

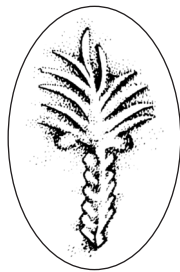
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L'archeologia del Vicino Oriente Antico ha conosciuto, negli ultimi anni, distruzioni e devastazioni repentine e inaudite, causa di danni irreversibili a siti e monumenti che erano rimasti quasi immutati per secoli se non millenni. Molte sono le iniziative e gli interventi che la comunità scientifica ha intrapreso in reazione a questa ondata annientatrice della storia e dell'umanità stessa. Tuttavia è evidente che siamo, di fatto, ancora impotenti e ininfluenti: nella maggior parte dei casi non siamo neppure in grado di quantificare a fondo l'entità di quanto è andato o andrà perduto per sempre.

Quest'anno la rivista *Mesopotamia* ha deciso di dedicare il suo cinquantesimo numero ad alcuni dei siti iraqeni che negli ultimi anni sono stati oggetto della furia devastatrice del Daesh: Nimrud, Ninive, Khorsabad e Hatra. Abbiamo dunque chiesto a colleghi di dedicare un loro studio ad argomenti che riguardassero proprio quei siti oggi danneggiati o distrutti. A loro va il ringraziamento della redazione per la sentita e numerosa partecipazione a questo numero speciale. Avremmo voluto celebrare in modo diverso i cinquant'anni della rivista, ma siamo convinti che la ricerca, lo studio e la trasmissione della conoscenza siano strumenti fondamentali nella lotta contro ogni forma di oscurantismo e barbarie.

\* \* \*

In the last years, the Middle-Eastern archaeological heritage experienced sudden and unprecedented attacks causing irreversible harm to sites and monuments that had survived almost unaltered through the centuries. The response of the scientific community to such a wave of destruction has resulted in many actions. Nonetheless, it is clear that we are still uninfluential and powerless: in the majority of cases, we are not even able to estimate the full extent of the losses.

The journal *Mesopotamia* has decided to dedicate its fiftieth issue to some of the Iraqi sites that have recently been the object of the destructive fury of Daesh: Nimrud, Nineveh, Khorsabad and Hatra. We asked colleagues and friends to dedicate a paper to these sites, now badly damaged or destroyed. On behalf of the whole editorial board, our thanks to all of them for contributing to this special issue. We wish we could celebrate the fifty years of the journal in a different way, but we strongly believe that research, study and transmission of knowledge are essential tools in the battle against all forms of obscurantism and barbarity.

CARLO LIPPOLIS

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LUCA PEYRONEL  
THE LION, THE DUCK AND THE SCORPION. ROYAL ASSYRIAN  
WEIGHTS FROM THE NORTH-WEST PALACE AT NIMRUD

*Introduction*

The North-West Palace of Nimrud/Kalhu has fallen prey to Daesh's destructive violence, revealed on the web on 11th April 2015 in a shocking video showing carved reliefs being smashed and palace structures bombed.<sup>1</sup> In few minutes humankind lost a large part of an extraordinary monument of Neo-Assyrian palace architecture, which boasted a research history lasting more than one and a half centuries.<sup>2</sup> English, Polish and Iraqi archaeologists excavated the palace, with the first exploration by H.A. Layard in 1845 and 1846,<sup>3</sup> and the building continually produced unexpected discoveries during its investigation. The British expedition led by M.E.L. Mallowan in 1950s and 1960s brought to light the northern quarter and the area around the *bitanu*, and discovered the 'banquet stela' erected by Ashurnasirpal II to commemorate the construction of his royal residence and the re-founding of Khalhu as a new capital;<sup>4</sup> the Polish team concentrated in the 'south wing' and studied the throne-room decoration;<sup>5</sup> by the mid-1970s onwards, restoration and excavation were carried out by Iraqi archeologists, bringing to light the southern part of the palace and the royal tombs of the Assyrian queens with their exceptional funerary assemblages.<sup>6</sup>

The history of the palace, founded by Ashurnasirpal II (883-859 BC), spans the entire Neo-Assyrian empire, until the final destruction of the town in 612 BC. It was completed by Ashuransirpal's son, Shalmaneser III (858-824 BC), who also built the arsenal-palace, and his successors continued to use the residence, although Adad-Nirari III (810-783 BC) and Tiglathpileser III (744-727 BC) built new palaces on the citadel.<sup>7</sup> However, it has been convincingly proposed that the building of Adad-Nirari was an extension of the NW Palace and the so-called 'Central Palace' of Tiglathpileser was never finished, the NW Palace remaining the 'primary palace' of those kings.<sup>8</sup> It maintained a central role under Sargon II (722-705 BC), who at the same time began the foundation of the new capital, Dur Sharrukin/Khorsabad. After him, the Assyrian kings of the 7th century BC moved their royal seat to the citadel of Nineveh (the 'Palace without rivals' of Sennacherib and the Northern Palace of Ashurbanipal).<sup>9</sup> However, the NW Palace of Nimrud continued to be used, its function probably shifting to that of an important administrative center. Nevertheless, the presence of cuneiform documents and

inscribed objects dated to Asarhaddon (680-669 BC) and Ashurbanipal (668-631 BC) (especially the texts found in ZT) witness the persistence of some traits linked to the control of the royal bureaucracy until the destruction in 612 BC. A final, latest occupation might date to the very end of the Assyrian period, with the re-adaptation of some structures by local residents returning to the town shortly after its fall, as may also be seen in other buildings in the town.

A characteristic of the material kept in the palace is the occurrence of archives and objects dating to different periods, from the 9th to the end of the 7th centuries BC. Although the sequence of building phases is still controversial, it has been underlined that the bulk of precious items (e.g. carved ivories, bronzes) found in the palace was collected under Sargon II, as a result of the western military campaign and the victory over Karkemish in 717 BC.<sup>10</sup> In particular, an inscription of Sargon found in room U indicates that the king used that room as a treasury for booty from the western military campaign. Thus Mallowan was wrong to think that the destruction and abandonment of the building might have occurred at the end of Sargon's reign; the destruction deposit is now firmly dated to a century later.

Among the economic and administrative devices found in the NW Palace, inscribed and/or marked balance weights stand out. Several specimens bear royal inscriptions identifying them as instruments pertaining to the imperial administration, guaranteed by the name of the king and by the specific mention of metrological values. Unfortunately the total number of weights discovered in the palace is unknown; several finds are unpublished and others poorly documented, preventing a comprehensive evaluation of the weighing procedures in the building through a contextual and

<sup>1</sup> DANTI *et alii* 2015a; 2015b.

<sup>2</sup> OATES, OATES 2001, 36-70; KERTAI 2015, 18-47, 84-85.

<sup>3</sup> LAYARD 1849b; cf. LARSEN 2001, 95-107.

<sup>4</sup> MALLOWAN 1966, 93-183.

<sup>5</sup> SOBOLESWKI 1981, 250-255.

<sup>6</sup> DAMERJI 1999; HUSSEIN, SULEIMAN 2000; HUSSEIN, KERTAI, ALTAWHEEL 2013.

<sup>7</sup> KERTAI 2011.

<sup>8</sup> IDEM 2013.

<sup>9</sup> RUSSELL 1991; MATTHIAE 1998, 59-180; KERTAI 2015.

<sup>10</sup> OATES, OATES 2001, 69.

distributive analysis. Notwithstanding the incomplete documentation, the weights from the palace give us important data on Assyrian metrology, and deserve a careful examination, constituting the largest group of Neo-Assyrian weights from a single public building. Only few exemplars (mostly uninscribed) have been unearthed at Dur Sharrukin/Khorsabad and virtually no weights have been published from Nineveh (see *infra*).

The weight system adopted by the Assyrians in the 1st millennium BC has been reconstructed on the basis of textual information, although it is not fully understood and several questions on the relevant pattern of operations are still debated.<sup>11</sup> Moreover, a specific study on Assyrian balance weights has not been yet undertaken and the lack of a well-documented catalogue of inscribed and marked specimens prevents an effective comparison with data from cuneiform documents.

The epigraphic evidence attests that the Assyrian system was sexagesimal, employing the same basic units known in Mesopotamia from the 3rd millennium onwards: the shekel (always written logographically, GÍN), the mina (MA.NA, abbr. MA, syllabic ma-né-e), and the talent (bi-lat and GÚ(.UN)). It is certain that the Mesopotamian mina of c. 504 g was used in Assyria, but a ‘heavier’ mina, which was double the traditional one (c. 1008 g) seems to have been introduced not later than the beginning of the 9th century, becoming the most widely used standard of the empire. The co-occurrence of these two minas is testified by several inscriptions on weights, while a clear distinction between a ‘heavy’ (*dannu*) and a ‘light’ (*qallu*) mina is rarely specified in the texts.<sup>12</sup> Sometimes the expression “x GÚ.UN ... ina danniti/qalissi”, that means ‘x talents by the heavy/light (standard)’, is recorded in administrative and epistolary texts.<sup>13</sup> Why Assyrians introduced the heavy standard and at the same time maintained a light mina is rather obscure and no practical reason can be adduced to explain it.

