

Cuneiform Texts in The Otago Museum: A preliminary report

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Abstract: The Otago Museum, Dunedin, has a collection of over 150 cuneiform tablets. This paper describes the background of the collection and presents a brief analysis of two tablets from the collection, one historical and the other mathematical.

The Otago Museum, on the campus of Otago University in Dunedin on the South Island of New Zealand, holds one of the most important collections of cuneiform texts in the Southern Hemisphere. To date, though, only one text in the collection has been published, that being an Old Babylonian childbirth incantation by Farber (1984).

In 1997, Larry Stillman visited the museum for a brief inspection of the collection and subsequently alerted Wayne Horowitz to the potential importance of the collection. In September 2013 they visited the Otago Museum to begin a study of the collection as part of the Cuneiform Texts in Australian and New Zealand Collections (CANZ) project that intends to publish the cuneiform texts held in Australian and New Zealand collections.

It is expected that the Otago Museum cuneiform collection will be published in CANZ volume 2. CANZ volume 1 will include texts in Australian collections in collaboration with the Australian Institute of Archaeology. Both volumes are expected to be published by Eisenbrauns.

On the first visit to Dunedin a preliminary catalogue was begun. It was clear that the Otago collection numbers over 150 cuneiform texts and that it is quite special (Horowitz & Siddall 2013; Horowitz, Stillman & Zilberg 2015). In September 2015 P. Zilberg and A. Perdibon from the Hebrew University visited the Otago Museum to continue the study of the collection. Below is a preliminary report on the Otago Museum collection of cuneiform texts.

Most of the collection was a gift from Dr. Lindsay Rogers, a Dunedin-born and Otago Medical School trained surgeon who served in the Royal Army Medical Corps during World War II and was then Professor of Surgery at the Royal School of Medicine, Baghdad, Iraq, until 1950 when he returned to New Zealand. Rogers' autobiographical *Guerilla Surgeon* (1957) documents much of his extraordinary life as do a number of web-sites. He also donated to the Otago Museum 193 Mesopotamian stamp and cylinder seals and a marble head of Alexander the Great published by Hannah (2009). A catalogue of the Otago Museum seals and other Mesopotamian seals in New Zealand collections is to be published shortly by the Records of the Canterbury Museum.

The tablets bear registration numbers dating from 1947 to 1952, coinciding with Dr. Rogers' stay in Iraq and the

years immediately following his return. There are also a few tablets that were registered at the Otago Museum long before 1947 and after 1952, which came to the museum from donors other than Dr. Rogers. Dr. Rogers clearly had a good eye for collecting cuneiform tablets, or good teachers and contacts in the antiquities trade of post-war Baghdad. As one would expect, a majority of the tablets in the Otago Museum collection are administrative texts, mostly from the Old Akkadian to Old Babylonian periods, with the clear majority being Ur III period texts. This is because the vast majority of cuneiform texts were written for administrative purposes. There is also a good representation of standard royal inscriptions including tablets, cones, and bricks from the Ur III and Isin-Larsa Periods, and the time of Gudea and Nebuchadnezzar II.¹ What makes the collection special is that most of these items are very well preserved, including a particularly good collection of Ur III period receipts relating to trade in livestock.

However, the collection also includes a number of more rare specimens of the cuneiform corpus. Of note, are the aforementioned childbirth incantation, a medical tablet with prescriptions against the *Lamaštu*-demon on its obverse,² a set of duck weights in black diorite stone, an inscribed statuette and what appears to be a large three column tablet with a god-list. The *Lamaštu*-demon attacked women in childbirth and newborn babies, so the subject matter of this tablet and that published by Farber with the childbirth incantation is basically one and the same. In fact, the two tablets may have been placed together in antiquity as a matched pair as part of an ancient collection for Magical-Medical purposes as the two reached the Otago Museum together and were even assigned the same accession number.³ Of course, this may be mere coincidence since the two tablets could have only come together in modern Baghdad.

The study of the collection has just begun, but as a first indication of its nature a preliminary treatment of two of the more interesting finds in the collection: 1) E48.430, an inscription of the Kassite ruler Hašmar-galšu on a diorite block, and 2) E47.308, a lenticular school tablet with the mathematical problem 'How much is 37.5 x 37.5?' and its solution. Assyriological abbreviations below are as in CAD (*The Chicago Assyrian Dictionary*).

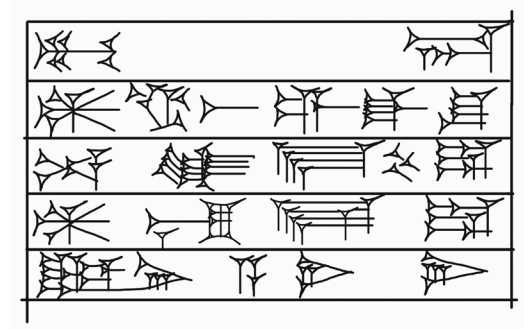


Figure 1: *Inscription of Hašmar-galšu, photograph and copy, Otago Museum E48.430, 13x7cm. Image: Copyright Otago Museum, Dunedin.*

1. Incised inscription of Hašmar-galšu

Otago Museum E48.430, 13x7cm, Figure 1.

