tablets were first written and then copied onto a master text. It would seem unlikely given the high number of erasures evident in this text that it should have represented the final of two or more drafts. Moreover, the traces of numerical notations in obv. iii 1, giving the impression of an ancient "scratch pad", are suggestive of the use of ad hoc calculation aids, including these but doubtless other simple techniques.[24]

§19. The last section of Erlenmeyer 152 (rev. v 3-10) includes global qualifications of the account (i.e., that it involved the work crew of Lu-Šara and covered the twelve months of Šu-Sin 2) and the balance of the total of the debits section minus the total of the credits section. This balance is negative (debit greater than credit) and therefore qualified with the technical term la_2-ia_3, "deficit" (not preserved, but certain in rev. v 3). This means that insofar as we have a full accounting of the work performed by the foreman's crew for the year, the total of their real production fell well below the production expected in the debits section of the account, so that the deficit compared to that of the preceding year increased nearly four-fold. We can hope that, with renewed Iraqi excavations of Umma/Djokha and its surroundings, more accounts will surface that inform us of the ultimate fate of this foreman.

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§20. Transliteration of Erlenmeyer 152[25]

obv. i

1) 7.36 10 gin_2 guruš u_4 1-$še_3$
2) si-i_3-tum mu ^{d}šu-^{d}suen lugal
3) $^1/_2$ $ša_3$-ku_3-ge
4) gab_2-us_2 ^{giš}apin-du_{10}
5) $^1/_2$ lu_2-^{d}šara$_2$
6) 1 ug_3 ^{d}nin-šubur-an-dul_3
7) $ša_3$-gu_4 ur-^{giš}gigir lugal-ku_3-ga-ni i_3-dab_5

8) $^1/_2$ ur-^{d}šul-pa-e_3
9) $^1/_2$ lu_2-^{d}šara$_2$
10) $^1/_2$ lugal-ur_2-ra-ni
11) gab_2-ra ^{giš}apin-du_{10} mu ku_3-ga-ni-$še_3$
12) $^1/_2$ ur-pa_4-u_2-e
13) $^1/_2$ ur-^{d}ma-mi
14) $^1/_2$ ur-^{d}šul-pa-e_3 simug
15) $^1/_2$ X X-gi*[26]
16) $^1/_2$ ur-$^{d\lceil}$bil$_4{}^{\rceil}$-ga-mes
17) 1 ug_3 ur-ki-maḫ

§21. *Translation*

obv. i

7.36 10 shekels (456 $^1/_6$) workdays,
deficit of year "Šu-Sin is king" (Šu-Sin 1).
$^1/_2$ (workman): Ša-kuge,
herding apprentice[27] of Apin-du.
$^1/_2$ (workman): Lu-Šara.
1 (workman) porter: Ninšubur-andul,
oxen driver of Ur-gigir, Lugal-kugani took responsibility for him.
$^1/_2$ (workman): Ur-Šulpa'e.
$^1/_2$ (workman): Lu-Šara.
$^1/_2$ (workman): Lugal-urani,
gabra(herder) of Apin-du, instead of Kugani.
$^1/_2$ (workman): Ur-Papu'e.
$^1/_2$ (workman): Ur-Mami.
$^1/_2$ (workman): Ur-Šulpa'e, smith.
$^1/_2$ (workman): X (falsified by repair of tablet).
$^1/_2$ (workman): Ur-Gilgameš.
1 (workman) porter: Ur-kimaḫ.

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24 For a review of the lexical evidence, see S. Liebermann, "Of Clay Pebbles, Hollow Clay Balls, and Writing: A Sumerian View," *AJA* 84 (1980) 339-358.

25 An asterisk (*) indicates sign disturbed by recent repair work.

26 The remains of some of the original signs are visible. When the tablet was repaired in recent times, the break along this case was filled with clay, and some cuneiform impressions were made on the fresh surface. See the text copy in figure 1 and its CDLI page for an overview of the damaged and repaired sections of the text.

27 G. Selz, *RA* 87 (1993) 29-45, has demonstrated the widespread and productive use of singular cohortatives in Sumerian nominalization; thus gab_2-us_2 (our "herding apprentice") means literally "I will follow it", gab_2-ra literally "I will drive it along".

