



GRÉGORY CHAMBON & ADELHEID OTTO (EDS.)

Weights and Measures as a Window on Ancient Near Eastern Societies



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Weights and Measures as a Window on Ancient Near Eastern Societies

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Why do “duck-weights” have the form of a water-bird?

Goose-weights and their relation to the goddesses Nanše and Ningal¹

ADELHEID OTTO – GRÉGORIE CHAMBON

*“If it looks like a duck, swims like a duck, and quacks like a duck,
then it, most probably, is a ... goose.”*
(slightly modified English proverb)

The most characteristic and elegant form of a Mesopotamian weight-stone is that of a recumbent bird turning its head back to lie along the body. These so-called “duck-shaped weights” or “duck-weights” are attested for the late third millennium onwards. Apparently, this form was so successful and meaningful that it was in use nearly everywhere in the Near East. The ancient people must have been aware of its meaning, which however escapes us. It is argued here that the shape of weights, especially referential weights, was not meaningless, as is the case with the Assyrian royal weight, which has the form of a lion.² But although every handbook on the Near East

and every museum with Near Eastern objects proudly exhibit the aesthetically appealing duck-weights, no satisfactory explanation has yet been proposed for why a weight-stone should have the shape of a resting water-bird—be it a duck, a goose or any other water-bird.³

The earliest “duck-weights” and the concept of certified weight-stones

Recent research makes clear that balance pan weights were in use not only from the Early Dynastic period onwards, but already in the fourth millennium, thus con-

1 This article was born from a simple email-conversation between the authors during the first hard Corona lockdown in April 2020, when the authors were working on the edition of this volume. OTTO, an archaeologist widely interested in iconography, asked CHAMBON, a philologist and expert of metrology, about the most common scholarly explanation for the “duck-shape” of weight-stones. Upon his perplexing answer that there was no accepted explanation, Otto started this research, which was enriched by CHAMBON’s input and—in the course of that year, in kind of a ping-pong—developed into an interdisciplinary study. The first draft of the manuscript received many critical remarks from Michael ROAF, who has to be thanked warmly. The paper profited further from comments by William B. HAFFORD, Elisa ROSSBERGER, Enrique JIMÉNEZ and Berthold EINWAG. Ilona SPALINGER is to be thanked for smoothing the English.

2 The meaning of the duck-shape in analogy with the lion-shape associated with Assyrian royalty was considered by E. CANCIK-KIRSCHBAUM (2012: 17), without finding a satisfactory answer:

“Während eine überzeugende Erklärung für die »Ente« als formgebendes Motiv noch aussteht, fungiert eine andere in metrischen Serien verwendete Tiergestalt, der Löwe, als Emblem-Tier des assyrischen Königs.”

3 The identity of the water-bird has been a matter of discussion for a long time. POWELL 1979: 80 already argued that they represented geese or swans, not ducks. E. JIMÉNEZ brought a Latin poem written by Jean-Vincent SCHEIL to our attention, where SCHEIL proposed an original, very French explanation, what the goose and a weight-stone have in common; in SCHEIL’s words: “*Quid vobis apud Assyrios, o pondus et anser, est commune, parem qui geritis speciem?*” SCHEIL’s explanation is centered on the similarity of the Akkadian word *kabittu*, that he interpreted as “weight” from the verb *kabātum*, “to become heavy” and the word for the most delicious part of the goose, the liver (*kabattu*, in earlier publications often *kabittu*) (JIMÉNEZ 2020: 295). However, this gourmet explanation seems not to have been accepted by anyone else.

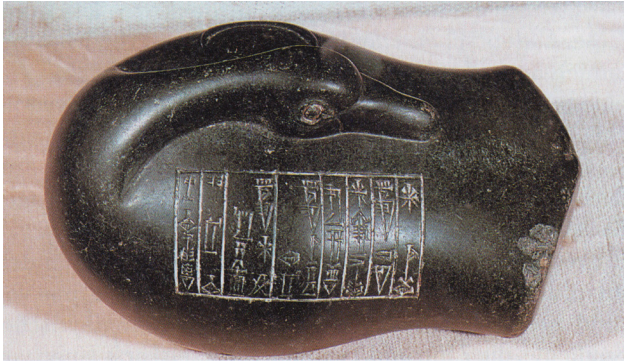


Fig. 1. Five Mina diorite goose-weight from Etemenniguru at Ur, dedicated to Nanna by Šulgi (HROUDA 1991: 208)

stituting another relevant element of the emerging complex urban societies.⁴ Yet the earliest weight stones are sphendonoid, cylindrical, domed, sphere- or egg-shaped. No duck-shaped weight can be dated earlier than the Lagaš II period for sure.

A tiny little number of duck-shaped weights seems to date to an earlier period at first sight only. Among these are a duck-weight from Chagar Bazar, one from Kiš and one from Tepe Gawra, which however are either intrusive in the levels, date as well to the early Ur III period or are no duck-weights.⁵ The allegedly earliest inscribed duck-shaped weight bears an inscription of Narām-Sîn.⁶

Since this inscription is probably not genuine, however, there is no securely attested duck-weight until after the end of the Akkadian period.⁷

Thus, the earliest dated duck-weight seems to originate from the Lagaš II dynasty. It is exceptionally large (49.5 cm long), from granite, and bears the inscription: “2 talents, Ur-Ningirsu, ensi₂ of Lagaš”.⁸ It weighs 60.555 kg, which corresponds to two Mesopotamian talents of approx. 30 kg (120 mina of 504.62 g, 7200 shekel of 8.41 g). Meanwhile another duck-weight dating to the Lagaš II dynasty has been published.⁹ Duck-weights became more frequent during the Ur III period. Some of them were marked as the officially fixed/certified (Sumerian *gi-na*, verb *gi.n*) standard by an inscription referring to the king. This goes hand in hand with the well-known reform by the Ur III kings, who set the standards (SALLABERGER 2014: 425).

