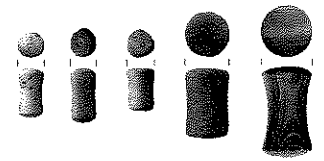
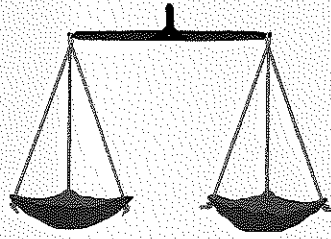
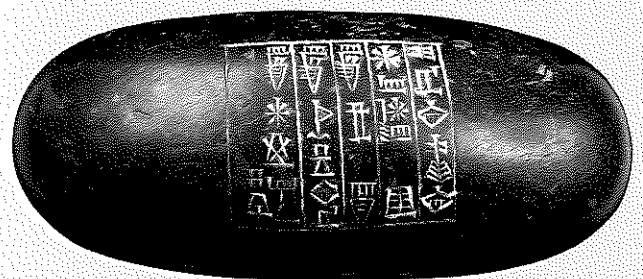


Weight & Value 3



# Bronze Age Weights from Mesopotamia, Iran & Greater Indus Valley

by Enrico Ascalone



*Wachholtz*

# Bronze Age Weights from Mesopotamia, Iran & Greater Indus Valley

by

ENRICO ASCALONE

with a contribution from

JAN TAVERNIER

WACHHOLTZ VERLAG KIEL/HAMBURG

# Inscribed weights<sup>1</sup>

by JAN TAVERNIER

This section contains the (re-)publication of 29 weight inscriptions found on 20 duck-shaped, eight sphendonoid and one pyramid-shaped weight. The majority of the weights originate from Susa, with only a few specimens discovered at Telloh. The latter, however, show more morphological variations than their Susa counterparts: four sphendonoids, two duck-shaped and one pyramid weight. Almost all of the Susa weights are duck-shaped (18 specimens), complemented by four sphendonoids.<sup>1</sup>

The following provides a record of the two royal weights, the 27 non-royal weights, as well as the provenance and the mass mentioned in the text of each weight.

The inscribed weights fit well into the Mesopotamian metrological system, with no. 2.17 as the only exception due to an unusual placement of the inscription (see below). In the following text, the 'left' and 'right' sides of a weight are defined as if looking at it directly from the front.

## 1 Royal weights (Telloh and Ur)

### 1.1 AO 246 (Pl. 27: 814)

This sphendonoid weight from Telloh, made of diorite and dated to the Ur III period, comprises a perfectly preserved five-line inscription from Šū-Sîn (2035-2027 BCE). It was published as RIME E3/2.1.4.22 by D. FRAYNE (1997, 332-333, with bibliography) and translated by M. A. POWELL (2000b, 404 no. 2.150).

*Text:*

- (1) 5 MA-NA GI-NA
- (2) <sup>4</sup>ŠU-<sup>d</sup>EN-ZU
- (3) LUGAL-KALA-GA
- (4) LUGAL URI<sup>ki</sup>-ma
- (5) LUGAL-AN-UB-DA-LÍMMU-BA

*Translation:* 'Five minas, confirmed: Šū-Sîn, mighty king, king of Ur, king of the four quarters'.

*Comment:* The Sumerian verb GI-NA or GI-IN (cf. 1.2), which is used in legal contexts to affirm that something has been established as true, may be an early adoption of the Akkadian word *kānu* of the same meaning (POWELL 2000b, 404 n. 12). This theory is based on an inscription from the Neo-Babylonian king Nebuchadnezzar II (605-562 BCE)<sup>2</sup>, in which GI-NA and *kānu* are equivalents.

### 1.2 AO 22187 (Pl. 30: 887)

This pyramid-shaped weight from Ur is made of diorite and also dates to the Ur III period. It comprises a perfectly preserved eight-line inscription from Šulgi (2092-2045 BCE). First published as RIME E3/2.1.2.50 by D. FRAYNE (1997, 153-154, with bibliography), it was again translated by M. A. POWELL (2000b, 404 no. 2.149). With an inscription dedicated to the Sumerian lunar god Nanna, the weight also sports a lunar crescent, the symbol of the moon god, on its top (FRAYNE 1997, 153).