The written sources attest to a ‘mina of the king’, a ‘mina of the land’ and a ‘mina of the merchant’ (ša DAM.GĀR). What these qualifications might mean is a matter of discussion among scholars. The latter might be an expression referring to weights that were property of or assigned to merchants, and were used in the transaction recorded in the texts.<sup>14</sup> The ‘mina of the land’ is documented by Aramaic inscriptions on some Nimrud bronze lion-weights and on one duck-shaped bronze weight (Tab. 1, N1-4, 9, 13, 33; see *infra*). Therefore it might be a very specific expression that was employed on those weights, indicating the standard in common use in the regions under Assyrian control. It corresponds to the ‘mina of the king’ as indicated by epigraphs on the same weights<sup>15</sup> and it might have been a meaning similar to the ‘Assyrian mina’, which appears in some administrative docu-

ments.<sup>16</sup> Several epigraphs (in Akkadian and also in Aramaic) on weights mention the ‘mina of the king’ (see e.g. N1-5, 8, 10-11 in Aramaic and N2-6, 8-10, 13-14 in Akkadian), clear indications that the ponderal value was verified under the control of the royal bureaus on behalf of the king himself, thus giving a guarantee of the metrological system and its fixed units/values. It is employed without a distinction on weights referring to the ‘heavy’ and ‘light’ standards and is also mentioned in several texts.<sup>17</sup>

The mina of the king and the mina of the merchant are different designations and specifications used for silver and related to the same local Assyrian ponderal system, while the ‘mina of Karkemish’, which was frequently mentioned in written sources, might be considered a well-known ‘non-Assyrian’ standard employed by the administration for specific transactions.<sup>18</sup> According to Müller and Radner the diffusion in Assyria of this standard would be related to Sargon’s conquest of Karkemish and the arrival of the extraordinary booty of 2100 talents of silver.<sup>19</sup> The texts give no indication regarding its functioning nor any hints to help understand the relation with the Assyrian system. Some scholars, according to the principle of the ‘inertia’ of measures, considered it as the ‘western’ metrological system already defined in Northern Syria from the mid-3rd millennium BC, which was a sexagesimally-based system with the absolute weight of the mina at c. 470 g and a shekel of c. 7.8 g;<sup>20</sup> others proposed that it might indicate the existence of a ‘hybrid’ mina of c. 564 g, corresponding to 60 ‘Levantine’ shekels of c. 9.4 g.<sup>21</sup> The latter hypothesis was proposed taking into account the metrological interpretation of two duck-weights from Shyukh Fawqani/Burmarina and some weights from Nimrud (N18, 37, see *infra*), which would substantiate the existence of the hybrid mina during the Neo-Assyrian period.<sup>22</sup>

<sup>11</sup> POSTGATE 1976, 64-66; POWELL 1987-1990, 515-517; see also FALES 1996, 12-17 and RADNER 1999, 130-131.

<sup>12</sup> POSTGATE 1976, 65; FALES 1996, 14-15; a *dannu* mina is mentioned in administrative texts from Nineveh and some texts from Tell Halaf and Balawat refer to the light mina.

<sup>13</sup> E.g. FALES, POSTGATE 1992, nos 75, 79 for the ‘heavy’ talent, and POSTGATE 1973, 122 for a sealing from the Governor’s Palace at Nimrud, inscribed “1 talent by the light standard of the king”.

<sup>14</sup> POSTGATE 1976, 65.

<sup>15</sup> POWELL 1987-1990, 515; *contra* ZACCAGNINI 1999.

<sup>16</sup> E.g. FALES, POSTGATE 1992, n. 48.

<sup>17</sup> FALES 1996, 16; RADNER 1999, 130, Appendix 2.

<sup>18</sup> FALES 1996, 16-17; VARGYAS 1996; RADNER 1999, 130-131, Appendix 2, listing 101 attestation.

<sup>19</sup> MÜLLER 1997, 120; RADNER 1999, 131.

<sup>20</sup> VARGYAS 1996, 13-14.

<sup>21</sup> ZACCAGNINI 1999-2001, 40-43.

<sup>22</sup> IDEM 2005.



Fig. 1 - Plan of weights in the North-West Palace of Nimrud (after BARTL 2014, abb. 3).



Fig. 2 - Weights from the throne-room B (from left, N1-4, 8-9) (after CURTIS 2013, nos 533-535, 547, 540-541).



Fig. 3 - Weight N5 from the throne-room B (after KWASMAN, PARPOLA 1991, fig. 4c).

The lack of inscribed balance weights from well-dated Iron Age contexts in Northern Levant and especially from Karkemish makes difficult any well-founded statement on the matter. However some exemplars from Zincirli and Arslan Tash might be considered to be related to the traditional 'western' mina of c. 470 g.<sup>23</sup>

In general, the Assyrians adopted metrological designations in line with a long-lasting tradition in the Near East, with standard royal inscription for 'verified' and 'guaranteed' weights similar to those already defined in the Akkadian and Ur III periods.<sup>24</sup> Specification of property, materials and indication of 'foreign' systems in a way similar to what is known from the Mari texts dating to the 18th century BC are also attested in the epigraphic sources.<sup>25</sup>

Unit values (shekel, mina or talent) are mostly found in the Assyrian cuneiform texts without any specification, but they can be followed by their 'value' in silver (standards 'of the king', 'of the merchant', and 'of Karkemish'), copper (in one case relating to a mina 'of the mountain'), and gold (according to the standard 'of Babylon' and the mina 'of agate').<sup>26</sup>

#### *Chronology, context and distribution of weights in the North-West Palace*

The NW Palace is the building that has yielded the greatest number of 'royal' weights in the whole ancient

Near East, from the 3rd to 1st millennium BC. Only during the 3rd Dynasty of Ur at the end of the 3rd millennium BC was there a comparable situation: several exemplars found in the Ur *temenos* bear inscriptions of Neo-Sumerian rulers, although without a similar concentration in a single building.<sup>27</sup>

Thirty-nine balance weights have been retrieved in the palace according to the published documentation. The dating of sixteen specimens is assured by inscriptions reporting the name of the king (N2-6, 8-9, 11-15, 21-23, 34), four weights have epigraphs with metrological notation and indication of royal property without king's name (N1, 20, 38-39), seven bear only tally marks or metrological notation (N16-18, 25, 29, 33, 37), eleven specimens lack of written or metrological specification (N7, 24, 26-28, 30-32, 35-36), and one is a fragmentary specimen (N19).

The following kings are attested in the inscriptions: Ashurnasirpal II (N21-22), Ashur-dan III (N23), Tiglathpileser III (N6, 34), Shalmaneser III or – more probably – V (N2-5, 8-9, 11, 13-14), Sargon II (N15), and Sennacherib (N12).

Since several royal weights have been found in levels associated with the last building phase, they must have been kept and used by administrative bureaus of the palace until the final destruction of 612 BC. Moreover, weights dating to different kings were certainly employed together (as testified by the scale-set of the throne-room, see *infra*).

The material seems to be concentrated in few quarters of the palace (Fig. 1): the largest group comes from the reception wing and in particular from the passages leading to throne-room B (19); several weights were used in the administrative wing north of the *ba-*

<sup>23</sup> ARCHI, KLENGEL-BRANDT 1984, 246-249; ZACCAGNINI 1999-2001, 47-48.

<sup>24</sup> PEYRONEL 2012.

<sup>25</sup> ASCALONE, PEYRONEL 2000; CHAMBON 2011, 80-92.

<sup>26</sup> RADNER 1999, 130-132.

<sup>27</sup> PEYRONEL 2012, 18-21.



*banu* (8); Five specimens were found in rooms located south/southwest of the *bitanu*, and four were placed as grave goods in the queens' tombs II and III.

*The weights from throne-room B*

Sixteen important bronze lion weights (N1-16, Tab. 1; Figs. 2-3) were discovered by Layard in a group lying on the floor below the collapsed winged human-headed bull that originally flanked the passage between the throne-room C and room F (Entrance b).<sup>28</sup>

These weights immediately attracted the attention of Assyriologists, due to the fact that most of them bear bilingual inscriptions written in Aramaic and Akkadian. Layard published a table of the inscriptions (Layard 1853, page opposite 601) and their metrological significance was studied by several scholars at the beginning of the last century.<sup>29</sup> However, a complete catalogue of the weights appeared only in 1990, and more recently Curtis re-published the exemplars in a monograph on Assyrian metal objects.<sup>30</sup> The inscriptions and metrological notations have been treated in detail by Fales and Zaccagnini.<sup>31</sup>

The group consists of weights cast in bronze in the shape of crouching lions. Two main types can be distinguished: specimens with a bow handle attached to the lion's back (N1-4, 8-9, 13-14; the handle is broken and missing in N3, 8) and specimens without a handle (N5-7, 10-12, 15-16). Mitchell divided the weights into eight types/groups (A-H) according to stylistic and manufacturing features, with group A including all the weights with bow handles and groups B-H consisting of the exemplars without handles.<sup>32</sup>

Most of the lions have gaping jaws and mane depicted with incised leaf-like or tongue-like tufts; N5, 11-12, 15 differ from the others in having closed jaws and N15-16 have plain manes. All the exemplars except N6 have sheet bases, but it is unclear if the base is missing in N6 or whether it was originally manufactured without one. In two cases metal rings are attached to (N15, two rings) or encircle (N16) the body; N5 has a rectangular cavity in the bottom filled with lead. It is probable that the addition of rings and lead, as well as the composite parts of the statuettes (handle, body, base) were intended to check and adjust the mass of the piece during its manufacture. The Akkadian inscriptions are usually placed on the back, while the alphabetic inscriptions are on one side and below the base, if two different epigraphs are attested, or on the bottom if single.<sup>33</sup> All the weights also have metrological marks in the shape of parallel strokes, in most cases incised on the side opposite to the Aramaic inscription.