Luca PEYRONEL assembled the eleven known weight-stones bearing inscriptions of Ur III kings (PEYRONEL 2012: 19, Tab. 1). All of them were made of diorite. Seven inscriptions state that the king standardised/certified (*gi-na*) the weight; four mention the god to whom they were dedicated. For example, the duck-weight from Etemenniguru at Ur (Iraq Museum IM 3580), weighing 2478 g, is inscribed: “For Nanna, his lord, divine Šulgi, the mighty man, king of Ur, king of the four regions, has standardised/certified the 5 mina.” (Fig. 1).¹⁰ Seven of these diorite weight-stones are in form of a “duck”, one

4 W. B. HAFORD (2019) clearly demonstrated this with the material from Tepe Gawra. See also RAHMSTORF 2006 for a wide perspective on the earliest balance weight stones.

5 A seemingly early duck-weight from Chagar Bazar Level 5 (MALLOWAN 1937: 131, Fig. 11, No. 6) was found in a disturbed area and is probably intrusive. Max MALLOWAN (1947: 109, no. 180) proposed the possible development of the duck-shape from pierced Jemdet Nasr amulets; however, the time gap between the amulets and the earliest attestation of duck-weights makes this suggestion somewhat arbitrary. A unique Agade duck-weight from Ebla dates to the Middle Bronze Age (see ASCALONE/PEYRONEL 2011 and PEYRONEL 2019). The 47 weight-stones in the Early Bronze IVA Palace G at Ebla constitute the earliest well stratified assemblage of politically controlled weight-stones to date, but none of the weights has the shape of a water-bird (PEYRONEL 2019: 68–70). A large duck-shaped stone weight from Kiš/Tell Ingharra can be associated with Monument Z, Phase 13b, which contains mixed material from the Akkadian and Ur III period (ZAINA 2020: 126, Pl. CXVIII.7). One duck-weight is said to have been found in Nintu Temple VII at Khafajah (Early Dynastic III–Akkadian period), but it might well be intrusive from the later private houses which were built above the temple (DELOUGAZ/LLOYD 1942: 79–82, 150). W. B. HAFORD (2019: 19, note 5) showed that there is no clear evidence for the alleged early duck-weights from Tepe Gawra.

6 MM. 740.004: Museo dell’Oriente Biblico di Montserrat, Barcelona (MOLINA 1989).

7 L. PEYRONEL and G. MARCHESI doubt that the inscription is genuine, since it is written horizontally and not vertically and says only “*na-ra-am-EN.ZU LUGAL*”. RIME Narām-Sîn E2.1.4.44 (PEYRONEL 2012: 14–15, Pl. I, 2).

8 BM 104724 (KING 1912, Pl. 50. RIME 3/1.01.01. add07, ex. 01. PEYRONEL 2012: 15–16, Pl. I, 3. https://www.britishmuseum.org/collection/object/W_1912-0511-239). Two rulers of Lagaš were actually named Ur-Ningirsu (MAEDA 1988); the first ensi₂ (head of the city) of Lagaš was a contemporary of the last kings of Akkad and the second, son of Gudea, ruled slightly earlier than the beginning of the Ur III dynasty (SALLABERGER/SCHRAKAMP 2015: 31). As the inscription mentions only “king of Lagaš” and not “son of Gudea”, which is regularly indicated in the inscriptions of the second ruler, one might think that it refers to the first ensi₂. But this argument *ex silentio* can not explain why we have no similar inscribed specimen dated to his successors of the second Dynasty of Lagaš, especially Ur-bau and Gudea, for whom we have a lot of inscriptions on several types of media. It therefore seems more plausible that it dates to the reign of Ur-Ningirsu II, which just precedes or is contemporary with the foundation of the Ur III Dynasty.

9 Another duck-weight that is referenced as dating to the Lagaš II dynasty has been auctioned (see THEIS 2017), but we have no indication of its mass or the content of the inscription; only its length of 21 cm is known.

10 Duck-weight from Ur, Etemenniguru. Iraq Museum IM 3580 (WOOLLEY 1974: 99, Pl. 48b).

is sphendonoid and one in stele-form (**Fig. 12**),¹¹ two more are too fragmentary to recognise their shape. Eight were found at Ur in the temple area (at Gipar-ku, Etemniguru, Edublamah and Ganunmah), and two were found at Tello. Three of them (one from Ur, one from Tello, one from the art market) explicitly mention the city-god Nanna. One duck-weight from Ur was dedicated to Ningal, the supreme goddess of Ur, Nanna’s consort.¹² This weight was found at Gipar-ku, Ningal’s sacred compound and temple. The inscription on the heavily damaged object reads: „For Ningal, his lady, Šulgi the mighty man, king of Ur, king of the four regions.”¹³

These heavy weight-stones, whose accuracy and righteousness were officially guaranteed by the king, clearly belonged to the set of reference weights of the Ur III state for both economic and ideological purposes. They were kept in the temenos area around the ziggurat, which was also used as the supreme court and the treasury. The findspots of these weight-stones and the fact that they were expressly related to the supreme deities of Ur, Nanna and Ningal, emphasise the important function of this sanctuary complex and temples in general as the place where the official reference weights were kept and where the correctness of financial transactions was guaranteed.

The existence of “weigh-masters” (officials, merchants or craftsmen) involved in the process of weighing or of controlling the procedure is already attested in the administrative documentation from the Early Dynastic and Akkadian periods, which records abundant quantities of metal and valuable material.¹⁴ For example, a letter from the chancery of Ebla mentions a dispute about the use of correct weights for the purchase of clothing from Mari by a merchant from Ebla. While the merchant

is weighing the clothes with his own weights, the market overseer’s son and then the market overseer himself come to prompt him to use the king’s weights (Sumerian *na₄ lugal*) from now on.¹⁵ Although the text does not inform us about the shape of these weights, there is no doubt that they could be visually distinguished from the series of weights used by the merchants. In any case, the predominant use of king’s weights reflects a form of control by the royal administration (of Mari in this case) of the market economy; in particular, the text states that the amount of silver (hence the purchase price) increases (Akk. verb *kabātum*) when the quantity of clothing is weighed with the king’s weights.