*Text:*

- (1) <sup>d</sup>NANNA
- (2) LUGAL-A-NI
- (3) <sup>d</sup>Šul-gi
- (4) NITA-KALA-GA
- (5) LUGAL URI<sup>ki</sup>-ma
- (6) LUGAL-AN-UB-DA-LÍMMU-BA-KE<sub>4</sub>
- (7) MAŠ MA-NA
- (8) [M]U-NA-GI-I[N]

*Translation:* 'For the god Nanna, his lord, Šulgi, mighty man, king of Ur, king of the four quarters, confirm[ed] (this weight stone to be) one-half mina'.

*Comment:* An interesting parallel can be drawn to the weight of Nebuchadnezzar II, which was produced based on a weight from Šulgi<sup>3</sup>. Its inscription reads: (1) [2]<sup>4</sup> 'MA<sup>1</sup>.NA 'GI<sup>1</sup>.[NA] (2) NÍG. GA <sup>d</sup>AMAR.UTU-LUGAL-DINGIR<sup>mes</sup> (3) GABA. RI 'KI<sup>1</sup>.LÁ (4) ŠÁ <sup>d</sup>MUATI-NÍG.DU-URU (5) LUGAL 'KÁ.DINGIR.RA<sup>1</sup>.KI (6) 'DUMU <sup>d</sup>MUATI-A<sup>1</sup>-URU (7) 'LUGAL KÁ.DINGIR.RA<sup>1</sup>.KI (8) a-na 'GABA<sup>1</sup>. RI (9) KÍ.LÁ <sup>d</sup>ŠUL<sup>1</sup>-gi (10) LUGAL ma-aḥ-ri 'ú<sup>1</sup>. kin-ni : '[Two] minas, correct (weight)]. Property of Marduk-šar-ilāni<sup>5</sup>. Copy of a (standard) weight of Nebuchadnezzar, king of Babylon, son of Nabopolassar, king of Babylon, (which) he established following a copy of a (standard) weight of Šulgi, a king of the past'.

The weight described here belongs to a set of three diorite duck-shaped weights of Šulgi, all bearing the same inscription but with different masses: ½ mina (E3/2.1.2.50), two minas (E3/2.1.2.51), and five minas (E3/2.1.2.52).

<sup>1</sup> Sincere thanks go to Dominique Charpin, Anne Goddeeris, Walther Sallaberger and Karel van Lerberghe for their useful comments.

<sup>2</sup> For this weight (BM 91005), see SOUTZO 1911, 29; BERGER 1973, 147; POWELL 2000a, 325 no. 1260; DA RIVA 2008, 123 G1; Nebuchadnezzar II G1 at <http://oracc.museum.upenn.edu/ribo/pager> (accessed ...).

<sup>3</sup> Unfortunately, it is unknown which weight this refers to.

<sup>4</sup> The Oracc website records one mina, but with a mass of 978.309 g this is more likely equivalent to two minas (POWELL 2000a, 325, n. 31).

<sup>5</sup> M. A. POWELL (2000a, 325) translates 'Property of Marduk king of gods'.

## 2 Non-royal weights

## 2.1 Weights from Telloh

## 2.1.1 AO 230A (Pl. 29: 854)

Duck-shaped weight made of limestone, probably dated to the Ur III period, with a vertical inscription on the left side of the duck.

Text: ½ MA-NA

Translation: 'Half a mina.'

## 2.1.2 AO 21419 (Pl. 29: 853)

Duck-shaped weight made of limestone, discovered in Telloh and probably dating from the Ur III period. The well-preserved three-line inscription was engraved vertically on the right side of the duck. This weight is also mentioned by A. THOMAS (2016, 29).

Text:

(1) 1/3 MA-NA

(2) GI-NA

(3) ša sa-am-mu'-um

Translation: '1/3 of a mina, confirmed, of Sammum.'

Comment: *Sa-am-mu'-um* probably refers to a (possibly Akkadian or Elamite) individual's name. For an Akkadian name, one could use the lexeme *sāmu* 'red, reddish brown', which is also attested as *sammu* (CAD S, 126) and is used as a personal name in Akkadian (STAMM 1939, 266). The name could be a reference to the individual's hair colour. On the other hand, however, the name could be connected to Elamite *sammi/zammi*, possibly meaning 'crown' (HINZ/KOCH 1987, 1053) or *zammi* 'labourer' (HINZ/KOCH 1987, 1270)<sup>6</sup>. The main objection to both hypotheses is that the name would most likely have been spelled \**sa-am-mi-im*.