The cuneiform inscriptions always bear the same expression: Palace of + king's name + king of Assyria + metrological value + according to the standard of the king.

The following Assyrian rulers are attested in the

group: Tiglathpileser III (744-727 BC): N6; Shalmaneser V (726-722 BC): N2-5, 8-9, 11, 13-14; Sargon II (721-705 BC): N10, 15; Sennacherib (704-681 BC): N12.

Weights N1, 7, and 16 have no cuneiform inscriptions, but N1 might be stylistically ascribed to the Shalmaneser set. The latter king has been identified as Shalmaneser V, due to the fact that the cache is presumably composed of exemplars dated to kings who succeeded each other.<sup>34</sup> This is probable, but it cannot be shown that the king is not Shalmaneser III, who certainly used the NW Palace during his reign, taking also into account the presence of royal weights dated to Ashurnasirpal II and Ashur-Dan III in the building (see *infra*). Whatever the case, it is certain that the scale-set was formed of a main coherent group dated to Shalmaneser to which other exemplars have been added. Any specimens of Shalmaneser III would have been the earliest; if we accept the identification of Shalmaneser V, weight N6, dating to Tiglathpileser III, might have been included later on by Shalmaneser (or another king) to complete the set.

In the Shalmaneser group some exemplars bear two different alphabetic epigraphs: 'n minas of the king' and 'n minas by the standard of the land' (N1-4), while others have only the former (N5, 8, 10-11) or the latter (N9, 13). According to Fales the Aramaic inscription with the 'rq'-clause ('of the land') was made before the Akkadian one with its Aramaic counterpart 'zy mlk' ('of the king'): the latter two might have been added in Assyria by the royal scribes once the weights arrived at Nimrud, possibly as war-booty from the west, in order to confirm the value by stating its relation with the standard of the king.<sup>35</sup> This reconstruction is unlikely, as already pointed out by Zaccagnini: the weights are of Assyrian style and manufacture, their values refer to the Assyrian system, and no similar pieces are known from the Levant.<sup>36</sup> However, the lion shape might suggest a re-elaboration in the Assyrian milieu of a tradition introduced into Syria during the Middle Bronze Age, if not earlier (see *infra*). Zaccagnini also noted that the exemplars with the notation 'standard of the land' have bow handles, suggesting a deliberate distinction

<sup>28</sup> LAYARD 1849b, 128.

<sup>29</sup> Especially WEISSBACH 1907, 394-402; SOUTZO 1911, 30; THUREAU-DANGIN 1921.

<sup>30</sup> MITCHELL 1990; CURTIS 2013, 74-75, 173-175.

<sup>31</sup> FALES 1995; ZACCAGNINI 1999; see also POWELL 1987-1990, 515-516.

<sup>32</sup> MITCHELL 1990, 135.

<sup>33</sup> See FALES 1995 for the position of the epigraphs.

<sup>34</sup> MITCHELL 1990, 130; FALES 1995, 48.

<sup>35</sup> FALES 1995, 54.

<sup>36</sup> ZACCAGNINI 1999, 262-263.

Tab. 1 - Weights from the throne-room B – entrance b.

	Context	Shape/ Material	Inscription/Marks	Mass (g)	Ratio	Mina (h, l)	References (main)
<b>N1</b> BM 91220	B – gate b	Lion – Bronze	Aramaic 1: minas, 15 by (the standard) of the land Aramaic 2: fifteen minas of the king Marks: 15 strokes	14934,7	15 h m	995,6 (h)	LAYARD 1853, n. 1 WEISSBACH 1907, n. 60 MITCHELL 1990, n. 1 FALES 1995, n. 1 TADMOR, YAMADA 2011, 184-185 n. 1003 CURTIS 2013, n. 533
<b>N2</b> BM 91221	B – gate b	Lion – Bronze	Aramaic 1: minas: 5 by (the standard) of the land Aramaic 2: five (minas) of the king Akkadian: palace of Shalmaneser, king of Assyria; 5 minas of the king Marks: 5 strokes	5042,8	5 h m	1008,5 (h)	LAYARD 1853, n. 2 WEISSBACH 1907, n. 61 MITCHELL 1990, n. 2 FALES 1995, n. 2 TADMOR, YAMADA 2011, 171-172 n. 1 CURTIS 2013, n. 534
<b>N3</b> BM 91226	B – gate b	Lion – Bronze	Aramaic 1: minas: 3 by (the standard) of the land Aramaic 2: three minas of the king Akkadian: palace of Shalmaneser, king of Assyria; 3 minas of the king Marks: 3 strokes	2864,6+x Handle missing	3 h m	954,8+x (h)	LAYARD 1853, n. 3 WEISSBACH 190, n. 62 MITCHELL 1990, n. 3 FALES 1995, n. 3 TADMOR, YAMADA 2011, 172-173 n. 2 CURTIS 2013, n. 535
<b>N4</b> BM 91222	B – gate b	Lion – Bronze	Aramaic 1: minas: 2 by (the standard) of the land Aramaic 2: two minas of the king Akkadian: palace of Shalmaneser, king of Assyria; 2 minas of the king Marks: 2 strokes	1992,1	2 h m	996 (h)	LAYARD 1853, n. 4 WEISSBACH 1907, n. 63 MITCHELL 1990, n. 4 FALES 1995, n. 4 TADMOR, YAMADA 2011, 174 n. 3 CURTIS 2013, n. 537
<b>N5</b> BM 91223	B – gate b	Lion – Bronze	Aramaic: 2 minas of the king Akkadian: palace of Shalmaneser, king of Assyria; 2 minas of the king Marks: 2 strokes <del>secondo powell si tratta di una leonessa (1971: 253)</del>	1931,2+x Rectangular cavity filled with lead	2 h m	965,6+x (h)	LAYARD 1853, n. 5 WEISSBACH 1907, n. 64 MITCHELL 1990, n. 5 FALES 1995, n. 5 TADMOR, YAMADA 2011, 175 n. 4 CURTIS 2013, n. 536
<b>N6</b> BM 91224	B – gate b	Lion – Bronze	Akkadian: palace of Tiglath-pileser, king of Assyria; 2 minas of the king Marks: 2 strokes	946,5+x Base missing?	2 l m	473,2(+x?) (l)	LAYARD 1853, n. 6 WEISSBACH 1907, n. 65 MITCHELL 1990, n. 6 FALES 1995, n. 15 TADMOR, YAMADA 2011, 152-153 n. 64 CURTIS 2013, n. 538
<b>N7</b> BM 91225	B – gate b	Lion – Bronze	/	1036,5	1 h m	1036,5	LAYARD 1853, n. 7 WEISSBACH 1907, n. 66 MITCHELL 1990, n. 7 FALES 1995, n. 16 CURTIS 2013, n. 539

<b>N8</b> BM 91228	B – gate b	Lion – Bronze	Aramaic: mina of the king Akkadian: palace of Shalmaneser, king of Assyria; 1 mina of the king Marks: 1 strokes	954,5+x Handle missing	1 h m	954,5+x (h)	LAYARD 1853, n. 8 WEISSBACH 1907, n. 67 MITCHELL 1990, n. 8 FALES 1995, n. 6 TADMOR, YAMADA 2011, 177 n. 5 CURTIS 2013, n. 540
<b>N9</b> BM 91230	B – gate b	Lion – Bronze	Aramaic: two-thirds – the land Akkadian: palace of Shalmaneser, king of Assyria; 2/3 of a mina of the king Marks: X	665,7	2/3 h m	998,5 (h)	LAYARD 1853, n. 9 WEISSBACH 1907, n. 68 MITCHELL 1990, n. 9 FALES 1995, n. 7 TADMOR, YAMADA 2011, 177 n. 6 CURTIS 2013, n. 541
<b>N10</b> BM 91229	B – gate b	Lion – Bronze	Aramaic: mina of the king Akkadian: palace of Sargon, king of Assyria; 1 mina of the king Marks: 1 stroke	480,1	1 l m	480,1 (l)	LAYARD 1853, n. 10 WEISSBACH 1907, n. 69 MITCHELL 1990, n. 10 FALES 1995, n. 9 CURTIS 2013, n. 542
<b>N11</b> BM 91227	B – gate b	Lion – Bronze	Aramaic: mina of the king Akkadian: 1 mina. Palace of Shalmaneser, king Marks: 1 stroke	468,4	1 l m	468,4 (l)	LAYARD 1853, n. 11 WEISSBACH 1907, n. 69 MITCHELL 1990, n. 11 FALES 1995, n. 8 TADMOR, YAMADA 2011, 178-179 n. 7 CURTIS 2013, n. 543
<b>N12</b> BM 91231	B – gate b	Lion – Bronze	Aramaic: one half Akkadian: palace of Sennacherib, king of Assyria. 1/2 mina	240,5	1/2 l m	481 (l)	LAYARD 1853, n. 12 WEISSBACH 1907, n. 71 MITCHELL 1990, n. 12 FALES 1995, n. 10 CURTIS 2013, n. 545 GRAYSON, NOVOTNY 2014, 290 n. 211
<b>N13</b> BM 91232	B – gate b	Lion – Bronze	Aramaic: one-fourth – the land Akkadian: palace of Shalmaneser, king of Assyria; 1/4 (mina) of the king Marks: 4 strokes	236,7	1/4 h m	947 (h)	LAYARD 1853, n. 13 WEISSBACH 1907, n. 72 MITCHELL 1990, n. 13 FALES 1995, n. 11 TADMOR, YAMADA 2011, 179-180 n. 8 CURTIS 2013, n. 544
<b>N14</b> BM 91233	B – gate b	Lion – Bronze	Aramaic 1: one-fifth Aramaic 2: one-fifth ... Akkadian: palace of Shalmaneser, king of Assyria; 1/5 (mina) of the king Marks: 5 strokes	198,4	1/5 h m	992 (h)	LAYARD 1853, n. 14 WEISSBACH 1907, n. 73 MITCHELL 1990, n. 14 FALES 1995, n. 12 TADMOR, YAMADA 2011, 180-181 n. 9 CURTIS 2013, n. 546
<b>N15</b> BM 91234	B – gate b	Lion – Bronze	Aramaic: III shekels Akkadian: palace of Sargon, king of Assyria; ... Marks: 3 strokes	52,36	3 h s	17,45 (h) 1047 (h m?)	LAYARD 1853, n. 15 WEISSBACH 1907, n. 74 MITCHELL 1990, n. 15 FALES 1995, n. 13 CURTIS 2013, n. 547
<b>N16</b> BM 91235	B – gate b	Lion – Bronze	Aramaic: II shekels Marks: 2 strokes	55,9	2 h s	17,95 (h) 1077 (h m?)	LAYARD 1853, n. 16 WEISSBACH 1907, n. 75 MITCHELL 1990, n. 16 FALES 1995, n. 14 CURTIS 2013, n. 548