Yet it remains difficult to know exactly to what extent the organisations (palaces, temples) were involved in the choice and the use of sets of weight standards.¹⁶ However, an administrative text from the Ur III period, dated to the reign of Amar-Sin, clearly refers to the reception of two different sets of weights by two officials (*ugula* “super-intendents”) responsible for the administration of the wool industry in the city of Umma (FINKEL 1987). We may assume that these weight sets were disbursed either by the local administration of Umma or by the royal administration of Ur (unfortunately not specified in the text) and that in any case, following Irving FINKEL’s interpretation, this document reflects a deliberate attempt to ensure the use of uniform weights. The form of these weights, listed by decreasing order from 10 minas to 10 shekels, has unfortunately not been specified by the scribe.

What is particularly interesting is that epigraphic documentation refers to “bird-stones”. On a lexical list from Old Babylonian Nippur,¹⁷ the entry *na₄ki-ta* (an error for *na₄ki-lá*, “weighing stone”)¹⁸ is followed by the entries *na₄uz* “duck? stone”¹⁹, *na₄ħuduš* (an unknown type of stone shape), [*na₄*] *nunuz*? “egg-shaped? stone”,

11 The term ‘stele-form’ describes a form which is a mixture between conical and flat. HAFFORD (2012: 26) explains that the term ‘sphendonoid’ was coined by Sir Athur EVANS and means ‘sling-bullet-shaped’. This form is sometimes also referred to as barrel-shaped, bi-conical or oval, and the names vary considerably as well in other languages. For a convincing terminology of shapes see HAFFORD 2012 and PEYRONEL 2019.

12 Three of the four duck-weights bearing inscriptions of Šulgi were dedicated to Nanna (AO 2218; IM 3580; one in Istanbul Museum), one was dedicated to Ningal (BM 118552).

13 U. 6954, BM 1927.0527.25; BM 118552 (GADD/LEGRAIN 1928: n. 55, Pl. 12. FRAYNE 1997: 155 E3/2.1.2.53). No photo is available, not even on Ur-online. W. B. HAFFORD notes: “Large duck weight, one side partly preserved up to head on back. One eye of head seen engraved, below on side is inscription of Šulgi: For Ningal, his lady, Šulgi the mighty man king of Ur king of the four regions; badly broken, loss ca. 80 %.” (<http://www.ur-online.org/subject/6241/>).

14 See the study of the terminology of such specialists in BARTASH 2017.

15 Leonid KOGAN drew our attention to ARET 13, 15 during a lecture he held in Munich in May 2021; he is presently preparing a new interpretation of the text. Two verbs for “to weigh” are used in ARET 13, 15: the usual Akkadian verb *šaḡalum* and the verb on the root *wzn*, known later in Arabic as “to weigh” and certainly having the same meaning in Ebla. We do not know whether these verbs refer to two different weighing activities or to two dialectical ways of expressing weighing, depending on the region (Mari or Ebla).

16 Except for the “administrator of date orchards”, certainly belonging to a royal household, who weighed silver for a merchant (OSP 2, n°62: BARTASH 2017: 85–86).

17 CBS 10183, published in MSL 10 and on the online Digital Corpus of Cuneiform Lexical texts (<http://oracc.museum.upenn.edu/dcclt/corpus>). We thank Manon RAMEZ for bringing it to our attention.

18 According to the Digital Corpus of Cuneiform Lexical texts.

19 See below for a discussion of the meaning of the Sumerian *uz*.

na₄ 'eš₅ ' [še]²⁰ “(weighing) stone of 3 barleycorns”, na₄ min [še] “(weighing) stone of 2 barleycorns”, na₄ diš [še] “(weighing) stone of 1 barleycorn”. This list seems to have been extracted from the classical so-called Ur₅-ra list, but with the new entry na₄uz. As this extract begins with the entry “weighing stone” and ends with the entry “(weighing) stone of 1 barleycorn”, it seems to concern a set of material weights that are described according to their shape or weight. The expression na₄nunuz is usually considered to refer to a bead, which can be white or black, according to some lexical Ur₅-ra lists.²¹ The term nunuz, however, which means “egg-shaped”, could refer to egg-shaped weights, which are not too frequently found among the material weights, or could refer more generally to sphendonoid or other roughly oval weight-stones.

Another Old Babylonian lexical list from unknown provenance mentions na₄uz “duck² stone”, followed by the entries na₄uz babbar “white duck² stone”, na₄uz ġe₆ “black duck² stone”. The white and black colours for na₄nunuz “egg-shaped stone” and na₄uz “duck² stone” in these lexical lists find counterparts in material data, since the material weights are either from white limestone or from grey-black haematite (for the smaller weights) and diorite respectively (for the larger ones) (HAFFORD 2012: 31–32).

Grégory CHAMBON and Dominique CHARPIN have made clear that an important function of some Old Babylonian temples was their use as the “office of weights and measures”. CHAMBON realised that some weighing of metal in the ‘Grand Palais’ of Mari took place in the ‘Ishtar chapel’, and that the existence of weight stones in temples was not to be understood symbolically, but that these were the reference weight sets of the city.²² Furthermore, some loan contracts from Mari mentioning refined and certified (*šarpum*) silver according to the “weight of the city of Mari” concern economic activities of temples (CHAMBON/MARTI 2019: 58), in the same way as the mentioning of the “weight of (the god) Šamaš” refers