## 2.1.3 AO 247 (Pl. 27: 810)

Sphendonoid weight made of diorite, dated to the Ur III period. The inscription is slightly worn.

Text: 10 GÍN

Translation: '10 shekels.'

## 2.1.4 AO 248 (Pl. 27: 797)

Sphendonoid weight made of black stone, dated to the Ur III period, with a horizontal inscription.

Text: 5 GÍN

Translation: '5 shekels.'

## 2.1.5 AO 22744 (Pl. 27: 796)

Sphendonoid weight with a horizontal inscription in Sumerian. It probably dates to the Ur III period.

Text:

(1) UR-AD DUMU

(2) Ba-a-a DAM-GÀR

Translation: 'Ur-Abu, son of Baya, the merchant.'

6 See the tables in J. TAVERNIER (2010, 1065-1068) for equivalences between Akkadian *s* and Elamite *s/z*.

## 2.2 Weights from Susa

## 2.2.1 A. 6909 (Pl. 18: 616)

Duck-shaped weight made of limestone with a two-line inscription engraved horizontally on the left flank of the duck.

Text:

(1) 1 GUN GI-NA ša m<sup>x</sup>-dAMAR-UTU

(2) DUMU m<sup>i</sup>-na-é-SAG-ÍL-NUMUN-ib-ni

Translation: 'One talent, confirmed, of PN-Mar-duk, the son of Ina-Esagil-zēr-ibni.'

Comment: According to J. J. STAMM (1939, 229 n. 6), the name type *ina* + temple name + statement occurs very rarely in the Kassite period and is more frequently attested in the post-Kassite periods. Names belonging to this type, however, already appear in Old Babylonian texts, predominantly dated to the reigns of the later Old Babylonian kings, *i. e.* Ammiditana (1683-1647 BCE), Ammišaduqa (1646-1626 BCE), and Samsu-ditana (1625-1595 BCE). Nevertheless, one mention of Ina-Ebabbar-balātu can be found in JEOL 46 10, dated to the reign of Sin-muballit (1812-1793 BCE), and some other examples are attested in texts dated to the reigns of Samsi-iluna (1749-1712 BCE) and Abi-ešuh (1711-1684 BCE). The names are: Ina-Ebabbar-balātu (one text), Ina-Ekur-rabi (eight texts), Ina-Ekur-magir (one text), Ina-Esagil-abi (one text), Ina-Esagil-balātu (one text), Ina-Esagil-lū-zērum (one text<sup>7</sup>), Ina-Esagil-zērum (28 texts), Ina-Eulmaš-banat (one text), and Ina-Eulmaš-zērum (nine texts)<sup>8</sup>. They are also regularly attested in the post-Old Babylonian periods. Assyrian texts, however, rarely contain names belonging to this type. Examples are Ina-Ekur-liš[ir] (KAJ 88 obv. 6; Middle Assyrian<sup>9</sup>), Ina-Ekur-ramât (MARV 57 ii 18'; see FREYDANK/SAPORETTI 1979, 65), Ina-Ekur-rešūssu (MAH 16086 A ii 16'; see FREYDANK/SAPORETTI 1979, 65), and Ina-Esagil-gapšat (SAA 11 10:10; Neo-Assyrian), who was probably a Babylonian woman (WESZELI 2000).

## 2.2.2 SM 23 (Pl. 18: 617)

This duck-shaped weight, currently stored in the Susa Museum, will soon be published by ASCALONE/BASELLO (2022). It provides valuable metrological and lexical data, confirming that the Elamite word for 'talent' (usually written logographically as GÚ or GUN) was in fact *kim*. The weight can securely be dated to the Neo-Elamite period. Its inscription is carved horizontally on the left flank of the duck.

Text: '1' gi-um

Translation: '1 talent.'

7 CBS 1528 ii 9' (FERWERDA/WOESTENBURG 1998, 153-154).

8 These examples were found by searching through archibab ([www.archibab.fr](http://www.archibab.fr)) and the CDLI (<https://cdli.ucla.edu/>).

9 C. SAPORETTI (1970, 254) doubts between Ina-Ekur-lib[ur] or Ina-Ekur-li[šir].

## 2.2.3 A.6356 (Pl. 18: 615)

This diorite duck-shaped weight, probably to be dated to the Old Babylonian period, was first published by V. SCHEIL (1908, 96, pl. 6/3). It was then mentioned again by M.-C. SOUTZO (1911, 5, no. 6356), and eventually republished by F. H. WEISSBACH (1916, 51). The text is engraved horizontally in two columns on the right side of the duck.