18) 1 ug_3 ur-^{d}utu
19) $^1/_2$ šeš-a-ni
20) 1 ug_3 lu_2-ga-mu
21) 1 ug_3 e_2-a-lu-bi
22) 1 ug_3 ⌜$ḫe_2$⌝-gi-na
23) 1 ⌜ug_3⌝ lu_2-$giri_{17}$-zal
24) gab_2-ra a-kal-la
25) ama lugal[?]-gu_4-e[28]
26) $^1/_2$ na-ba-sa_6
27) $^1/_2$ šeš-kal-la
28) $^1/_2$ mu-zu-da
29) $^1/_2$ inim-^{d}inanna
30) $ša_3$-gu_4 lugal-$nesag_2$-e
31) gab_2-us_2 nig_2-du_7-pa-e_3
32) $^1/_2$ ur-^{d}šul-pa-e_3

obv. ii

1) $^1/_2$ lu_2-ma_2-gan-na
2) $^1/_2$ ur-e_2-maḫ
3) $^1/_2$ du_{11}-ga-^{d}$šara_2$
4) $^1/_2$ IR_{11}-mu
5) libir-am_3
6) $^1/_2$ lu_2-uš-gi-na
7) $^1/_2$ IR_{11}-mu
8) dumu lugal-igi-ḫuš-me
9) im[!]-e tag_4-a-ta
10) $^1/_2$ un-da-ga dumu u-bar
11) ki lu_2-dingir-ra ugula-ta
12) $^1/_2$ ur-^{d}en-lil_2-la_2 tir
13) 1 ug_3 ur-^{d}dumu-zi dumu IR_{11}-x
14) ki IR_{11} ugula-⌜ta⌝
15) (blank)
16) iti 12-*$še_3$[29]
17) iti ŠE.KIN-ku_5-*ta[!]
18) iti ^{d}dumu-zi-$še_3$
19) 1 ug_3 lu_2-^{d}⌜šul⌝-gi-ra dumu lugal-⌜bad_3⌝ dumu-diri-ta

20) iti 4-$še_3$ iti ⌜^{d}⌝li_9-si_4-ta
21) ⌜iti*⌝ ^{d}⌜dumu*⌝-zi-$še_3$
22) (blank, erasures)
23) a_2 ug_3-ga_6-bi u_4 50.00

24) a_2 dumu-gi_7 -bi u_4 1.12[!].00*

25) 24 guruš u_4 1-⌜$še_3$⌝
26) a_2 u_4 du_8-a ⌜ug_3⌝-ga_6 sag-ba zi-ga

1 (workman) porter: Ur-Utu.
$^1/_2$ (workman): Šeš-ani.
1 (workman) porter: Lu-gamu.
1 (workman) porter: Ea-lubi.
1 (workman) porter: Ḫegina.
1 (workman) porter: Lu-girizal,
gabra(herder) of Akala,
"mother" of Lugal-gue (?).
$^1/_2$ (workman): Nabasa.
$^1/_2$ (workman): Šeškala.
$^1/_2$ (workman): Muzuda.
$^1/_2$ (workman): Inim-Inanna,
oxen driver of Lugal-nesage,
herding apprentice of Nigdu-pa'e.
$^1/_2$ (workman): Ur-Šulpa'e.

obv. ii

$^1/_2$ (workman): Lu-Magana.
$^1/_2$ (workman): Ur-emaḫ.
$^1/_2$ (workman): Duga-Šara.
$^1/_2$ (workman): IR-mu,
they are of the previous (workforce).
$^1/_2$ (workman): Lu-uš-gina.
$^1/_2$ (workman): IR-mu;
they are sons of Lugal-igiḫuš,
remainder from the previous year (?).
$^1/_2$ (workman): Undaga, son of Ubar,
from the foreman Lu-dingira.
$^1/_2$ (workman): Ur-Enlila, forester.
1 (workman) porter: Ur-Dumuzi, son of IR-x,
from the foreman IR.

It is (a period of) twelve months:
from month "Harvest" (1st month, Umma calendar)
until the month "Dumuzi" (12th month).
1 (workman) porter: Lu-Šulgira, son of Lugal-bad, from the "excess children",
for 4 months, from month "Lisi" (9th month)
until the month "Dumuzi" (12th month).