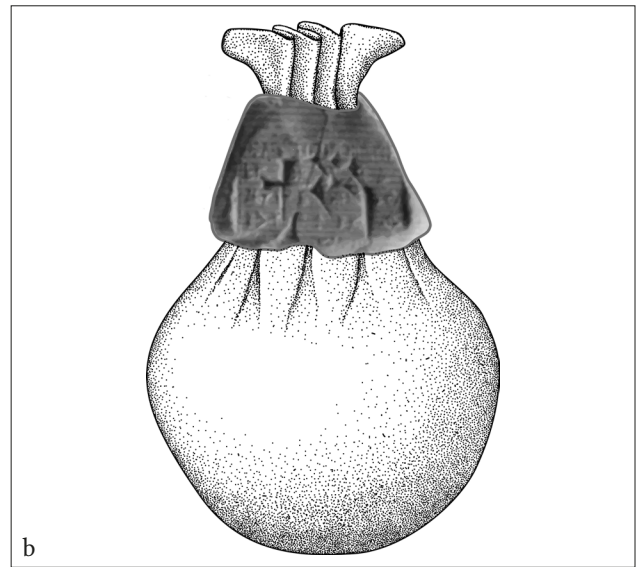
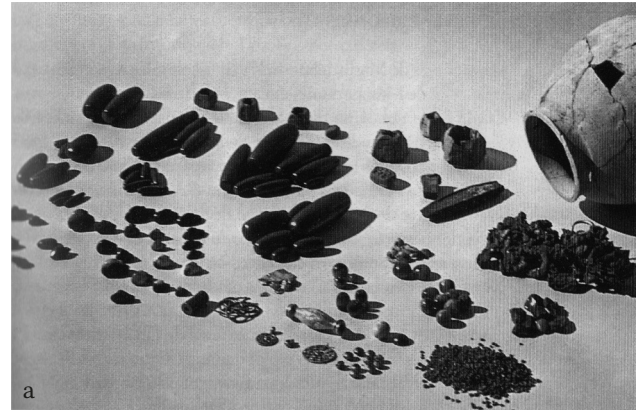


Fig. 2. (a) The hoard from E.BABBAR at Larsa, including sealed silver and complete sets of weight-stones (HUOT 2004: 29). (b) Sealing of a sack with weighed silver and tentative reconstruction of the sack (drawing A. Otto/M. LERCHL after ARNAUD et al. 1979: Pl. I.2).

to loan contracts established in the temple of the sun god in Sippar (STOL 1999: 580). CHARPIN (2017: 85–106) convincingly argued that “Egina”, the “house of the gi-na (certified/verified)” was the room or chapel of *Kittum* (é^dki-it-tim), the personification of justice, inside a temple where the verified reference weights and measures were kept, which served to ensure the fairness of the transactions and to certify the quality of silver.

CHARPIN (2017: 86–94) also re-examined the hoard from Larsa, which had been found under the floor of Room 13 of the Ebabbar at Larsa (ARNAUD et al. 1979; HUOT 2004). The buried pot contained the equipment of the weighing office including sets of sphendonoid and duck-shaped weight stones, scrap silver and gold, sealed and inscribed sack closures (Fig. 2a). CHARPIN demonstrated that the person responsible for the weighing procedure, who was directly controlled by the Babylonian

20 This philological restitution is based on the canonical Ur₅-ra list from Nippur, in which the section with the weight units by decreasing order (from the unit gu₂ “talents” until the lowest unit še “barleycorns”) is followed by a list of plants as in CBS 10183.

21 See for example CBS 4608+ o iii 46 on the Digital Corpus of Cuneiform Lexical texts.

22 CHAMBON (2011: 153–154) thinks that they belonged to a set of weights which was kept in this sacred space, used to validate transactions in metals and to prevent possible deviations. He concludes: “... ces exemplaires jouaient un rôle administratif de première importance en offrant une garantie sur la validité de manipulations de métaux.”

king, had produced several sacks of weighed, “certified/verified” (gi-na) silver and guaranteed the exact mass of the content by impressing his official seal on the clay sealings of the sacks. We followed this idea and tried to reconstruct such a sack of weighed silver (Fig. 2b). The idea of this “sealed” (*kankum*) silver is clearly the same as that which more than 1000 years later led to the development of silver and gold coins stamped with the official seal of a king or state.

It may be concluded from this short overview that duck-weights came into use around 2100 BC. They continued to be in use for nearly 2000 years.²³ But what does the ‘duck’ stand for? Dominique COLLON, when discussing the so-called “Filling Motifs” on seals, made clear that every single motif on a seal had a specific significance, and therefore investigated the meaning of the lion and the duck or goose (Collon 1995). It has been acknowledged since long that the motif of the lion was the symbol of the Assyrian royalty. As such it was used to mark seals, vessels and other objects as property of the palace, and was also the shape of official royal Assyrian standard weights. In the Neo-Assyrian period, the duck-weight was considered as so typically Babylonian that the duck-weights in the North-West Palace in Nimrud had a striding lion incised on their flanks in order to underline their official status as standard weights in the Assyrian royal palace.²⁴ COLLON then asked, what—in analogy with the lion-weights—the duck-shaped weights would stand for. Since the long-necked bird (duck or goose) appeared frequently on seals and terracotta plaques from Ur in the late third millennium, she related this bird to the city of Ur in a way which will be explained in the following. She argued: “This ‘duck’-weight was presumably used by the merchants of Ur, and throughout the Ur III trade empire it would have come to be regarded as a standard. As a result, the ‘duck’-shape was adopted as the weight *par excellence*, at least into Achaemenid times.” (COLLON 1995, 72). Even if this explanation overemphasises the role of the Ur merchants, COLLON is certainly right in establishing a relation between the duck or goose and Ur.

The goose and its relation to Mesopotamian goddesses

The water-birds most commonly depicted in Southern Mesopotamian art have long necks and long legs, which are typical of geese but not of ducks.²⁵ Wild geese of various kinds actually appear as winter visitors in the Near East; several are even attested throughout the year and are breeding in Iraq (PORTER et al. 2010). Elisabeth von DER OSTEN-SACKEN (2015: 229–270) discussed in length the various species of water-birds in modern and ancient Near East and convincingly argued from the depictions, palaeozoological remains and texts that the duck played only a minor role in ancient Mesopotamia. Not least because ducks were not domesticated before the Roman period and geese were economically important animals. The faunal remains indicate more geese in third and second millennium Southern Mesopotamian sites (Isin, Nippur, Der, Uruk and others) than ducks (OSTEN-SACKEN 2015: 492–512). She noted on the other hand that wild and domesticated geese were fairly frequent in the administrative records and that the Sumerian words *uz* and *uz-tur* (the sign combination UZ.TUR is read *bibad* in lexical lists) must be identified with the wild and domestic goose respectively (OSTEN-SACKEN 2015: 229–270).²⁶ The problem is that the semantics of bird names may have shifted in the course of time and depended on the context described in the texts: they could be used either as generic or specific terms.²⁷ As the term *uz* is written ŠE.MUŠEN, literally “barley/bird”, one may spontaneously think of a fattened (and thus domesticated) bird, but in some cases *uz* could refer to a wild bird, and a lexical list (Ur₅-ra style from Old Babylonian Nippur) clearly mentions a fattened bird, *bibad niga^{mušen}*. Nick VELDHUIS prefers to consider *bibad^{mušen}* as a duck, because in

23 See for example the duck-weights used in the Assyrian Empire and studied by READE 2018, or READE 2018: 146 for a post-Assyrian duck-weight.