Text:

| Column 1                                      | Column 2                                    |
|-----------------------------------------------|---------------------------------------------|
| (1) 'NA <sub>4</sub> 40 MA-NA'                | (1) [ni]-iš-ku-un NA <sub>4</sub> dAMAR-UTU |
| (2) GI-NA                                     | (2) KI NA <sub>4</sub> É-SAG-ÍL             |
| (3) na-ri-ú dIM-ba-ni                         | (3) É-ZI-Í DA'                              |
| (4) GALA MAH                                  | (4) É-LUGAL-RI-RI-MÁR-DA-KE <sub>4</sub>    |
| (5) dAMAR-UTU                                 |                                             |
| (6) LÚ TIN-TIR <sup>ki</sup> -KE <sub>4</sub> |                                             |

Translation: 'Stone weight of 40 minas, confirmed. Stone of Adad-bani, the chief of the *ga-la*-priests of Marduk, man of Babylon. [We] have established the stone weight of Marduk with the stone weight of the Esagil-temple, the Ezida-temple and the E-Lugal-riri-Marad-temple.'

Comment: According to F. H. WEISSBACH (1916, 58-59), the verbal form *niškun* may imply two things: either '*wir haben gelegt*' or '*wir haben gemacht*'. It is unusual that NA<sub>4</sub> refers to three temples but is not in the plural form. There are two possible explanations for this: 1) the inscription means that the weight has been deposited next to three other weights, or 2) the weight was made based on the other weights, with the other objects serving as templates. Weissbach seems to favour the second explanation, which appears to be the most plausible.

## 2.2.4 Sb 13747 (Pl. 17: 609)

Duck-shaped weight made of diorite, probably dated to the Old Babylonian period. This object was briefly mentioned by M.-C. SOUTZO (1911, 2) because of its poor state of preservation. The inscription is carved horizontally on the left side of the duck.

Text: 20 MA-NA GI-NA

Translation: '20 minas, confirmed.'

## 2.2.5 Sb 13750 (Pl. 17: 611)

Duck-shaped weight made of diorite, probably dated to the Old Babylonian period. M. C. SOUTZO (1911, 41 no. 15) briefly mentions its poor fractured state. The inscription is engraved horizontally on the left side of the duck.

Text: 20 MA-NA ša mBa-ru-tim

Translation: '20 minas of Barutum.'

Commentary: Barutum could be an individual's name, but to the author's knowledge there is no mention of this name in Akkadian onomastics.

## 2.2.6 Sb 9343 (Pl. 17: 605)

Duck-shaped weight made of limestone. The inscription is engraved vertically on the right flank of the duck.

Text:

(1) [10] MA-NA '10' GÍN

(2) [šá] ú-ba-ia-ti

Translation: 'X minas and 10 shekels, [of] Ubayatum.'

Comment: The name Ubayatum existed in Old Babylonian Sippar, but was always spelled with initial ú (FERWERDA/WOESTENBURG 1998, 341).

## 2.2.7 Sb 9344 (Pl. 17: 604)

Duck-shaped weight made of limestone. The inscription is engraved vertically on the right flank of the duck.

Text: 10 MA-NA

Translation: '10 minas.'

## 2.2.8 Sb 13744 (Pl. 16: 600)

Well-preserved duck-shaped weight made of diorite. It was first published by M.-C. SOUTZO (1911, 6, no. 6326, fig. 1). The inscription is carved vertically on the duck's right flank.

Text: 5 MA-NA

Translation: '5 minas.'

## 2.2.9 Sb 9350 (Pl. 16: 596)

Well-preserved duck-shaped weight made of diorite. The Louvre website dates the object to the Middle Elamite period (<https://collections.louvre.fr/en/ark:/53355/cl010182086>). It was first published by M.-C. SOUTZO (1911, 6, no. 1144, fig. 2). The inscription is carved vertically on the duck's right flank.

Text: 4 MA-NA

Translation: '4 minas.'

## 2.2.10 Sb 13680 (Pl. 11: 479)

Sphendonoid weight made of diorite with a perfectly preserved horizontal inscription.

Text: 3 MA-NA

Translation: '3 minas.'