Tab. 2 - Weights from the throne-room B – entrance *d* and understairs.

	Context	Shape/Material	Inscription/Marks	Mass (g)	Ratio	Mina (h, l)	References (main)
<b>N17</b> BM 91442	B – gate <i>d</i>	Lion – Stone n.s.	Akkadian: 8-tú Marks: 8 strokes Incised figure of a lion	127,8	1/8	1022 (1 h m)	WEISSBACH 1907, n. 17 THUREAU-DANGIN 1921, 140, II:9 POWELL 1971, 259 CURTIS, READE 1995, 194 n. 206 NIEDERREITER 2008, I.b.9 AL-RAWI 2008, 130, fig. 15-k
<b>N18</b> BM 91438	B – gate <i>d</i>	Lion – Stone n.s.	Akkadian: 6-su Marks: 6 strokes Incised figure of a lion	189,3	1/6	1135 (2 hybrid m)	LAYARD 1849a, 10, pl. 95a:17 WEISSBACH 1907, n. 15 THUREAU-DANGIN 1921, 140, II:8 POWELL 1971, 258 POSTGATE 1976, 66 KWASMAN, PARPOLA 1991, XXXI, fig. 6b ZACCAGNINI 1999-2001, 40 NIEDERREITER 2008, I.b.8, fig. 4 AL-RAWI 2008, 130, fig. 15-j
<b>N19</b> MMP 392	west of C	Lion – Bronze	?	n.s.			ABU ES-SOOF 1963, 67 CURTIS 2013, n. 550

through that feature, but this correspondence remains inexplicable.

The scale-set of Shalmaneser is formed of exemplars related to the ‘heavy’ system: 15 (N1) - 5 (N2) - 3 (N3) - 2 (2 weights, N4-5) - 1 (N8) - 2/3 (N9) - 1/4 (N13) - 1/5 (N14) minas. The only weight related to the light mina is N11 (one mina). However, it fits well into the scale-set as 1/2 of the heavy standard, completing the set.

Later additions to the series are N15 (1/20) and N16 (1/30), respectively with inscriptions indicating 3 and 2 ‘heavy’ shekels. N7 is without inscriptions; it might have been inserted to duplicate the one-mina value, but it could also be considered a double light mina.

The weights undoubtedly related to the light standard comprise the following set: 2 (N6, Tiglathpileser) - 1 (2 exemplars, N10-11, Shalmaneser and Sargon) - 1/2 (N12, Sennacherib) mina.

The designation ‘mina of the king’ was therefore applied to both the light and heavy standards, although the Shalmaneser weights are in all but one case (N11) heavy minas, and later on the set was integrated, mainly by the addition of pieces of the ‘light’ standard (but see *infra* for their metrological interpretation).

Surprisingly, little attention has been given to the fact that another three weights have been found in throne-room B (Tab. 2).

N19 is a fragmentary bronze lion figurine (head and foreparts) discovered by the Iraqi archaeologist in the north-western corner of the stairwell that opens to the

west of the throne-room. It has been briefly mentioned in a preliminary report and correctly considered by Curtis as a balance weight of the same type of those discovered by Layard.<sup>37</sup> Although we cannot tell from this fragment if the piece was inscribed or marked, its presence opens the intriguing possibility that the understairs of the throne-room might have been the place where the scale-set was originally kept. In fact, it seems unlikely that the royal cache of weights was stored at the entrance to the room; more probably it was abandoned there at the time of the palace’s destruction. The possibility of a cache buried/hidden below the floor seems to be excluded by Layard’s statement that he discovered the weights in the debris covering the pavement.

N17 and 18 are two remarkable stone duck-weights found by Layard in the passage *d* (the material was wrongly considered terracotta by Layard) both bearing short metrological inscriptions and the schematic figure of a lion incised on one side.<sup>38</sup> They bear respectively the cuneiform notations ‘8-tú’ and ‘6-su’ inscribed on the flank and are also marked with eight and six parallel strokes on the side opposite the inscription (Figs. 4-5).

<sup>37</sup> ABU AL-SOOF 1963, 67; CURTIS 2013, 174.

<sup>38</sup> LAYARD 1849a, 10, pl. 95a:17; WEISSBACH 1907, nos 15, 17.

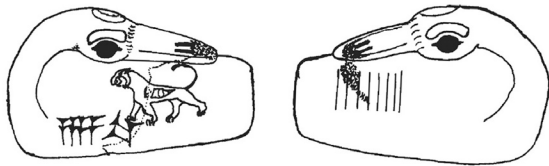
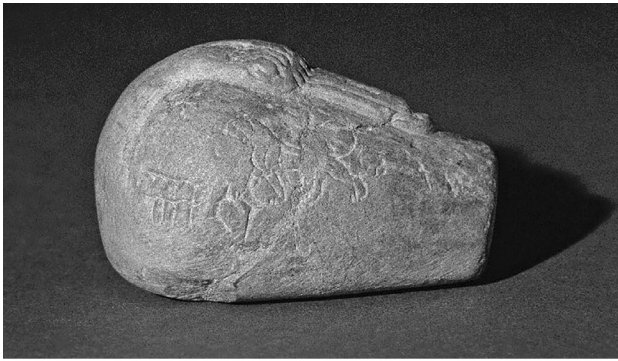


Fig. 4 - Weight N17 from the throne-room B (after AL-RAWI 2008, 130, fig. 15-k; CURTIS, READE 1995, 194 n. 206).

The mass of N17 is 127.8 g,<sup>39</sup> which might be considered as 1/8 of a 'heavy' mina of 1022 g; as an alternative explanation it could correspond to eight 'heavy' shekels of 15.97 g.

N18 weighs 189.3 g and its metrological interpretation is debated.<sup>40</sup> The absolute value of 1135 g, resulting from the fraction 6-su (= 1/6 of the mina) appears too high for the Assyrian mina and it has been suggested by Zaccagnini that the piece is one sixth of a double 'hybrid' mina of 567.5 g (reckoned at 60 shekels of c. 9.45 g).<sup>41</sup> Zaccagnini considers that unit to be the Karkemish standard so frequently mentioned in the Neo-Assyrian texts. A further two duck-weights from Nimrud (N33 and N37, see *infra*) bear the '6-su' notation, together with ponderal marks consisting of 8 incisions (on the flank in N33 and on the neck in N37). A blank space divides six parallel grooves from the other two, probably indicating that two different categories of metrological information are intended. The explanation by Al-Rawi that the two extra strokes indicate a shortfall of two shekel (1/6 of a mina less 2 shekels) is unlikely.<sup>42</sup> An alternative possibility is that the six grooves mirrored the 6-su cuneiform notation and the other mark means that the weight corresponds also to 20 shekels: N37 = inscription: 6-su; mark: 6+2 strokes; mass: 178.3 g = 1/6 of 1069.8 g (2 hybrid minas of 534.9 g); = 20 units/shekels of 8.9 g. The resulting mina of 534.9 g might be related to Zaccagnini's 'hybrid' mina (under-weight) consisting of 60 shekels of c. 8.9 g.

Unfortunately the precise mass of N33 is unknown; Al-Rawi estimated the weight as 150-180 g, which would not allow any sound metrological attribution.<sup>43</sup>

In my opinion, N17 and N18 might be part of the same scale-set to which the bronze lion weights

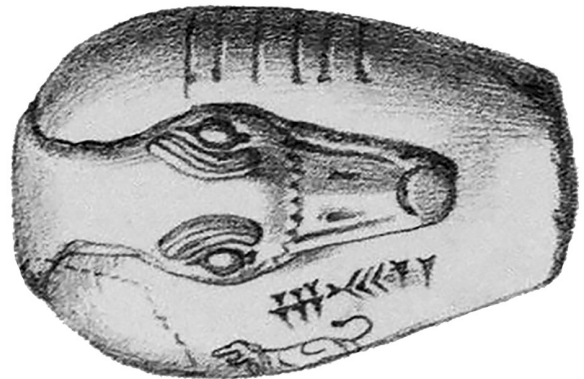


Fig. 5 - Weight N18 from the throne-room B (after LAYARD 1849a, pl. 95a:17; KWASMAN, PARPOLA 1991, fig. 6b).

belong, representing respectively 1/6 of a double 'hybrid' mina and 1/8 of the 'heavy' standard completing the series of values between N15 (1/10) and N16 (1/15). Moreover, the presence of the incised lion figure on both pieces is a clear reference to the other weights, besides being a precise sign of the official royal administration. Another duck-shaped exemplar found in the palace (N37; see *infra*) depicts the lion figure, allowing the identification of a specific group of royal Assyrian weights.