The corresponding production of the porters: 50.00 (3,000) days.
The corresponding production of "dumugi"[30]: 1.12.00 (4,320) days.
24 workdays,
the production of free days of (the sick) porter already booked out of the debits.

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[28] The initial horizontal wedges of lugal were erased by the scribe, suggesting a correction to lu_2. The sign ama/dagal is unclear.

[29] It appears that this and the sign immediately below it in the following case were reconstructed over a filled-in gap in the tablet. If so, then the substantially correct sign forms would point to its reconstruction by a specialist, although we would expect rather iti 12-kam in l. 16, consistent with the majority of Ur III accounts, and with rev. v 7 of this text. The reconstructive work done on the lines obv. iii 11-13, however, is of a decidedly amateurish quality.

[30] That is, of the workmen qualified as "halftime".

27) 7.00 guruš u_4 1-$še_3$
28) a_2 dumu-gi_7 šeš-tab-ba bala-a gub-⌜ba⌝
29) (blank)
obv. iii
1) (blank, erasures, traces of numerical notations[31])
2) ⌜ŠU+NIGIN$_2$⌝ 2.17.00 10 gin_2 guruš u_4 1-$še_3$
3) (blank)
4) sag-nig_2-gur_{11}-ra-kam
5) $ša_3$-bi-ta
6) 5.45 guruš u_4 1-$še_3$
7) ŠE.KIN-a zar_3-tab-ba a-$ša_3$ a-u_2-da-gu-la a-$ša_3$ a-u_2-da-tur u_3 a-$ša_3$ ensi$_2$-ka
8) 3.15 guruš u_4 1-$še_3$
9) ŠE.KIN-a zar_3-tab-ba a-$ša_3$ nun-na a-$ša_3$ nam-ḫa-ni u_3 a-$ša_3$ išib-e-ne
10) 2.30 guruš u_4 1-$še_3$
11) ŠE.KIN-a zar_3-tab-ba a-$ša_3$ gu_4-suḫub$_2$ a-$ša_3$ bad_3-du_3-a [a]-$ša_3$ u_2-du-^{d}nin-a-ra-li u_3 gaba a-$ša_3$ gibil
12) 4.55 guruš u_4 1-$še_3$
13) a*-da gub-ba a-$ša_3$ ^{d}šara$_2$-⌜ḫe$_2$*⌝-gal$_2$ a-$ša_3$ APIN-ba-zi ⌜u_3*⌝ a-$ša_3$ a-u_2-da-gu-la
14) ⌜1*.⌝25 guruš u_4 1-$še_3$
15) ⌜kab_2*-ku_5* a*⌝-$ša_3$ nun-na-ta saḫar zi-⌜*ga *a-*$ša_3$⌝-ge a du_{11}-ga a-$ša_3$ nun-na u_3 a-$ša_3$ ⌜nam⌝-ḫa-ni
16) kišib da-a-ga
17) 17.50
obv. iv
1) 3.15 guruš u_4 1-$še_3$
2) ŠE.KIN-a zar_3-tab-ba a-$ša_3$ igi-e_2-maḫ-$še_3$ u_3 a-$ša_3$ ^{d}nin-ur_4-ra[32]
3) 2.10 guruš u_4 1-$še_3$
4) a-da gub-ba a-$ša_3$ igi-e_2-maḫ-$še_3$ u_3 a-$ša_3$ ^{d}nin-ur_4-ra
5) kišib a-kal-la
6) 5.51 $^1/_2$ guruš u_4 1-$še_3$
7) ŠE.KIN-a zar_3-tab-ba a-$ša_3$ GAN$_2$-maḫ a-$ša_3$ nin_{10}-nu-du_3 u_3 a-$ša_3$ APIN-ba-zi
8) 2.45 guruš u_4 1-$še_3$
9) kab_2-ku_5 GAN$_2$-maḫ-ta saḫar zi-ga u_3 u_2 na-ga-ab-tum-ma ga_2-ra
10) 1.48 guruš u_4 1-$še_3$
11) kab_2-ku_5 gu_4-suḫub$_2$-ka ka e_2-DUN-da(?)[33] si-ga