24 READE 2018; see also the contribution by CHAMBON and OTTO in this volume.

25 This has already been pointed out by several scholars, most recently by Julian READE (2018: 127) in his study on the relationship between Assyrian weights and money.

26 Benno LANDSBERGER (1966: 250–251) argued that *uz^{mušen}* was the wild duck but correlated the Arabic *iwazz* and late Hebrew *awazz* for goose with the Sumerian *uz*, which resulted in the Akkadian loan-word *usû*: “Vielleicht war *awazz/usu* von Anfang an ambivalent Gans-Ente, ähnlich *uz/uz-tur*” (LANDSBERGER 1966: 257). He showed that the term *uz^{mušen}* in Early Dynastic, Akkad and Ur III documentations was identical to *bibad^{mušen}* (UZ.TUR^{mušen}) in Ur III and later documentation. According to him, this replacement may be seen as an indication of the progressive domestication of the wild duck/goose. The Sumerian term *kur-gi*/Akkadian *kurkû* was also used for “goose”, maybe for both “wild goose” and “tame goose” (LANDSBERGER 1966: 246).

27 These terms could refer generically but ambiguously (for a modern reader) to ‘goose’ or ‘duck’ (BLACK/AL-RAWI 1987).

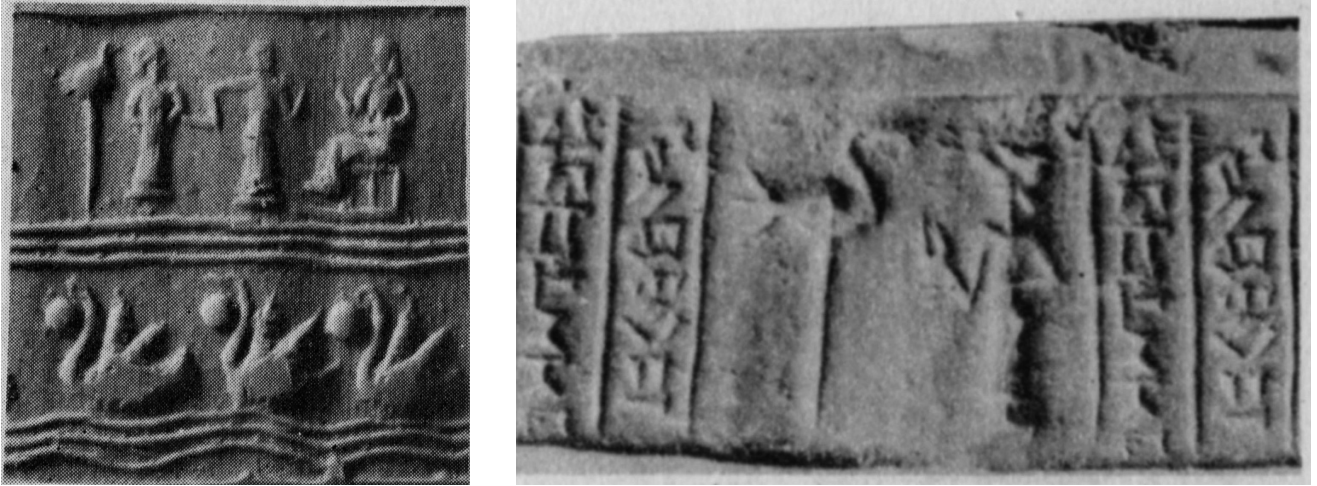


Fig. 3. A goose standard depicted on cylinder seals from Tello (PARROT 1948: Pl. XXX, no. 532) and Ur (LEGRAIN 1951: Pl. 18, no. 247).

some administrative texts from Ur III Lagaš, this kind of bird receives an identical or lower grain ration than the birds named $u_5^{mušen}$ (written $SI.MUŠEN^{mušen}$) and the $kur-gi_{16}^{mušen}$ (Akkadian *kurkû*)²⁸, which he proposes to identify (most of the time but not necessarily always)²⁹ with the captive goose of the wild variety and the domestic goose respectively.³⁰ Anyway, an Old Babylonian proverb of unknown provenance clearly distinguishes the bird $uz^{mušen}$ from the bird $kur-gi_4^{mušen}$, even if its interpretation is still unclear: “The Tigris is a duck, the Euphrates is a goose...”³¹ The terms $uz^{mušen}$ and $u_5^{mušen}$ are already mentioned in the lexical bird lists dated to the Early Dynastic period, while $kur-gi^{mušen}$ appears later in Old Akkadian administrative texts from Adab, Girsu and Umma.³² The $u_5^{mušen}$ bird still opens the Old

Babylonian bird list and has to be regarded as the bird par excellence (VELDHUIS 2014: 45). It plays a prominent role in the introduction to the literary text ‘Nanše and the Birds’ and is closely associated in literature with this goddess (see below). Various meanings of this term have been proposed (cock, swan, pelican, cormorant, gull and goose), but VELDHUIS has convincingly argued that the translations pelican, cormorant or gull are unlikely because $u_5^{mušen}$ is mentioned in Ur III grain distribution texts and this bird is said to raise its voice in ‘Nanše and the Birds’ (VELDHUIS 2004: 294). Furthermore, the messenger of the literary text ‘Enmerkar and the Lord of Aratta’ is compared to an “ $u_5^{mušen}$ in the mountains”, which could perfectly refer to a goose as migratory bird and rule out the swan hypothesis.

Geese need water, love to graze in wet meadows, are easy to handle, grow fast and have the perfect size of a meat portion for one nice meal. In short: the goose is the ideal animal to be herded in the marshes of Southern Babylonia, which is now extremely rich in wetland habitats and used to be even more so in the third and early second millennium. In the Ur III period, the two most important city-states in southernmost Babylonia, situated near the marshes and close to the former shore of the Gulf, were clearly Girsu–Lagaš–Nigin and Ur.