Our no. 1 is a five-line inscription of Hašmar-galšu that is incised on a slab of black diorite stone. Hašmar-galšu himself was a ruler of the area around Nippur around the 15th century BCE. This individual was previously known from only four of his inscriptions, all of which were recently studied as a group in Boese (2010: 71-8). Two of these are duplicates of our inscription (Boese 2010: 75).⁴

Our inscription, like all the others of Hašmar-galšu, is written in Sumerian, which is quite common for Kassite period royal inscriptions.⁵ The Kassites were a dynasty who controlled Babylon for about 500 years in the second half of the second millennium BCE. They appropriated the Sumerian and Akkadian languages for administrative and inscription purposes. Like its two duplicates, the Otago piece commemorates the ruler's dedication of a gift-offering (mu-túm) to the Ekur temple of Enlil in Nippur; in the case of our example, the dedication of the diorite slab on which the inscription is incised. The other two examples of this same dedication are described in Brinkman (1976: 326) as being on 'black stone bricks', apparently also similar pieces of diorite. Thus our text is apparently not only a textual duplicate of the previously known pair, but may also be a functional duplicate as well. One might imagine that three functioned as part of a group for which more exemplars may yet to be found.

As already observed by Brinkman, the inscription is not written in the form of a standard Mesopotamian dedicatory inscription of the type – to the deity, the king, an object, built/dedicated (Brinkman 1976: 325 n.4). The other two inscriptions of Hašmar-galšu are of the standard type (Boese 2010: 76f). The first, now at Yale, is also short, but slightly longer than the Otago inscription and its duplicates. Written over eight lines, it records the dedication of a temple to the ^dimin-bi ('The Seven Gods') for the life of Hašmar-galšu, son of Ma-la-ab-Har-be. The second is much longer, occupying 15 lines, even ending

with a curse formula. This records the dedication of an ornamental brick (^{na4}sig₄-me-te) for the Great Gate (ká-mah) of the Ekur.

The Otago Museum inscription Otago E 48.430 reads,

- | | |
|---|-----------------------------|
| 1. mu-túm | 1. A gift |
| 2. ^d Ha-aš-mar-gal-šu | 2. of Hašmargalšu |
| 3. ^{na4} sig ₄ é-kur-ra | 3. A stone slab of the Ekur |
| 4. ^d en-líl-ra | 4. for Enlil, |
| 5. lugal-a-ni-ir | 5. his king. |

Even though the text of Otago E 48.430 is but five lines long, the fact that it is such a rare find, one of only five known for this ruler in the world, makes this yet another example of the special quality of Roger's bequest to the Otago Museum.

2. The Mathematical School Tablet⁶

Otago Museum E47.308, 8.5x9cm, Figure 2.

This object is a typical example of a round school tablet, commonly known in Assyriology as lenticular tablets. Numerous tablets of this type are found throughout the first half of the Second Millennium BCE at many different sites, including among others, Nippur and Ur.⁷ Such tablets are easy to identify in tablet collections as they are about the size of the human hand, and bun shaped, that is to say that the obverse is flat, providing a large writing surface for the student scribe, while the reverse is more rounded. Such tablets are perhaps the easiest to make in the cuneiform tablet repertoire, only requiring that the student scribe or his teacher take an appropriate sized clump of clay in one hand, and use the other hand to pat the top side (obverse) flat, leaving the back (reverse), more or less, to follow the contours of his or her open palm.⁸ Many such tablets bear mistakes in sign formation and sign selection that one might expect to find in the practice work of beginning scribes. Thus, we presume that the lenticular tablets were most often the work of children.

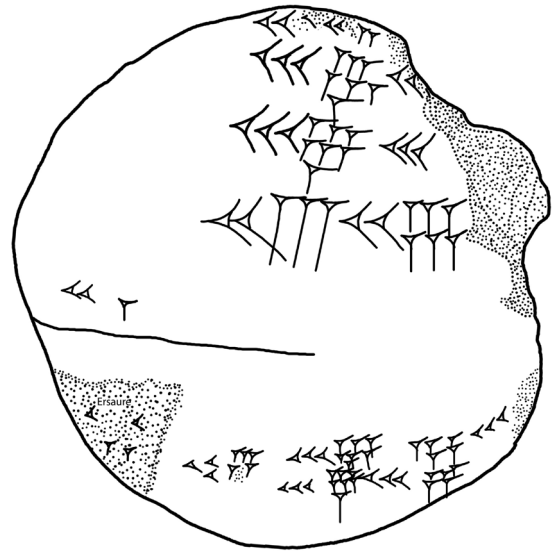


Figure 2: *The Mathematical School Tablet, photograph and copy, Otago Museum E47.308, 8.5x9cm. Image: Copyright Otago Museum, Dunedin.*

On some examples, we even find the same text written out twice, once in a good hand and then in the hand of a less-qualified scribe. In such cases it may be assumed that the exercise involved a teacher writing out a selection which the child novice was to copy.