The metrological indications placed on the weights (inscription and/or marks) are unequivocal; however, the absolute value of the 'heavy' mina resulting from the ratio and masses (in the complete exemplars, without considering the pieces with handle missing)

<sup>39</sup> The weight is reported in KWASMAN, PARPOLA 1991, XXXI, fig. 6c, but wrongly associated with a photograph of N37, BM 91439.

<sup>40</sup> 192 g in AL-RAWI 2008, 130.

<sup>41</sup> ZACCAGNINI 1999-2001, 40; followed by ASCALONE 2011.

<sup>42</sup> AL-RAWI 2008, 130.

<sup>43</sup> *Ibidem*, 126.

Tab. 3 - Weights from the Northern Wing.

	Context	Shape/Material	Inscription/Marks	Mass (g)	Ratio	Mina (h, l)	References (main)
<b>N20</b> ND 2163 IM 56666	ZT 14	Lion – Bronze	Aramaic: belonging to the king (?)	250,7	1/2	501,4 (l)	MALLOWAN 1966, 109, 172 fig. 105, 326, 337 POWELL 1971, 256 CURTIS 2013, n. 549
<b>N21</b> ND 2505	ZT 14	Duck – Basalt	Akkadian: Ashurnasirpal 10 minas	n.s.			MALLOWAN 1966, 170, 338 OATES, OATES 2001, 46
<b>N22</b> ND 2502	ZT 14	Duck – Basalt	Akkadian: Palace of Ashurnasirpal, king of the universe, king of Assyria, son of Tukulti-Ninurta, king of the universe, king of Assyria: 10 minas	n.s.			MALLOWAN 1966, 170, 338 GRAYSON 1991, 358-359 n. 107
<b>N23</b> ND 2074	ZT 19	Duck – Basalt	Akkadian: ... king, ... son of Shalmaneser ..., son of Adad-nirari	n.s. (frgm)			MALLOWAN 1966, 170, 338
<b>N24</b> ND 2057	ZT 24	Duck – Limestone	/	509	1	509 (l)	MALLOWAN 1966, 338 KWASMAN, PARPOLA 1991, fig. 6a (ND 2507)
<b>N25</b> ND 3220	ZT 24	Duck – Limestone	Akkadian: 25 (?) minas	n.s.			MALLOWAN 1966, 338
<b>N26</b> ND 3221	ZT 24	Duck – Basalt	/	n.s.			MALLOWAN 1966, 338
<b>N27</b> ND 2056	ZT 24	Duck – Basalt	/	n.s.			MALLOWAN 1966, 338

shows a variation between 1077 g and 947 g, which is difficult to explain.

In this respect, Zaccagnini argued that also N15 and N16 could be related, like N18, to the 'hybrid' mina.<sup>44</sup>

The absolute value of the 'light' mina in those weights undoubtedly related to that unit (N6, 10-12) is comprised between 481 and 467.5 g. Surprisingly, this range fits quite well with the 'Western' or 'Levantine' mina of c. 470 g (according to Vargyas, the 'Karkemish' mina mentioned in the Assyrian texts)<sup>45</sup> and not with the Mesopotamian mina of. c. 504 g!

It seems quite strange that weights belonging to Assyrian and non-Assyrian standards (western and hybrid minas) would have been included in the same set, without any apparent possibility of distinction. Moreover, several of them bear the written qualification as king's weights. If the metrological attribution is correct, that means the expression was intended only as 'property of' the palace bureau – and not as an indication of the Assyrian standard/system.

#### *The weights from the Northern Wing*

The Northern Wing of the palace is characterized by administrative rooms with scribal offices and archives, storerooms and the apartments of high officials, from which groups of commercial, administrative and epistolary documents of different periods have been retrieved.<sup>46</sup> It seems that this part of the building

housed at least two main government units, the north-west, which probably ceased to function at the end of Sargon's reign, and the north-east, which remained in use until the final destruction of the palace.<sup>47</sup> Their economic and administrative function is confirmed by the presence of balance weights.

Eight exemplars have been published or briefly described in the excavation reports (N20-28).<sup>48</sup> An official scale-set was certainly kept in the north-east unit, in room ZT 14 (N20-22) and ZT 24 (N24-27). The isolated specimen ZT 19 (N23) indicates that weights were used also in the westernmost part of the quarter (Tab. 3).

Unfortunately, only two specimens have been adequately described (N20 and N24) (Figs. 6-7). Four weights bear cuneiform inscriptions (N21-23, 25) and N20, a small half-mina lion-shaped bronze weight (250.7 g = 1/2 'light' mina of 501.4 g), has a West Semitic epigraph incised under the base, probably the *lmlk* qualification 'belonging to the king' (Fig. 6).<sup>49</sup>

<sup>44</sup> ZACCAGNINI 1999-2001.

<sup>45</sup> VARGYAS 1996.

<sup>46</sup> PARKER 1954; IDEM, 1961; SAGGS 2001.

<sup>47</sup> OATES, OATES 2001, 43-47.

<sup>48</sup> MALLOWAN 1966, 337-338.

<sup>49</sup> MALLOWAN 1966, 109, while CURTIS 2013, 173 states that the inscription is 'not yet deciphered'.



Fig. 6 - Weight N20 from room ZT 14 (after MALLOWAN 1966, fig. 105).

N22-23 are royal weights of Ashurnasirpal II (884-859 BC) and the oldest inscribed weights found in the palace, showing that this kind of official measure, guaranteed by the king through the inscription, was adopted in the palace immediately after its foundation. Both are basalt duck weights of ten minas, although the lack of information on masses and dimensions prevents any correlation with the 'heavy' or 'light' standard.

N23 is dated to the reign of Ashur-Dan III (772-755 BC)<sup>50</sup> and N26 bears the metrological notation '25 (?) minas'.

Notwithstanding the scanty information available, these weights testify to the commercial and economic procedures performed inside the quarter, which would have been a key sector for the management of economic affairs and trade administration.

#### *The weights from the Southern Quarter*

Five weights were found scattered in different rooms of the south-western quarter of the palace; four are bronze specimens (N28-31) published in the catalogue by Curtis<sup>51</sup> and one is a duck stone exemplar men-

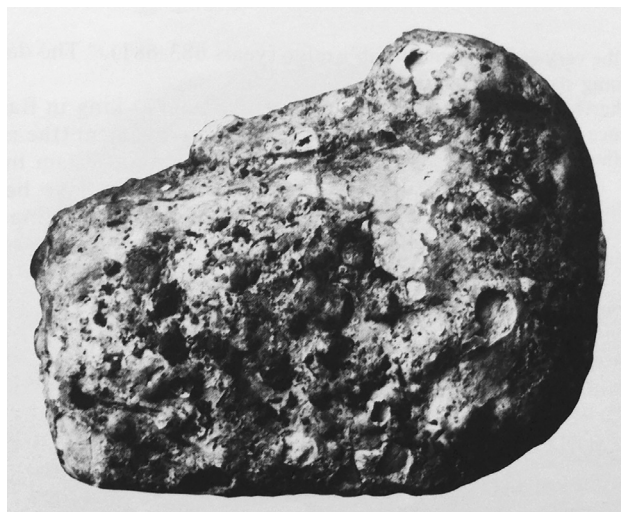


Fig. 7 - Weight N24 from room ZT 24 (after KWASMAN, PARPOLA 1991, fig. 6a).

tioned in a preliminary report of the Iraqi excavations without any description (N32).<sup>52</sup> The southern part of the palace, located just south of the *bitanu* (Court Y), included corridors Z and P and was devoted to domestic and residential functions (the so-called *Harem*). It is characterized by typical domestic suites arranged around courtyards, including a sumptuous apartment centered on court AJ and interpreted as the residence of the queen.<sup>53</sup> However, administrative activities might have been occasionally performed in some rooms, as revealed by cuneiform tablets, sealings and weights.

N28-29 are spherical bronze weights with flattened bases, one of which (N29) bears an incised mark 'X' (= 1/2 of 85.4 g) and corresponds to 5 'Mesopotamian' shekels of 8.54 g. Similar exemplars have been found in other buildings at Nimrud and it is possible that the type was widely used for precision weighing (Tab. 4).<sup>54</sup>

Two remarkable bronze cubes inlaid with the golden figure of a winged scarab have been found in room AB in the south-western domestic quarter (Fig. 8).<sup>55</sup> This chamber (the so-called 'bronze room') was partially dug by Layard, who discovered a treasure of 12 bronze cauldrons and more than one hundred and fifty bronze bowls,<sup>56</sup> and re-excavated by Mallowan,

<sup>50</sup> MALLOWAN 1966, 338, inscription not mentioned in GRAYSON 1996.

<sup>51</sup> CURTIS 2013, nos 562-563, 566-567.