7.00 (420) workdays,
the production of "dumugi apprentices" in bala service.
obv. iii
(scratch pad calculations)
Together: 2.17.00 10 shekels (8,220 $^1/_6$) workdays

are the debits.
Therefrom:
5.45 (345) workdays,
harvested and sheaves piled up in the *Audagula* field, in the *Audatur* field and in the *Governor* field.
3.15 (195) workdays,
harvested and sheaves piled up in the *Prince* field, in the *Namḫani* field and in the *Incantation priests* field.
2.30 (150) workdays,
harvested and sheaves piled up in the *Oxen boot* field, in the field *Constructed wall*, in the field *Cattle herder of Nin-Arali* and (in the field) across from the new field.
4.55 (295) workdays,
irrigation work in the field *Šara is abundance*, in the field *Plough of Bazi* and in the *Audagula* field.
1.25 (85) workdays,
water installation in the *Prince* field, earth excavated, irrigation in the *Prince* field and in the *Namḫani* field.
Sealed tablet of Da'aga.
(partial sum:) 17.50 (1,070)
obv. iv
3.15 (195) workdays,
harvested and sheaves piled up in the field *Before Emaḫ* and in the field *Ninura*.
2.10 (130) workdays,
irrigation work in the field *Before Emaḫ* and in the field *Ninura*.
Sealed tablet of Akala.
5.51 (351) $^1/_2$ workdays,
harvested and sheaves piled up in the field *GANmaḫ*, in the field *Ninnudu* and in the field *Plough of Bazi*.
2.45 (165) workdays,
from the water installation of *GANmaḫ* earth excavated and green plants placed in the pen.
1.48 (108) workdays,
the water installation of the *Oxen boot* (field) at the

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31 The case presumably served as a sexagesimal "scratch pad". Top row 12,30, bottom row 7,17,30.

32 The two fields Igi-emaḫ-$še_3$ and Nin-ura (full name Nin-ura-an-ne_2-ga_2-ra, see *Umma Ist.* 4, 2962, obv. 2) were often attested together in our Ur III accounts, for instance in *Umma Ist.* 4, 2546 (SS 1), *Umma Ist.* 4, 2598 (SS 1), *Umma Ist.* 4, 2665 (SS 1), *Umma Ist.* 4, 2850 (AS 8), *Umma Ist.* 4, 2861 (AS 8), *Umma Ist.* 4, 2911 rev., *Umma Ist.* 5, 3019, *MVN* 21, 80 (SS 3).

33 The final sign -da here and in other contexts suggests the sign DUN requires a reading of final /d/. Possibly /zehda/, "young pig (sty)", is meant. Cp. *CTNMC* 27, *Princeton* 1, 498 (=*Prinecton* 2, 144; in en-du_8-du), etc.

12) 1.47 guruš u_4 1-$še_3$
13) kab_2-ku_5 a-$ša_3$ nun-na-ta saḫar zi-ga

14) 2.45 guruš u_4 1-$še_3$
15) a-da gub-ba a-$ša_3$ APIN-ba-zi
16) 1.32 guruš u_4 1-$še_3$
17) u_3-lugal ki-sur-ra-ka gub-ba
18) (blank, erasures)
19) ⌜10⌝ guruš u_4 1-$še_3$ ^{kuš}a-ga_2-la_2 ⌜$keš_2$⌝-ra_2 ma_2-da-ga ma_2-a gar [a]-⌜pi_4⌝-sal_4^{ki} -ta ka gir_{13}-giz-$še_3$ ⌜ma_2⌝ gid_2-da u_3 ma_2 gur-ra[34]
20) 22.03 $^1/_2$

obv. v

1) kišib lu_2-gi-na[35]
2) 3.30 guruš u_4 1-$še_3$
3) a-$ša_3$-ge a du_{11}-ga a-$ša_3$ ^{d}nin-ur_4-ra-du_6-na
4) ka i_7-da $puzur_4$-ma-ma-$še_3$ ^{u_2}ḪAR.AN ga_6-ga_2

5) kišib $ša_3$-ku_3-ge
6) 4.45 guruš u_4 1-$še_3$
7) kun-zi-da u_3-dag-ga-ka gub-ba
8) 30 guruš u_4 1-$še_3$ gi na-ga-ab-tum u_3-dag-ga-da tuš-a[36]