The subject matter of such texts is varied, although common areas of study are standard lexical works, proverbs, and multiplication problems. The interest in multiplication problems can be related to the importance of learning standard multiplication tables by heart; this being the bane of many a elementary school student in our world, and the subject of numerous school tablets in the ancient world. Ancient Mesopotamia used a sexagesimal system (Base 60) so the standard multiplication tables included those for multiples of 1-20, 30, 40, and 50, and a few other select key numbers in the Base 60 system that were drawn from tables of reciprocals (pairs of numbers that when multiplied = 1, 60, or a power of 60).⁹ Another common table studied was that for squares and squared numbers.¹⁰

Professional cuneiform scribes almost never show evidence for their calculations on their tablets. This is both the case for mathematical tablets outside the lenticular group, and for the plethora of administrative tablets which at times can require intricate calculations of very large numbers. However, in the case of lenticular tablets, the student scribe shows his rough work, perhaps so that his teacher would be able to check how he reached his answer, right or wrong. This type of mathematical exercise, with rough work, was studied in some detail in Robson (1999), which presents 49 such examples on round tablets, and four more on tablets of different shapes (three rectangular and one in the shape of a trapezium). Other tablets of this sort from Nippur and Sippar are noted in Robson (1999: 251 nn. 4-5), and to be found in Abed (2010: 87f). The Otago Museum tablet is of this same round type, now adding a new member to this group.

The Problem and the Rough Work

Otago Museum E47.308 shows both a problem pertaining to squared numbers and the scribe's rough work for solving this problem. Robson (1999: 250-2) gives two examples of this type of exercise which require that the number to be squared be written twice in vertical alignment in two lines of numerals, with the answer underneath in a third line. This is the case in E47.308 where the main problem is laid out in the upper right portion of the tablet with the rough work scattered by the upper edge, to the left, and below. The first sets of numerals in all three rows are clear, but the last set of signs in each row are either fully or partially lacking due to damage to the upper right corner of the tablet. Nonetheless, what remains allows us to reconstruct the main problem as follows,

37,30	◀◀◀	◀◀◀
37,30	◀◀◀	◀◀◀
23,26,15	◀◀◀	◀◀◀

In terms of the Mesopotamian sexagesimal Base 60 system this is,

Question: How much is 37,30 x 37,30?

Answer: 23,26,15

In terms of our Base 10,

Question: How much is 37.5 x 37.5?

Answer: $23 \times 60 + 26 \times 1 + 15/60 =$
 $1380 + 26 + 0.25 = 1406.25$

This answer is correct. Exactly how the scribe reached his answer is unclear. The rough work in the bottom right corner of the tablet seems to have attempts to work with multiples of 35, 36, 37. This may suggest that the scribe was trying to calculate multiples of 37 on his way to the solution of 37×37 , as a step in finding the answer to the more complex problem of $37\frac{1}{2} \times 37\frac{1}{2}$.

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Endnotes

- 1 There are also a number of intriguing 'fake' inscriptions and some apparent museum replicas, which themselves are worth of a study as cultural artefacts of mid-20th century Iraq.
- 2 For Lamaštu see now Farber 2014.
- 3 Experience teaches that tablets which reach museums together were often excavated together and so held together in ancient tablet collections.
- 4 One is NBC 6103 at Yale and the other is MMA 41.160.187 at the Metropolitan Museum in New York. Boese provides a previous bibliography. See more recently CKST (corpus of Kassite Sumerian Texts) at oracc.museum.upenn.edu.
- 5 A case in point is the long statue inscription of Kurigalzu published as Veldhuis 2008.
- 6 For an overview of Mesopotamian mathematics see Friberg's article in *Reallexicon der Assyriologie (RIA)* 7: 531-85
- 7 For Nippur and this genre in general see Falkowitz 1983-84. For Ur and lenticular tablets with mathematical problems of the type in the Otago Museum see Robson 1999: 245-77. For the general atmosphere of learning in the cuneiform scribal schools see the classic discussion in Kramer 1963: 229-48.
- 8 For women as scribes see e.g. CAD T 150-151 *ṭupšarratu*, 'female scribe', and Svärd 2012. For the Old Babylonian period specifically see Lion and Robson 2005.
- 9 The standard list begins: 2 x 30, 3 x 20, 4 x 15, 5 x 12, 6 x 10, 8 x 7,30 (i.e. 8 x 7 ½ = 60), 9 x 6,40 (i.e. 9 x 6 2/3 = 60) etc. See RIA 7: 545-6.
- 10 RIA 7: 546-7.