COLLON’s explanation is appealing, but a supposed relationship between the “goddess on the goose” and the city of Ur is less easy to understand. COLLON referred to the article by K. R. MAXWELL-HYSLOP (1992) in which she proposed to identify the “goddess on the goose” with Nanše, the supreme goddess of Lagaš and Girsu. MAXWELL-HYSLOP and before her OPIFICIUS (1961) and Douglas VAN BUREN (1933) conclusively argued that the interpretation as the goddess Bau was caused by a misunderstanding. J. M. ASHER-GREVE and Goodnick WESTEN-

28 This term is usually written $kur-gi_{16}^{mušen}$ in Lagaš, $kur-gi^{mušen}$ in Ur, Drehem and Umma, and $kur-gi_4^{mušen}$ in Old Babylonian documentation (VELDHUIS 2004: 264).

29 In the Sumerian story named “Goose and Raven”, $kur-gi_4^{mušen}$ refers clearly to a wild migratory bird (ALSTER 1980: 45). According to VELDHUIS (2004: 264), the semantic of the word $kur-gi/gi_4/gi_{16}^{mušen}$ evolved over time from domestic goose in Sumerian over goose in general in Sumerian and Akkadian to crane in Aramaic and Arabic.

30 Texts ITT 3/2 6415, ITT 9630, TÉL 95, TCTI II 2814; TCTI II 354 (see VELDHUIS 2004: 223, 234 and 264). Furthermore, he points out that the large quantities of eggs recorded in Girsu texts can only come from ducks (as they lay more eggs than geese). And finally, he suggests that “the word *bibad* is probably a loan-word from Akkadian *paspasu* [duck] and was used originally as a qualification of *uz*, not as a name for a separate species”.

31 IM 62823 (ALSTER 1997: 298). We would like to thank Michael ROAF for drawing our attention to this text.

32 See occurrences in EPSD2. For example, for Adab: CUSAS 19, 144: o 7 and CUSAS 19, 196: o 2, for Girsu: ITT 2, 04374: o 1 and ITT 2, 04444: o 1 and for Umma: TIMA 1, 105: o 2 and TIMA 2, 106: o 2.



Fig. 4. The goddess on the geese holding a sack: terracotta plaques from Tello and Ur (BARRELET 1968: Pl. XXVIII, no. 291; WOOLLEY/MALLOWAN 1976: Pl. 80, no. 147).

HOLZ (2013: 227–231), who name the deity “the Goddess on Anserini” corroborated this view. Much more convincing is the interpretation as Nanše due to the textual evidence where Nanše is frequently associated with birds and fish. Especially the Sumerian literary text ‘Nanše and the Birds’ makes her close relationship to the u_5 bird clear (VELDHUIS 2004: 294). Nanše perceived the beauty (ḫi-li) of the u_5 bird and adopted it. In ‘Enki and the World Order’ even the position of the goose at the feet of Nanše is mentioned: “the holy ($kù$) u_5 fell to/stood by her feet” (HEIMPEL 1998: 153). Gudea Cyl. A xiv 23 also describes the standard (ṣu-nir) of Nanše as a “holy u_5 ”. A goose standard is depicted on Akkadian to Ur III cylinder seals found at Tello and Ur (Fig. 3).³³ It is not clear how far back the relation of the goose with Lagaš or Ur can be traced, but certainly until the ED IIIb period according to iconographic motifs.³⁴

33 The cylinder seal from Ur depicts a goose-standard and the introduction of a woman to an enthroned goddess in the upper register and swimming water-birds in the lower register (LEGRAIN 1951: 22, Pl. 18, no. 247). The seal from Lagaš depicts a female person in adoration before a goose-standard (PARROT 1948: 261, Pl. XXX, no. 532).

34 An ED IIIb or early Akkadian votive plaque depicts a goddess on a goose holding a fish; it was found in Nippur, but its place of manufacture is not certain (BOESE 1971: Pl. XVIII, 4; MAX-

Nanše’s aspect as a sea goddess and her association with water-birds and fish is not surprising with her main temple Sirara being located in ancient Nigin (Tell Zurghul), the third city in the state of Lagaš, situated on a turtleback in a marshland environment which must have periodically stood out from the water like an island.³⁵ But Nanše was also linked to the Eridu–Ur region further to the west: she was “the child born in Eridu” and was regarded as the daughter of Enki. She was the sister

WELL-HYSLOP 1992: Pl. VIIIb). An ED IIIb cylinder seal impression depicts two lying geese below an eagle; above one goose are the sign GAL and a crescent moon and disc. UNGER interpreted this as a “Stadtwappen” (UNGER 1957–71: 140; WEBER 1920: Nr. 162). Administrative texts mentioning geese and found in Girsu are dated to the Akkadian period ($\text{kur-gi}^{\text{mušen}}$ in CUSAS 19, 019, 144, 196 and TCBI 1, 158) and to the Ur III period ($\text{kur-gi}^{\text{mušen}}$ in ITT 3, 06415, ITT 5, 06768 and ITT 5, 06889; $u_5^{\text{mušen}}$ in ITT 2, 00736, ITT 3, 04968 and *passim*). The $\text{kur-gi}_{16}^{\text{mušen}}$ appears on Gudea Statues E and G.

35 The ongoing excavations at Tell Zurghul have recovered several clay cones commemorating the construction of Nanše’s temple by Gudea. Gudea’s temple itself has been completely eroded except for its artificial terrace, but presumably the underlying sequence of Ubaid period temples shows that the site of the temple had already been sacred some two thousand years earlier; the latest occupation of Nigin dates to the very beginning of the second millennium (NADALI/POLCARO 2020).