9) kišib lu_2-^{d}$šara_2$ dumu uru-bar-re
10) 5.15 guruš u_4 1-$še_3$
11) kun-zi-da e_2-^{d}lamma-ka gub-ba
12) kišib lugal-inim-gi-na[37]
13) 3.15 guruš u_4 1-$še_3$
14) kab_2-ku_5 ^{d}šul-pa-e_3-ta saḫar zi-ga

15) a-da gub-ba a-$ša_3$ ^{d}šul-pa-e_3
16) kab_2-ku_5 a-u_2-da-tur ku_5-ra_2 u_3 $šu_2$-luḫ-ak

17) kišib lugal-ḫe$_2$-gal_2
18) 3.15 guruš u_4 1-$še_3$
19) a-da gub-ba a-$ša_3$ bad_3-du_3-a a-$ša_3$ išib-e-ne u_3 a-$ša_3$ u_2-du-lu_2-sag_{10}[38]

20) kišib na-ba-sa_6
21) 2.57 guruš u_4 1-$še_3$
22) a-$ša_3$-ge a du_{11}-ga a-$ša_3$ ^{d}$šara_2$-gu_2-gal

23) kišib 2 a-gu-gu
24) 30 la_2-1 guruš u_4 1-$še_3$
25) mar-sa-a gub-ba ugu_2 ur-e_{11}-e ba-a-gar

26) kišib ur-^{d}nun-gal

intake of the EDUN (canal) filled in.
1.47 (107) workdays,
from the water installation of the *Prince* field earth excavated.
2.45 (165) workdays,
irrigation work in the field *Plough of Bazi*.
1.32 (92) workdays,
stationed at the *King's* bridge (?) of Kisurra.

10 workdays, agala leather bags bound, in Madaga loaded into a barge, from Apisal to the fork from Girgiz punted and the barge returned.
(partial sum:) 22.03 (1,323) $^1/_2$.

obv. v

Sealed tablet of Lu-gina.
3.30 (210) workdays,
field irrigation work performed in the field *Ninura-duna*, to the fork of the canal *Puzur-Mama* ḪARAN plants carried.
Sealed tablet of Ša-kuge.
4.45 (285) workdays,
stationed at the reservoir of the *Daga* bridge.
30 workdays, staying at the "reed nagabtum-pen" with the *Daga* bridge.
Sealed tablet of Lu-Šara, son of Uru-bare.
5.15 (315) workdays,
at the reservoir of the *Lamma temple* in service.
Sealed tablet of Lugal-inim-gina.
3.15 (195) workdays,
from the water installation at the Šulpa'e(field) earth excavated,
irrigation work in the *Šulpa'e* field,
water installation of the *Audatur* (field) cut off (?) and cleaned.
Sealed tablet of Lugal-ḫegal.
3.15 (195) workdays,
irrigation work in the field *Constructed wall*, in the *Incantation priests* field and in the field *Herders of Lusag*.
Sealed tablet of Nabasa.
2.57 (177) workdays,
field irrigation work performed in the field *Šara-gugal*.
Two sealed tablets of Agugu.
30 less 1 (29) workdays,
stationed in the boathouse, booked into the debits section of Ur-e'e('s account).

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34 It is not evident where the scribe might have found this line; it is not included in the receipt *MVN* 18, 397, from which this subsection was copied.

35 The seal impression of the receipt which formed the basis of this entry found on *MVN* 18, 397, suggests that this is the son of the following sealing official Šakuge.

36 sic, cp. *MVN* 14, 312, obv. 5-6.

37 Is this the father of Lu-Šara, and the son of Lugal-nesage (s. *Princeton* 1, 518)?

38 The field is described with sketch in the text *Or* 47-49, 509 (there called a-$ša_3$ u_2-du-lu_2-sa_6-ga). Compare *UTI* 4, 2400, rev. 1.