## 2.2.11 Sb 9346 (Pl. 16: 592)

This weight is no. 1245 in Soutzo's list of duck-shaped weights (SOUTZO 1911, 6). As it is made from mastic bitumen ('*calcaire noir bitumineux*' according to Soutzo), it was published for a second time in a study on bitumen in Susa (Dechesne in CONNAN/DECHESNE 1996, 271 no. 252). Whilst Dechesne proposed a mid-2<sup>nd</sup> millennium BC date and the Louvre website mentions the Middle Elamite period (<https://collections.louvre.fr/en/ark:/53355/cl010128121>), in reality the object most likely dates to the 7<sup>th</sup> or 6<sup>th</sup> century BC (ASCALONE/BASELLO 2022, 12).

Text: 3 MA-N[A]

Translation: '3 minas.'

*Comment:* According to Ascalone and Basello, the inscription is carved horizontally on the left flank of the duck, in contrast to the majority of duck-shaped weights which bear vertical inscriptions on the left or right flank of the duck (ASCALONE/BASELLO 2022, 12). In reality, there are several other specimens from Susa with a similar arrangement (see below). Another similar weight from Susa (SM 23, no. 2.2 in this publication) also dates to the Neo-Elamite period.

#### 2.2.12 Sb 13746 (Pl. 17: 606)

This diorite duck-shaped weight dates to the early 1<sup>st</sup> millennium BC (POWELL 2000a, 324) and was first published by V. SCHEIL (1905, 48). It also appears in Soutzo's list of Susian duck-shaped weights (SOUTZO 1911, 8 no. 6325, fig. 7). The four-line horizontal inscription on the left flank of the duck was later translated into English by M. A. POWELL (2000a, 324 no. 126I).

*Text:*

- (1) 2 MAŠ MA-NA GI-NA
- (2) ša <sup>m</sup>Na-ši-ri
- (3) DUMU <sup>m</sup>Ki-din-<sup>a</sup>Gu-la
- (4) ŠA-BAL-BAL <sup>m</sup>Ir-<sup>a</sup>É-a

*Translation:* '2.5 minas, confirmed, of Naširi, son of Kidin-Gula, descendant of Arad-Ea.'

*Comment:* The 2.5 minas mentioned in the inscription actually represent ten Babylonian minas or 60 Old Persian *krša* (POWELL 2000a, 324 n. 17)<sup>10</sup>.

#### 2.2.13 Sb 9330 (Pl. 15: 587)

Middle Babylonian duck-shaped weight made of hematite. First mentioned by V. SCHEIL (1909, 137), it was later published by M.-C. SOUTZO (1911, 7, no. 12801, fig. 4). The inscription is carved vertically on the duck's right flank.

*Text:* 1 MA-NA

*Translation:* '1 mina.'

#### 2.2.14 Sb 9345 (Pl. 15: 589)

Diorite duck-shaped weight, first published by M.-C. SOUTZO (1911, 6, no. 7895, fig. 3). The inscription is carved vertically on the duck's right flank.

*Text:* 1 MA-NA

*Translation:* '1 mina.'

#### 2.2.15 Sb 13469 (Pl. 1: 29)

This hematite sphendonoid weight from Susa was first mentioned by V. SCHEIL (1909, 137), then later published by M.-C. SOUTZO (1911, 11, no. 12994, fig. 13) and M. A. POWELL (2000a, 324 no. 126C). The weight can be dated to the Old Akkadian period. It bears a horizontal inscription.

*Text:* 1 MA-NA TUR

*Translation:* 'One small mina.'

#### 2.2.16 Sb 6339 (Pl. 15: 582)

Duck-shaped weight made of hematite with an unusual arrangement: the two-line inscription is engraved on both sides of the beak.

*Text:*

- (1) MAŠ MA-NA GI<sub>4</sub>
- (2) ša a-šu-ub-<la>-an

*Translation:* 'Half a mina, verified, of Ašublan.'

*Comment:* The sequence a-šu-ub-an does not yield a plausible name. Yet, if altered to a-šu-ub-<la>-an, a connection could be made with the anthroponym Ašublan, attested five times in Old Babylonian texts (ARM 28 44bis:24, 50:14, 105:21'; BBVO 20 3:24,36; FM 9 7:3'; see www.archibab.fr).

#### 2.2.17 Sb 13298 (Pl. 11: 483)

Sphendonoid weight made of diorite with a horizontal inscription.

*Text:* IGI-5-GÁL MA-NA

*Translation:* '1/5 of a mina.'