Fig. 5. (left) Terracotta plaque depicting a goddess on the goose-throne holding two sacks in both hands (OPIFICIUS 1961: 253, no. 251). (right) Terracotta plaque depicting frontally an enthroned goddess (Ningal) holding two sacks in both hands (WOOLLEY/MALLOWAN 1976: Pl. 78, no. 125).

of Ningirsu, was associated with divination, and became famous as the interpreter of Gudea's dream (HEIMPEL 1998). In the Nanše Hymn, she is not only praised as the protector of the weak, but also as being responsible for checking the accuracy of weights and measures. The literary text "Nanše A"³⁶ concerns the misuse of stone weights and capacity measures by taking a small weight instead of a large weight and a small *ban*₂-capacity measure instead of a large *ban*₂-capacity measure (lines 142–143). In lines 234 and 241, "a correct stone to weigh precious metal" (*na₄-gi-na ku₃ la₂-e-de₃*) is men-

tioned. Lines 232–236 read: "At the temple, power (ME) has been granted from the *Abzu*, in Sirara, the gods of Lagaš gather around her. To weigh precious metal with a standard weight, to use standardised size of reed baskets, to give an agreed *ban*₂-capacity measure in the hands of all countries."³⁷ This hymn emphasizes the role of Nanše as the goddess who assures the righteousness of the metrological standards and who prevents cheating in economic practices. This role of her as the guarantor of measures endured in the later literary tradition, as is shown by an Akkadian hymn to the goddess Gula,

36 HEIMPEL 1981; <http://etcsl.orinst.ox.ac.uk/section4/tr4141.htm>. See the new edition in ATTINGER 2019.

37 <http://etcsl.orinst.ox.ac.uk/section4/tr4141.htm>. Lines 241–243 are identical to the second sentence.

who is equated with Nanše, “who handles the yardstick, the cubit made of reeds, the 1-rod reed” (FOSTER 2005: 583–591). Since the goose was the animal closely linked with Nanše, and since her temple where she established the metrological standards was surrounded by water, it is easily understandable why the goose became the standard form of the earliest guaranteed weight-stones.³⁸ However, the cult of Nanše faded with the general decline of the territory of Lagaš after the Ur III period (HEIMPEL 1998). Therefore, it is clear that not all goose-weights were associated with Nanše, for example those with royal inscriptions of Ur III kings dedicated to Nanna and Ningal and numerous later examples.

Who is the goddess on the goose? Reconsidering the iconography of Nanše and Ningal

K. R. MAXWELL-HYSLOP argued that the numerous Ur III and Old Babylonian terracotta plaques depicting a goddess seated on a goose represent Nanše. Most of them were found at Tello/Girsu and Ur.³⁹ Eva BRAUN-HOLZINGER (1998–1999: 162) argued that water-birds in connection with goddesses were so frequently depicted in Babylonia from the Akkadian to the early Old Babylonian period, that this pictorial motif was not reserved for Nanše, but was also associated with other goddesses. Her argumentation arose from the fact that the goddess on a goose and goose standards were depicted not only on seals of priests of Nanše but also on those of priests of other goddesses such as Bau.⁴⁰ However, it is rash and in most cases wrong to assume that the deities depicted on seals were identical to those mentioned in the seal inscriptions. We will show in the following that at least

one other goddess, Ningal, was also associated with the goose.⁴¹

One specific type of the motif “goddess on a goose-throne” is attested on several plaques from Tello and Ur:⁴² The goddess on the goose is depicted with her upper body frontally and her lower body in profile without any astral symbol (Fig. 4).⁴³ The depiction on these plaques merits a closer look. Marie-Thérèse BARRELET (1968: 231) remarked that this goddess was characterised by exaggeratedly large ears—an exceptional attribute. The ear was not only regarded as the organ of hearing, but had a wider connotation of intelligence and wisdom.⁴⁴ When Nanše was depicted with overly large ears, this might have been intended to emphasise her intellectual competence, perhaps in juridical procedures. Also the way in which the goddess extends one hand forward with a widely open palm, not holding any object, is a rare *gestus* the meaning of which has escaped us so far.⁴⁵ What is more relevant here is the small oval or round object she is holding in her other hand. This object is usually interpreted as an aryballos-like vessel. However, this is not beyond doubt. Usually water is streaming out of a vessel if it is characterised as a water-pot. In this case, however, nothing is coming out of this object. Therefore, it is proposed here that the goddess is holding a sack of weighed, guaranteed (*gi-na*) silver in one hand—the perfect depiction of a goddess who is responsible for justice.⁴⁶

There is another type of terracotta plaque, probably from Ur, which shows a goddess on a goose-throne holding two similar objects (sacks or pots?) in both hands (Fig. 5 left).⁴⁷ Many other terracotta plaques from Ur depict frontally a seated goddess, wearing a peculiar

38 In the same way, the animal symbol of the goddess Nininsina/Gula, a dog, has been materialised for example in a steatite stone as votif dog dedicated to this goddess “for the life of Sumu-El, king of Larsa” (19th century BC: AO 4349, Louvre Museum).

39 From Tello: BARRELET 1968: nos. 291–295, 298. From Ur: MAXWELL-HYSLOP 1992: Pls. 7 and 8; WOOLLEY/MALLOWAN 1976: Pl. 80, nos. 147, 148; Pl. 81, no. 151; Pl. 89, nos. 225, 227. There are only very few other plaques published with this motif (WREDE 2003: 296–299, nos. 1076–1078).

40 BRAUN-HOLZINGER (1998–1999: 162) refers to Ur III sealings mentioning priests of Nanše and Bau and depicting the goddess with the goose or goose standard (FISCHER 1997: seals 10–12). FISCHER (1997: 122–128) also notes the association of the inscription with the image but is more cautious about the implications.

41 After we had finished this article, A. OTTO discovered that Claudia SUTER (2007: 336) had already come to a similar conclusion: “I suggest that similar images from Ur represented Ningal, with whom texts also associate water birds.”

42 From Tello: BARRELET 1968: 230–231, Pl. XXVIII, nos. 291–295. From Ur: WOOLLEY/MALLOWAN 1976: Pl. 80, no. 147; MAXWELL-HYSLOP 1992: Pl. 7a. Even a mould was found in Ur: <http://www.ur-online.org/subject/6225>.

43 BRAUN-HOLZINGER (1998–99: 160) cautiously accepts the identification with the goddess Nanše, since several Ur III cylinder seals owned by priests of Nanše depict prominently the goddess on the goose, e. g. FISCHER 1997: 122 (Fig. 11b).