27) tu-ra e_2-a-lu-bi
28) iti dal-ta
29) iti ^{d}dumu-zi-$še_3$
30) a_2-bi u_4 4.00-kam
31) kišib ur-e_{11}-e
32) 3 guruš u_4 1.10-$še_3$
33) a_2-bi u_4 3.30-kam
34) ma_2-da-ga-aš gen-na
35) kišib lugal-iti-da
36) 31.26

Sealed tablet of Ur-Nungal.
Sick: Ea-lubi,
from the month "Flight" (5th month)
until the month "Dumuzi" (12th month),
the corresponding production: 4.00 (240) days.
Sealed tablet of Ur-e'e.
3 workers, 1.10 (70) workdays each,
the corresponding production: 3.30 (210) days,
having gone to Madga.
Sealed tablet of Lugal-itida.
(partial sum:) 31.26 (1,886)

rev. i

1) 15 guruš u_4 1-$še_3$
2) e_2 baḫar_3-a gub-ba
3) kišib inim-^{d}šara$_2$[39]
4) 15 guruš u_4 1-$še_3$
5) $guru_7$ GAN_2-maḫ im ur_3-ra
6) kišib gu-du-du
7) 2.00 guruš u_4 1-$še_3$
8) ki-su_7 nin_{10}-nu-du_3-a-ta a-pi_4-sal_4^{ki} -$še_3$ in-u im-la_2

9) 30 guruš u_4 1-$še_3$
10) ga_2-nun du_6-ku_3-ge-ta $guru_7$ a-pi_4-sal_4^{ki}-$še_3$ gi ma_2-a ga_2-ra ma_2 gid_2-da u_3 ma_2 ba-al-la

11) kišib 2 lu_2-du_{10}-ga
12) 18 guruš u_4 1-$še_3$
13) kun-zi-da e_2-^{d}lamma-ka-$še_3$ nig_2 gu_2-na bala-a ga_6-ga_2

14) 42 guruš u_4 1-$še_3$
15) a-pi_4-sal_4^{ki}-ta nibru^{ki}-$še_3$ ma_2 nig_2-ar_3-ra u_3 še mu-ša gid_2-da
16) kišib šeš-sag_{10}
17) 24 guruš u_4 1-$še_3$
18) ki-su_7 ^{d}šara$_2$-gu_2-gal-ka[40] še bala-a

19) 24 guruš u_4 1-$še_3$
20) e_2-amar-ra dabin bala-a še ma_2-a si-ga

21) 24 guruš u_4 1-$še_3$
22) a-pi_4-sal_4^{ki}-$še_3$ ma_2 še gid_2-da ma_2 ba-al-la u_3 še bala-a

23) 2.18 guruš u_4 1-$še_3$
24) ki-su_7 nin_{10}-nu-du_3-a-ta e_2-$duru_5$-a-bu_3-ka-$še_3$ še zi-ga

25) 26 guruš u_4 1-$še_3$
26) kun-zi-da a-gi-ze_2-a-ka gub-ba
27) 1.00 guruš u_4 1-$še_3$
28) kun-zi-da e_2-^{d}lamma-ka-$še_3$ zi_3 ga_6-ga_2
29) 8.56

rev. i

15 workdays,
stationed in the pottery factory.
Sealed tablet of Inim-Šara.
15 workdays,
silo of *GANmaḫ* plastered with clay.
Sealed tablet of Gududu.
2.00 (120) workdays,
from the threshing floor of the (field) *Ninnudu* to Apisal straw hung out.
30 workdays,
reed loaded into the barge, barge from the *Dukuge* storage house to the silo of Apisal punted and barge unloaded.
Two sealed tablets of Lu-duga.
18 workdays,
transport of the bala load to the reservoir of the *Lamma temple*.
42 workdays,
from Apisal to Nippur barge with rough ground flour and muša grain punted.
Sealed tablet of Šeš-sag.
24 workdays,
from the threshing floor of *Šara-gugal* barley transferred.
24 workdays,
in *E-amara* flour transferred, barley loaded in the barge.
24 workdays,
barge with barley to Apisal punted, barley unloaded and barley transferred.
2.18 (138) workdays,
from the threshing floor of *Ninnudu* for the *Abu* village barley winnowed.
26 workdays,
stationed at the reservoir of Agizea.
1.00 (60) workdays,
to the *Lamma* temple reservoir flour carried .