#### 2.2.18 Sb 13753 (Pl. 16: 602)

This duck-shaped weight, dated to the Kassite period, was first published by V. SCHEIL (1913, 34) and is also cited by the Chicago Assyrian Dictionary, S, p. 145. The inscription is carved horizontally on the left flank of the duck.

*Text:*

- (1) [x MA-NA] GI-NA<sup>11</sup>
- (2) [<sup>m</sup>Ka-šak-t]i-šu-gab
- (3) [DUMU <sup>m</sup>š]EŠ-DÛ
- (4) [i]-na MA-NA<sup>12</sup>
- (5) [is]-sa-ni-iq<sup>13</sup>

*Translation:* 'x minas, confirmed, of Kašakti-Šugab, the son of Aḫu-bani. (This weight) was tested [wi]th the correct mina.'

*Comment:* Kašakti-Šugab (Kassite name), son of Aḫu-bani (Akkadian name), is also attested in a kudurrū from the Kassite king Nazi-Maruttaš (1307-1282 BCE). In this document (NM 2; PAULUS 2014, 325-334), Nazi-Maruttaš donates some plots of land to Kašakti-Šugab. According to an epigraph on the same document, Kašakti-Šugab was a scribe (NM 2 VI-V5).

#### 2.2.19 Sb 13603 (Pl. 8: 374)

This sphendonoid limestone weight was discovered in 1934 (see <https://collections.louvre.fr/en/ark:/53355/cl010186169>) and dates to the Kassite period. Whilst the weight is incomplete, its inscription is preserved in full.

*Text:* 10 GÍN

*Translation:* '10 shekels.'

11 Scheil prefers [*tak* x MA-NA] GI-NA '[Stone of x minas], fixed'.

12 Scheil has the following reading: [*a*]-na MA-NA.

13 Scheil reads [*u*]-sa-ni-iq.

10 See J. TAVERNIER (in press) on the Old Persian *krša*.

2.2.20 Sb 9359 (Pl. 14: 571)

Duck-shaped weight made of hematite with a slightly worn surface. The vertical inscription on the left flank of the duck is well preserved. Discovered 1914 in Susa.

Text: 5 GIN

Translation: '5 shekels'.

2.2.21 Sb 9146 (Pl. 13: 533)

Perfectly preserved duck-shaped weight made of hematite. It was first mentioned by Oppert (*cf.* DE CLERCQ 1903, 177) and later in a study by D. ARNAUD (1967, 162). Probably due to the small size of the duck, the inscription is engraved on the underside.

Text: 22,5 ŠE

Translation: '22.5 grain'.

2.2.22 Sb 9335 (Pl. 17: 610)

Duck-shaped weight made of basalt, with a three-line inscription engraved horizontally on the left side of the duck. Unfortunately, the inscription is so poorly preserved that it cannot be deciphered.

### 3 Some remarks on the arrangement of inscriptions on duck-shaped weights

The material studied here comprises 20 duck-shaped and eight sphendonoid weights. As the inscription on the sphendonoid weights are always engraved horizontally, only the inscriptions on duck-shaped weights will be discussed here. There

are two main arrangements, which can be found on 15 of the 20 duck-shaped weights.

Eight duck-shaped weights (no. 2.1-2.2, 2.4-2.5, 2.11-2.12, 2.20, 2.27) bear horizontal inscriptions engraved on the left flank of the duck. All of these weights were found in Susa.

Seven duck-shaped weights (no. 2.6-2.9, 2.13-2.14, 2.18) bear vertical inscriptions engraved on the right flank of the duck.

Two further objects (no. 2.16, 2.24) comprise vertical inscriptions on the left flank. Interestingly, these engravings are positioned in a different way than the other vertical inscriptions: in order to read the text, the duck has to be viewed from an angle, whereas in all other cases the duck must be looked at directly from the front.

Finally, there are three exceptional duck-shaped weights. No. 2.3 has a two-column inscription engraved horizontally, but on the right flank of the duck. Again, this inscription is positioned differently than the other horizontal engravings, and this particular inscriptions can only be read from behind the duck. No. 2.17 has a two-line inscription on each side of the beak. No. 2.25 is inscribed on the underside, probably due to its small size.

In conclusion, there are two dominant patterns in the arrangement of the weight inscriptions: 1) engraved horizontally on the left flank of the duck, and 2) engraved vertically on the right flank of the duck. It would be interesting to look if these patterns are also present amongst other inscribed weights from Susa and Mesopotamia, but this lies beyond the scope of this paper.