<sup>52</sup> HUSSEIN *et alii* 2013, 92.

<sup>53</sup> OATES, OATES 2001, 60-68, fig. 33.

<sup>54</sup> CURTIS 2013, nos 556-561.

<sup>55</sup> LAYARD 1853, 196.

<sup>56</sup> BARNETT 1974; ONNIS 2009.

Tab. 4 - Weights from the Southern Quarter.

	Context	Shape/Material	Inscription/Marks	Mass (g)	Ratio	Mina (h, l)	References (main)
<b>N28</b> ND n.s.	V	Sphere – Bronze	/	21,8	2+1/2?	8,72	CURTIS 2013, n. 562
<b>N29</b> ND n.s.	AK	Sphere – Bronze	Marks: X	42,7	5	8,54	CURTIS 2013, n. 563
<b>N30</b> BM 119433	AB	Cube – Bronze	Gold inlayed figure of a winged scarab	243,8 (Curtis) 265,7 (BM)	1/2	487,6	LAYARD 1853, 196 THUREAU-DANGIN 1921, 141, III:2 CURTIS 2013, n. 566
<b>N31</b> BM 119434	AB	Cube – Bronze	Gold inlayed figure of a winged scarab	160,9 (Curtis) 174,9 (BM)	1/3	482,7	LAYARD 1853, 196 THUREAU-DANGIN 1921, 141, III:4 CURTIS, READE 1995, 195 n. 208 CURTIS 2013, n. 567
<b>N32</b> n.s.	60	Duck – Stone n.s.	/	n.s.			HUSSEIN <i>et alii</i> 2013, 92



Fig. 8 - Weights N30-31 from room AB (after CURTIS 2013, nos 566-567).

who also found interesting ivory and wooden writing-boards lying at the bottom of the room's well.<sup>57</sup>

The exemplars do not closely resemble any Egyptian or Southern Levant balance weights and it is difficult to deduce their original place of manufacture, which was unlikely to have been Assyria. It has been suggested that valuable bronze objects were stored in the room as the result of tribute or booty coming from the west and it is also probable that the weights reached Nimrud from somewhere in the southern Levant.

The winged flying scarab figure (with two or four outstretched wings) is an elaboration of the Egyptian symbol of the celestial beetle pushing the solar ball across the heavens. The winged scarab motif, and specifically the four-winged version, has been considered a royal symbol of the king of Israel or Judah, since it occurs on seal and *lmlk* jar sealings from several

Israelite sites, and a first elaboration in Phoenicia has been postulated.<sup>58</sup>

The symbol of the winged scarab appears more or less simultaneously in Egypt (especially on scarab amulets) and the Levant during the 1st millennium BC, but the weights from Nimrud are the only examples of this figure on this class of item.

With regard to the metrological value of the weights, discrepancies in the published masses prevents their precise attribution to a weight system.<sup>59</sup> However, it

<sup>57</sup> MALLOWAN 1954, 94-110.

<sup>58</sup> TUSHINGHAM 1970; YADIN 1967.

<sup>59</sup> N30 is 243.8 g according to CURTIS 2013, no. 566 and 265.7 g according to the British Museum catalogue sheet; N31 is 160.9 g according to CURTIS 2013, no. 567 and 174.9 g according to CURTIS, READE 1995, no. 208 and the British Museum.



Tab. 5 - Weights from the Royal Tombs.

	Context	Shape/Material	Inscription/Marks	Mass (g)	Ratio	Mina (h, l)	References (main)
<b>N33</b> ND 1989/158 IM 115432	Tomb II	Duck – Bronze	Aramaic: one sixth (of the mina) of the land Akkadian: 6-su = 1/6 Marks: 8 strokes Incised figure of a scorpion	150-180	1/6	900-1080	HUSSEIN, SULEIMAN 2000, 288, pl. 81 AL-RAWI 2008, 126-130, fig. 15-i HUSSEIN 2016, 22-23, 100, pl. 82d-f
<b>N34</b> IM 124998? IM 116000?	Tomb III	Duck – Limestone	Akkadian: Palace of Tiglathpileser (III), great king, mighty king, king of the world, king of Assyria. 15 minas Marks: 15 strokes Incised figure of a lion	n.s.			FADHIL 1990, 480, pls. 42-43 HUSSEIN, SULEIMAN 2000, 390, fig. 175 AL-RAWI 2008, 131, fig. 15-m TADMOR, YAMADA 2011, 151-152, n. 62 HUSSEIN 2016, 27, 151, pl. 94a
<b>N35</b> IM 124998? IM 116000?	Tomb III	Duck – Limestone	/	n.s.			HUSSEIN, SULEIMAN 2000, 390, fig. 175 HUSSEIN 2016, 151
<b>N36</b> ND 1989/267 IM 115568	Tomb III	Duck – Carnelian	/	n.s.			HUSSEIN, SULEIMAN 2000, 390, fig. 175 HUSSEIN 2016, 32, 116, pl. 127i



Fig. 9 - Weight N33 (after AL-RAWI 2008, fig. 15-i, HUSSEIN 2016, pl. 82d).

seems probable that N30 is 1/2 of a mina (487.6 g or 531.4 g) and N31 is 1/3 of a mina (482.7 g or 524.7 g).<sup>60</sup>

#### *The weights from the Royal Tombs*

The Iraqi archaeologists discovered in 1988-1989 three royal tombs of Assyrian queens located under rooms DD, 49 and 57, respectively Tomb I, II and III, and another robbed tomb (IV, without skeletons

or valuable goods) beneath room 72 in 1990.<sup>61</sup> Among hundreds of precious objects, four weights were present (N33 in Tomb II and N34-36 in Tomb III).

N33 came from Tomb II, in which inscriptions of queens Yabâ (the palace woman of Tiglath-pileser III), Banîtu (the palace woman of Shalmaneser V), and Ataliyâ (the palace woman of Sargon II) have been identified (Tab. 5).<sup>62</sup> It is an important bronze duck weight bearing a bilinguistic Aramaic/Akkadian inscription with indication of its metrological value (in Aramaic '1/6 [of the mina] of the land' and in Akkadian '6-su') and marked with six and two parallel strokes, separated by a short blank space (Fig. 9). The weight is also incised with the figure of a scorpion, a symbol clearly associated with fertility and related to the Assyrian queen's royal authority. N33 is the only known weight engraved with this symbol, which is seen on a variety of items at Nimrud (seal and sealings, precious stone vessels, mirror handles). It has been reliably suggested that the symbol is linked with the Neo-Assyrian queen's administration, reflecting her royal power in the same way that the lion represents that of the king himself.<sup>63</sup>

The range of 150-170 g, given for its mass in the

<sup>60</sup> CURTIS 2013, 167, 1/2 and 1/3 of an underweight 'low' Mesopotamian mina.

<sup>61</sup> OATES, OATES 2001, 79-90; DAMERJI 1999; HUSSEIN, SULEIMAN 2000; WICKS 2015, 4-16; HUSSEIN 2016.

<sup>62</sup> DALLEY 2008; PINNOCK 2007-2008.

<sup>63</sup> MELVILLE 2004, 50-51; NIEDERREITER 2008, 59-62.

<sup>64</sup> AL-RAWI 2008, 129.



Fig. 10 - Weight N34 (after HUSSEIN 2016, pl. 94a).

publication, makes difficult a precise metrological analysis (see *supra*, for the 6-su weights discovered in the palace).<sup>64</sup> Nonetheless its unique features – such as the bilingual inscription, the combination of material and shape, the scorpion emblem, and the funerary context – make this piece an *unicum* of extraordinary importance. It might be related to one of the three queens associated with the tomb and it testifies to the symbolic importance of the weight balance that was shared by the king and the queen in the Assyrian realm.

Three other weights (N34-36, whose masses are not given in the excavation report) were included in the grave goods of Tomb III, an under-floor vaulted tomb beneath room 57, built for Ashurnasirpal's wife Mullissu-Mukannishat-Ninua.<sup>65</sup> The queen was originally buried in a sandstone sarcophagus in the main chamber, which however contained few objects and no human bones, while three bronze bathtub coffins were displaced in the antechamber. N36, a small chalcedony duck-weight inlaid with gold (the only semi-precious stone weight with gold discovered in so far in the ancient Near East), was found in bronze coffin 1,<sup>66</sup> while N34-35 cannot be precisely located inside the tomb on the basis of the published information. Both are limestone duck-shaped weights, the former bearing a cuneiform inscription indicating its value<sup>67</sup> (15 minas) and attribution to the palace of Tiglathpileser III (Fig. 10).<sup>68</sup>

The presence of weights and balances in grave assemblages is quite common in the ancient Near East from the 3rd to the 1st millennium BC (Peyronel 2011). In most of the cases a scale-set of small stone specimens was placed in the burials, possibly testifying to the relation of the dead with trade or craft activities. As far as I know the exemplars from Nimrud are the only ones found in a royal tomb, and N34 is the only weight with a royal inscription from a funerary context.

### Conclusions

The North-West Palace of Nimrud, with its 36 weights found in situ in different rooms, is a matchless context for the study of Neo-Assyrian metrology. It is very probable that many more weights were discovered in the building, especially during the pioneering exploration of Layard, and several exemplars retrieved during English and Iraqi excavations remain unpublished. A future reconnaissance of the museum collections (first of all at the Iraq Museum) would certainly increase the corpus. Three other inscribed stone duck-shaped weights (N37-39) were found by Layard, but the available information allows only a generic association with the palace.