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39 The receipt *MVN* 16, 865, implies that this is the son of the preceding, sealing official Lugal-iti-da, and is therefore together with the remarks above to obv. v 1 to be added to the list of possible organizing principles of posting receipts into larger accounts.

40 Full name of the field is Šara-gugal-an-ne_2-ga_2-ra, see *Nik* 2, 142 obv. 3, *SAT* 3, 1546, rev. 1, and above, n. 32.

rev. ii

1) 2.01 guruš u_4 1-$še_3$
2) a-pi_4-sal_4^{ki}-ta $nibru^{ki}$-$še_3$ ma_2 zi_3-da gid_2-da [zi_3] bala-a u_3 ma_2 su_3 a-pi_4-sal_4^{ki}-$še_3$ gur-ra

3) 2.⌜08 guruš u_4 1-$še_3$⌝
4) $umma^{ki}$-$še_3$ gu_4 niga-da gen-na
5) $giri_3$ lu_2-^{d}suen gurušda[41]
6) 45 guruš u_4 ⌜1⌝-$še_3$
7) a-pi_4-sal_4^{ki}-ta $nibru^{ki}$-$še_3$ ma_2 i_3 ga ku_6 gíd-da

8) a-ra_2 1-kam
10) (blank, erasures)
11) 50! guruš u_4 1-$še_3$
12) a-pi_4-sal_4^{ki}-ta $nibru^{ki}$-$še_3$ ma_2 i_3 ga gíd-da i_3 ga e_2-gal-la ku_4-ra u_3 ma_2 gur-ra

13) a-ra_2 2-kam
14) 1.00 guruš u_4 1-$še_3$
15) a-pi_4-sal_4^{ki}-ta $nibru^{ki}$-$še_3$ ma_2 i_3 ga gid_2-da i_3 ga e_2-gal-la ku_4-ra u_3 ma_2 gur-ra

16) a-ra_2 3-kam
17) $giri_3$ a-kal-la ra-gaba
18) 45 guruš u_4 1-$še_3$
19) a-pi_4-sal_4^{ki}-ta $nibru^{ki}$-$še_3$ ma_2 i_3 ga ku_6 šar gíd-da u_3 ma_2 gur-ra
20) $giri_3$ *tur-am$_3$-i$_3$-li$_2$*
21) 48 guruš u_4 1-$še_3$
22) a-pi_4-sal_4^{ki}-ta $nibru^{ki}$-$še_3$ ma_2 ku_6 gid_2-da u_3 ma_2 gur-ra
23) $giri_3$ nig_2-lagar-e
24) 8.17

rev. iii

1) 48 guruš u_4 ⌜1⌝-$še_3$
2) e_2-$duru_5$ ^{d}amar-^{d}suen-ta ma_2 gid_2-da min
3) ki-su_7 a-u_2-da še bala-a še zi-ga u_3 $guru_7$ a-pi_4-sal_4^{ki} im ur_3-ra

4) 48 sar 15 $^1/_3$ gin_2 kin u_2 saḫar-ba

5) guruš-e 10 gin_2-ta
6) a_2-bi u_4 4.49 $^1/_2$ 2 gin_2

7) ugu_2 ur-e_{11}-e-ka ba-a-gar
8) 3.18 guruš u_4 1-$še_3$
9) gi zi $ša_3$-gal udu niga sa_2-du_{11} ^{d}šara$_2$-ka ze_2-a a-$ša_3$ ^{d}*na-ra-am-*^{d}suen e_2 udu a-pi_4-sal_4^{ki}-$še_3$ ga_6-ga_2
10) (blank)
11) kišib lu_2-^{d}ḫa-ia_3[42]

(partial sum:) 8.56 (536).

rev. ii

2.01 (121) workdays,
from the Apisal to Nippur barge with flour punted, flour transferred and empty barge returned to Apisal.
2.08 (128) workdays,
walked with fattening oxen to Umma.
Responsible: Lu-Suen, the fattener.
45 workdays,
from Apisal to Nippur barge with oil, cheese and fish punted;
first time.

50 workdays,
from the Apisal to Nippur barge with oil and cheese punted, oil and cheese brought into the royal estate and barge returned;
second time.
1.00 (60) workdays,
from Apisal to Nippur barge with oil and cheese punted, oil and cheese brought into the royal estate and barge returned;
third time.
Responsible: Akala, the "ragaba".
45 workdays,
from Apisal to Nippur barge with oil, cheese, fish and vegetables punted and barge returned.
Responsible: *Tūram-ilī*.
48 workdays,
from Apisal to Nippur barge with fish punted and barge returned.
Responsible: Nig-lagare.
(partial sum:) 8.17 (497).

rev. iii

48 workdays,
from the *Amar-Suen* village barge punted, ditto[43],
at the threshing floor of *Auda* (field) barley transferred, barley winnowed, and silo of Apisal plastered with clay.
48 (volume) sar, 15 $^1/_3$ (volume) shekels, grass and earth worked;
per workday 10 (volume) shekels,
the corresponding production: 4.49 $^1/_2$ 2 shekels (289 $^{32}/_{60}$) days;
booked into the debit account of Ur-e'e.
3.18 (198) workdays,
good reed, fodder for the fattening sheep, the regular offerings of Šara, torn out in the field of *Narām-Sin*, to the sheep fold in Apisal carried.
Sealed tablet of Lu-Ḫaja.

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41 This passage probably partially corresponds to the receipt *Princeton* 1, 380.

42 The entire passage rev. i 17 - iii 11 is evidently sealed by Lu-Haya.

43 This assumes that the min sign in text is not another "repair". "Ditto" would refer to the returning of the barge.

12) 5.00 guruš u_4 1-$še_3$
13) ki-su_7 nin_{10}-nu-du_3-a-ta e_2-amar-ra-$še_3$ in-u ga_6-ga_2

5.00 (300) workdays,
from the threshing floor of *Ninnudu* to *E-amara*
straw carried.
Sealed tablet of Atu, chief cattle administrator.

14) kišib a-tu $šuš_3$
15) (blank)
16) 13.55 $^1/_2$ 2 gin_2

(partial sum:) 13.55 $^1/_2$ 2 shekels (835 $^{32}/_{60}$).

rev. iv

1) (blank)
2) [5.00 guruš u_4 1-$še_3$][44]
3) a_2 u_4 du_8-a ⌜ug_3-ga_6⌝
4) 2 guruš u_4 35-$še_3$
5) a_2-bi u_4 1.10[!]
6) bala-a gub-ba ⌜bala-$še_3$⌝ gen-na u_3 bala-[ta] gur-ra

[5.00 (300) workdays],
production of free days of the porters.
2 workers, each 35 days;
the corresponding production is 1.10 (70) days.
stationed in the bala, gone to bala, returned from the bala.

7) (blank)
8) 6.10

(partial sum:) 6.10 (370).

rev. v

1) [ŠU+$NIGIN_2$] ⌜1.48.38 2⌝ gin_2 guruš [u_4 1-$še_3$]
2) [zi-ga]-⌜am_3⌝
3) [la_2-ia_3] ⌜28.22 8⌝ [gin_2 u_4 1-$še_3$]
4) (blank space)
5) nig_2-ka_9-ak a_2 $erin_2$-na-ka
6) lu_2-^{d}$šara_2$ ugula dumu lugal-inim-gi-na
7) iti 12-kam
8) iti ŠE.KIN-ku_5-ta
9) iti ^{d}dumu-zi-$še_3$
10) mu ma_2 ^{d}en-ki ba-ab-du_8

[Together] 1.48.38 2 shekels (6,518 $^2/_{60}$) workdays
booked out.
[deficit:] 28.22 8 shekels (1,702 $^8/_{60}$) [workdays].

Account of the production of the erin workers.
Lu-Šara is the foreman, son of Lugal-inim-gina.
It is (a period of) 12 months:
from the month "Harvest" (1st month)
until the month "Dumuzi" (12th month);
Year: "the boat of Enki was caulked".

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[44] There are some possibly recent traces of signs at the beginning of this case. The reconstruction derives both from the partial total at the bottom of this column (6.10 - 1.10 = 5.00) and from the calculated work norm of the porters from the debits section of the text above, obv. ii 21, based on a "free time" allowance of $^1/_{10}$. The work of the dumugi is not similarly rewarded in this account.