N37 is a 6-su weight already discussed above, and N38-39, two stone ('greenstone' according to Layard) ducks, bearing royal inscriptions with the value indicated as 30 minas (Fig. 11; Tab. 6).<sup>69</sup>

It is evident that only the more attractive inscribed exemplars have been published or noticed in the excavation reports and the apparent lack in the palace of stone weights without numerical signs or epigraphs is due to this unbalanced documentation. The same can be suggested for other public buildings excavated in the acropolis of Nimrud and for the arsenal-palace of Shalmaneser III. A scale-set composed of marked and inscribed weights has been found in room SE 11 of the latter building, although the scanty information available makes impossible any founded metrological evaluation.<sup>70</sup> It is a group of ten stone duck-shaped weights (seven from the understairs) and one stone lion weight inscribed with the name of Shalmaneser (ND 7879). Unfortunately, only one specimen (ND 7888) is illustrated, with indication of its mass: a limestone duck weight with a severely worn surface

<sup>65</sup> HUSSEIN, SULEIMAN 2000, 390, fig. 195.

<sup>66</sup> WICKS 2015, fig. 5.

<sup>67</sup> Weight N35 was found in the tomb but not associated to the funerary assemblage and it might be originally kept in Room 57: HUSSEIN 2016, 151.

<sup>68</sup> FADHIL 1990, 480; AL-RAWI 2008: 131 text 8; TADMOR, YAMADA 2011, 151-152 no. 62.

<sup>69</sup> LAYARD 1849a, 10; 1853, 600, with old and imprecise copies of the inscriptions never re-published.

<sup>70</sup> MALLOWAN 1966, 420-421; OATES, OATES 2001, 164.

Tab. 6 - Weights from unspecified contexts.

	Context	Shape/Material	Inscription/Marks	Mass (g)	Ratio	Mina (h, l)	References (main)
N37 BM 91439	n.s.	Duck – Stone	Akkadian: unreadable signs + 6-su Marks: 8 strokes on the neck (6+2)	178,3	1/6	1069,8 (2 hyb m?)	KWASMAN, PARPOLA 1991, fig. 6c (figure) CURTIS, READE 1995, 194 n. 205 AL-RAWI 2008, 130, fig. 15-1
N38 n.s.	n.s.	Duck – Stone	Akkadian: '30 minas verified, palace of ...'	n.s.			LAYARD 1853, 600
N39 IM 124998? IM 116000?	n.s.	Duck – Stone	Akkadian: 2 righe: '30 minas verified ...'	n.s.			LAYARD 1849a, 10, pl. 95a: n. 11 LAYARD 1851, pl. 83: f

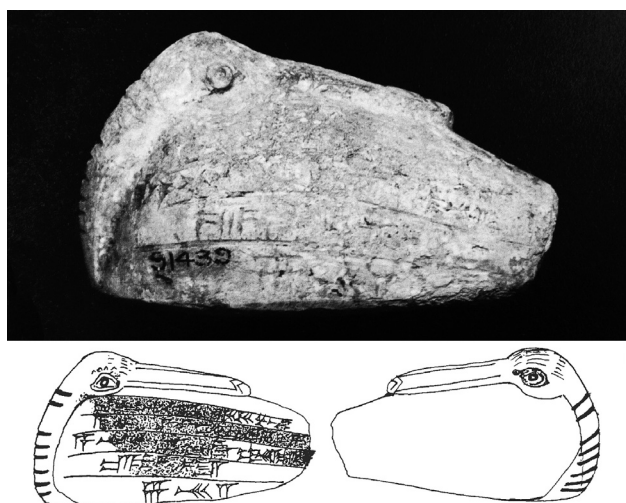


Fig. 11 - Weight N37 (after AL-RAWI 2008, fig. 15-1; CURTIS, READE 1995, 194 n. 205).

on which eight parallel strokes are visible (originally nine or ten), corresponding to ten (?) 'heavy' minas (mass 9820 g).<sup>71</sup>

The presence of several weights in the understairs of a unit related to the residence of the *rab ekalli* suggests that the high official would have been responsible for the control of economic affairs and that the weighing equipment was probably under his direct control.<sup>72</sup> It is also interesting that the use of understairs to keep weights could be suggested also for the bronze lions and the two ducks from the throne-room of the North-West Palace (possibly stored in the entrance-vestibule of the staircase, see *supra*).

A marked and inscribed hematite duck weight was discovered in the so-called antecella of Tashmetum (room NT. V 6) of the palace of Adad-Nirari III.<sup>73</sup> The exemplar is fragmentary and its mass of 4009+x g could correspond to five 'heavy' minas. The incomplete Akkadian cuneiform epigraph ('5 minas, verified, of šadānu-stone, of Nergal-ilāya, the turtanu and commander-in-chief ... from the mountain of Media ... silver ... house of Nineveh ... I put') is of great importance since it reports the name of a *turtanu* dat-

able to 809 or 818 BC, confirming that the introduction of the 'Assyrian' heavy system is at least as old as the 9th cent. BC.<sup>74</sup> The exemplar also shows marks on the neck, in a way identical with N37, and bears a long epigraph containing a very rare indication of the material from which it is made (šadānu-stone = hematite/magnetite/goethite).

In the catalogue of Assyrian bronze items by Curtis several bronze weights from Nimrud are included after a thorough review of the museum material which indicates a variety of unusual types (spherical, biconical, pyramidal).<sup>75</sup> The exemplars identified in the volume clearly demonstrate how limited the selection of weights mentioned in the excavation reports is. It is therefore unlikely that sphendonoids in hematite, which are the most common Mesopotamian weights, are completely lacking in the official scale-sets of the royal bureaux.

A similar situation can be observed also at Khorsabad and especially at Nineveh, again involving the incomplete recording of small finds during the old excavations.

At Khorsabad, beside an exceptional bronze lion weight of 60303 g (a double talent of a 'heavy' mina of 954.8+x g), discovered by Botta in the passage (A) opening on the northeastern side of Courtyard I of the Sargon's Royal Palace,<sup>76</sup> few exemplars have been briefly described in the catalogue of objects by the Oriental Institute Expedition.<sup>77</sup> They were scattered in different buildings and testify to the use of unin-

<sup>71</sup> MALLOWAN 1966, 420-421, fig. 350; KWASMAN, PARPOLA 1991, fig. 5a.

<sup>72</sup> OATES, OATES 2001, 164-165.

<sup>73</sup> GEORGE 1979, 134 n. 47, pl. 17.

<sup>74</sup> POWELL 1987-1990, 515.

<sup>75</sup> CURTIS 2013.

<sup>76</sup> LAYARD 1849, 50, II, pl. 151; WEISSBACH 1907, n. 59 and recently CURTIS 2013, no 551.

<sup>77</sup> LOUD, ALTMAN 1938, 99, pl. 61; also CURTIS 2013, nos 552-555 for the bronze weights.

scribed hematite, semiprecious stone (agate, carnelian) and bronze weights of small dimensions.<sup>78</sup> A limestone duck from the arsenal-palace was retrieved in room 21, the understairs of the throne-room staircase, suggesting that the custom of keeping the ponderal tools in the space at the bottom of the staircases was followed also at Khorsabad.<sup>79</sup> Finally, a group of three specimens in courtyard 54 of Residence K might be indicative of a scale-set composed of stone ducks.<sup>80</sup>

Virtually nothing is known about balance weights from the 7th century capital of Nineveh.<sup>81</sup> In particular, the lack of information on exemplars found in the great residences of Sennacherib and Ashurbanipal represents a major obstacle for the evaluation of Assyrian metrology during the apogee of the empire by means of material evidence.

On the other hand, documentation from Ashur is more substantial,<sup>82</sup> but the long settlement history of the Assyrian holy city and the lack of contextual data prevent any secure chronological attribution for most of the exemplars.<sup>83</sup> A large number of weights might be Old and especially Middle Assyrian, considering the excavation of buildings and graves dating especially to the latter period, but probably several exemplars should be attributed to the Neo-Assyrian phase. The presence of inscribed royal weights is testified by a remarkable stone duck weight bearing the inscription 'Palace of Tiglathpileser (III), king of the world, king of Assyria' plus 3 vertical strokes (2775 g = 3 minas of 925 g).<sup>84</sup>

The diffusion of royal weights outside the core of the empire since the beginning of the 9th century BC is demonstrated by a limestone duck weight of 2470 g (= 5 'light' minas of 494 g) from Tell al-Hamidiya.<sup>85</sup> It bears a cuneiform inscription of Tukulti-Ninurta II (890-884 BC): '5 minas, palace of Tukulti-Ninurta, the mighty king, king of the universe, king of Assyria, son of (Adad-Nirari), mighty king, king of universe, king of Assyria, son of Ashur-Dan, the mighty king, king of the universe, king of Assyria'. Another fragmentary duck-shaped weight without provenance from the Mariaud de Serres collection is inscribed with a similar epigraph, reporting the titles and forerunners of Tukulti-Ninurta II ('Palace of Tukulti-Ninurta, (king of the universe, king of Assyria), son of Adad-Ninari, king of the universe, king of Assyria, son of Ashur-Dan, king of the universe, king of Assyria: 2/3 of a mina ... stone...').<sup>86</sup>

Some stone duck weights without inscription have been found in other provincial centers, such as at Ziyaret Tepe, where a talent-weight of 30 kg comes from Room 46 in Building 2 and more exemplars are mentioned in the excavation reports.<sup>87</sup> Two remarkable specimens from Tell Shiukh Fawqani published and discussed by C. Zaccagnini might be related to the 'hybrid mina' of 60 shekels of c. 9.4 g (TSF n. 2 of 570 g = 1 mina of 570 g = 60 shekels of 9.5 g; TSF n. 4 of 4495 g = 8 minas of 561,8 g = 60 shekels of 9.36 g).<sup>88</sup>

The evidence from Nimrud is thus far the only that can be used to reconstruct the metrological activities conducted in a royal capital from the 9th century BC to the end of the Assyrian period.

Notwithstanding the incompleteness of the available data, this analysis of the distribution, morphology of, and epigraphic and metrological information borne by, the exemplars from the palace allows some interesting conclusions to be drawn.

Royal weights were kept in specific quarters of the building, with a significant concentration in the Northern Wing and in the Throne-Room; their use seems to extend until the very final phase of the palace, when it ceased to be a royal residence, showing that the building always retained some specific administrative function linked to the crown. In particular, the scale-set of the reception unit with the exceptional bronze weights bearing Assyro-Aramaic bilingual inscriptions dating from Tiglathpileser to Sennacherib – proof that metrological operations were performed in the place where the king manifested his power, and probably embedded in strong symbolic meanings. The room never lost this administrative function.

The metrological material furnished with inscriptions and marks points to the contemporary use of the 'heavy' Assyrian mina and the traditional Mesopotamian 'light' mina, without a clear-cut distinction (we have bronze lions, stone ducks and royal exemplars related to both systems). Moreover, some specimens have masses compatible with the Western mina of c. 470 g (the mina of Karkemish cited in the texts?) and with the 'hybrid' unit.

The reason why Assyria introduced as early as the early 9th century (although Middle Assyrian metrology is still poorly known) the 'heavy' system cannot be easily explained; what it is certain is that the royal administration employed a scale-set composed of weights of both minas without any problem, since one system is the double of the other.

<sup>78</sup> Residence K: LOUD, ALTMAN 1938, nos 178, 181-183, 186-187; Residence Z: nos 175, 184; Residence M: no 179; Palace of Sargon: nos 176-177; Palace F: nos 180, 185.

<sup>79</sup> Palace F; LOUD, ALTMAN 1938, no 185.

<sup>80</sup> LOUD, ALTMAN 1938, nos 183, 186-187.

<sup>81</sup> A basalt duck weight of 969.7 g illustrated in KWASMAN, PARPOLA 1991, fig. 5b, is said to have been found at Nineveh, and the same generic provenance is reported for another stone duck weighing 1998 g: UNGER 1918, n. 163.

<sup>82</sup> 54 proper weights kept in the Istanbul Archaeological Museum: UNGER 1918; ZEYREK, KIZILTAN 2005.

<sup>83</sup> See, however, ASCALONE, PEYRONEL 2006, 423-430 for a metrological analysis of the corpus.

<sup>84</sup> TADMOR, YAMADA 2011, 150-151 n. 61.

<sup>85</sup> WÄFLER 2003, 158, abb. 83.

<sup>86</sup> GRÉGOIRE 1981, 15, 28 n. 57, pl. 17 n. 57; GRAYSON 1991, 181-182 n. 10.

<sup>87</sup> MATNEY *et alii* 2011, 84, 86-87, fig. 13a; MACGINNIS, MONROE 2013-14, 54.

<sup>88</sup> ZACCAGNINI 1999-2001, 39; IDEM 2005, 581-583, nos 2, 4.

Royal and marked weights can be divided into two main classes: bronze lions and stone ducks, although a combination of the two types is attested in one case (N33, a bronze duck, the reverse is not documented). Although the second of these has a long tradition in Mesopotamia, with the earliest examples dating to the Early Dynastic II-III period,<sup>89</sup> the lion-shape is directly related to the prerogatives of the Assyrian king, although its origin (as a weight shape) cannot be ascribed to the Assyrian cultural milieu. In fact, the presence of a lion hematite weight from the Western Palace (probably the crown's prince residence) of Ebla and a lion-head hematite weight from the royal palace of Alalakh VII suggest that the type was developed in the Northern Levant during the first centuries of the 2nd millennium BC,<sup>90</sup> becoming popular during the Late Bronze Age, when bronze lions and lionesses, together with bull-shaped weights, are attested at Ugarit and in the Uluburun shipwreck.<sup>91</sup> It is therefore probable that the shape was adopted at a certain period (the beginning of the 1st millennium?) by the Assyrian administration, and that the palace metal workshop manufactured bronze lion weights of elaborate Assyrian style.<sup>92</sup> The metal lion-weight with or without loop-handle become the distinctive metrological instrument of Assyrian power, probably used in operations carried out by or on behalf of the king.

It is more problematic to establish if the rare exemplars of metal lion-shaped weights discovered in the Southern Levant might be considered 'provincial' imitations of the royal Assyrian ones or, alternatively, a development of the local Syro-Palestinian tradition begun in the Middle Bronze Age.<sup>93</sup>

The two stone duck weights with a lion figure incised on the body discovered in the throne-room of the North-West Palace have been considered as a part of the royal scale-set, suggesting also that the figure was conceived as a sign of royal property *per se*. The duck weight incised with the figure of a scorpion from Tomb II shows that exemplars with a symbolic connotation of the queen's reign were also produced and might have been used by the palace administration for purposes related to the queen's prerogatives.

The Assyrian tradition of royal metal weights in the shape of recumbent lions survived beyond the end of the empire, being adopted by the Persian empire – in accordance with the strong impact of Assyrian art in general on Persian sovereigns. A cast bronze lion discovered at Abydos in the Dardanelles (BM E.32625) dated to the 5th century BC is inscribed in Aramaic 'correct for (weighing) staters of silver'.<sup>94</sup> The mass of 31.808 g roughly corresponds to one Mesopotamian talent, and the presence of the Greek letter *alpha* (= 'one') on the back confirms that the piece was intended for that unit value. The inscription is of a great historic significance since suggests that tribute on payment into the Achaemenid treasury was reckoned in Greek silver tetradrachms (= 'staters'). Another important bronze lion exemplar

comes from the *Ville Royale* of Susa (Sb 2718).<sup>95</sup> It weighs 121.543 kg, corresponding to four talents (121.543 : 4 = 30.25 kg).

When the first proper coins appeared in Western Asia, quickly spreading all over the Mediterranean and the East, the millenary Mesopotamian history of weights and weighed silver continued in the Achaemenid period, thanks to the inertia of measures (the 'daric' corresponds to a Mesopotamian shekel of c. 8.4 g) and the lion weights of Assyria became the lions of the King of Kings.

#### Addendum

When this article was already in print, a contribution by F.M. Fales ("The Assyrian Lion-Weights. A Further Attempt") on the bronze lion weights from the throne-room of the North-West Palace appeared in the volume edited by P. Corò, E. Devecchi, N. De Zorzi and M. Maiocchi, *Libiamo ne' lieti calici. Ancient Near Eastern Studies Presented to Lucio Milano on the Occasion of His Birthday by Pupils, Colleagues and Friends* (AOAT 436), Münster 2016, 483-510. Fales, reconsidering the group of weights (here N1-16) after his analysis published in 1995 and the article by C. Zaccagnini (1999), proposes a new interpretation of the lion weights from Nimrud. Weights with and without handles may represent two separate groups with different metrological meanings: exemplars with no handle bear Akkadian (and some also Aramaic) inscriptions referring exclusively to the mina of the king, while weights with Aramaic inscriptions referring to the standard of the land always have handles. The handleless group includes weights related to the heavy and light minas, while handled weights correspond only to the heavy standard of c. 1000 g. Taking into account the masses, and postulating a similar state of preservation of all the exemplars – with a loss of c. 4-5% of the original weight – Fales suggests that the handled exemplars were originally without handles and were manufactured according to the standard of Assyria (indicated by the formula 'of the king'). When the handles were subsequently added, these weights were deliberately linked to a different mina of more than 1000 g (with an approximate theoretical weight of 1043 g), that might have been the standard 'of land' mentioned in the Aramaic inscriptions (also added in this later stage). According to Fales this latter standard was a 32-shekel unit obtained by a 2-shekel addition to the heavy Assyrian mina. The hypothesis would seem strengthened by the bronze duck-weight found in Tomb II (here N33) bearing a bilingual inscription (Akkadian '6-su' and Aramaic 'one-sixth of the land') and 8 vertical strokes (6 plus 2, with a space in between). Fales considers the exemplar "a crucial testimonial of the fact that the standard "of the land" was meant to comprise 2 additional shekels per heavy mina – though the unique notation of the 6+2 separate strokes meaning "6 (i.e. 1/6 mina) plus 2 (shekel per mina)" (p. 496).

<sup>89</sup> PEYRONEL 2012.

<sup>90</sup> MAZZONI 1980; ASCALONE, PEYRONEL 2000, 23-24.

<sup>91</sup> WEISS 1985, 284 no. 128; PULAK 1990.

<sup>92</sup> ZACCAGNINI 1999, 262; it is very unlikely that the bilingual-inscribed lions were made in the west and later on reached Nimrud as suggested by FALES 1995, 54.

<sup>93</sup> CURTIS 2013.

<sup>94</sup> MITCHELL 1973.

<sup>95</sup> LAMPRE 1905, pl. 9; CAUBET 1992, 221-222 n. 154.

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