44 AHW III, *uznu(m)*, has a triple meaning: “Ohr, Weisheit, Verstand”.

45 It is probable that this *gestus* designates the action of judgement, but we had no time to investigate this in depth.

46 A. OTTO thanks Elisa ROSSBERGER for discussing this with her and for corroborating her identification of these objects as sacks.

47 The plaque depicted here is from the art market (OPIFICIUS 1961: 81–82, 253, no. 251), but it is model-identical to a more eroded plaque found at Ur–Dīqdīqah: WOOLLEY/MALLOWAN 1976: Pl. 89, no. 225.



Fig. 6. Clay throne decorated with two crescent standards of Nanna and Ningal, and a goose-throne depicting geese flanking a moon standard; from Ur-Diqdiqqah (WOOLLEY/MALLOWAN 1976: Pl. 88, nos. 210, 211).

crenellated or battlemented crown and holding two similar oval objects in both hands (**Fig. 5 right**)⁴⁸. WOOLLEY remarks that this is “one of the most common types of terracotta. Fragmentary examples were numerous, many giving slight modifications but conforming generally to the one pattern.” (WOOLLEY/MALLOWAN 1976: 177). We put forward the hypothesis that these plaques are depictions of Ur’s supreme goddess Ningal emphasising her role as protector of rectitude by holding sacks of weighed and certified silver. The star-like rosettes framing her image may be characteristic of Ningal.⁴⁹ Ningal’s temple in Ur still fulfilled a relevant economic and financial function in the Old Babylonian period (VAN DE MIEROOP 1992: 105. 208–210 and CHARPIN et al. 2020), in particular by centralising the imports of copper and precious stones (see for instance the Old Babylonian texts UET 5 526, 546, 549 and 678).

A fairly common type of furniture model from clay is an empty throne with a high back. Some of them are depicting two moon standards, clearly representing the couple Nanna and Ningal (**Fig. 6 left**), others depict a

moon standard flanked by two geese (**Fig. 6 right**), or pairs of geese associated with circles and star-like rosettes (WOOLLEY/MALLOWAN 1976: Pl. 89, nos. 213, 223). These clay models of an empty throne decorated with geese have been reported for Ur, Tello/Girsu, Ishchali/Nerebtum, and other sites.⁵⁰ Probably it symbolises the deity seated on the goose-throne but avoids its anthropomorphic representation.⁵¹ The moon standard between the geese was depicted on several goose-thrones (see **Fig. 6 right**).⁵² Therefore, it seems fairly obvious that the goddess who would have sat on a throne associated with geese or with a moon-standard was Ningal, that the empty goose-thrones symbolised the same goddess, and that the goose became a symbol of Ningal in Ur.

⁴⁸ WOOLLEY/MALLOWAN 1976: Pl. 78, no. 125.

⁴⁹ Star-like rosettes tend to be associated with Inanna/Ištar, but here it seems more plausible to relate them to Ningal, whose epithet is: “Nin-mul-nun-na (“Mistress, star of the ruler”) (ZGOLL 2000: 353).

⁵⁰ From Ur: WOOLLEY/MALLOWAN 1976: Pl 88, nos. 209–214. From Tello: PARROT 1948: Pl. 51i. A new fragment from Ishchali was published in Sumer 65 (2019) Arabic section: 60, Pl. 10, 26.

⁵¹ There has been no convincing explanation so far why the symbolic representation was favoured for some deities and in some regions. But especially the moon god seems to have been represented more often in symbolic than in anthropomorphic form. Apparently, the symbolic representation of Nanna’s consort Ningal was also frequent.

⁵² Woolley/Mallowan 1976: Pl. 88, no. 211.

Why do “duck-weights” have the form of a water-bird?



Fig. 7. Ningal on the goose-throne, statue from Gipar-ku (Woolley/Mallowan 1976: Pl. 54).

This is not the right place to discuss the iconography of Ningal in detail—a real desideratum.⁵³ Already an archaic seal impression from the SIS stratum at Ur depicts a goddess on a large goose-boat.⁵⁴ The famous little statue U.6779B from Gipar-ku at Ur—the only complete statue found in this building—shows a goddess in a flounced garment seated on a throne supported by two geese⁵⁵ and with water below it (Fig. 7). She puts her feet on two more water-birds, which are quite massive and have their neck and head closely attached to the body—more resembling goose-weights than living geese.⁵⁶

Another terracotta type from Ur represents the enthroned goddess on a goose-throne, holding tree-like objects in both hands (Fig. 8).⁵⁷ Crescent moons on both sides of her horned crown help to identify her as the mistress of Ur.⁵⁸ The type of enthroned goddess most frequently found at Ur or Diquqqah is that of a goddess with a huge horned crown topped by a crescent; two small geese are depicted on either side of her shoulders (Fig. 9). It seems beyond doubt that this is to represent the goddess of Ur, Ningal.

There are several other plaques from Ur–Diquqqah depicting the goddess on a goose-throne *en face*, with two crescents on either side of her horned crown (Fig. 10).⁵⁹ Here the geese are marked with circles, probably indicating the speckles of their feathers. While the goose serving as the goddess’ seat is stretching its head



Fig. 8. Ningal enthroned on a goose-throne, plaque from Ur–Diquqqah (WOOLLEY/MALLOWAN 1976: Pl. 81, no. 151).

up, the goose below her feet is turning its head to rest on its back—depicted alike the geese of the goose-weights. This plaque type is a rare one that shows the goddess on the geese holding a vase with streaming water, which probably refers to the natural habitat of the water-birds in the Southern Mesopotamian marshlands.

Several references in cuneiform texts corroborate the association of Ningal with the goose (ZGOLL 2000; ASHER-GREVE/WESTENHOLZ 2013: 227–231). Her name “^dŪ-a-nun-na” was interpreted as “the goose of the ruler”.⁶⁰ Piotr STEINKELLER (1994) takes the *u₅-bi* bird as Ningal’s attribute. Ningal is named “*zirru* ‘Nanna’, female

53 The short entry “Ningal. B.” in the RIA (BRAUN-HOLZINGER 2000) provides a useful starting point for a more detailed study, but is certainly not the last word about Ningal’s iconography. Valeriya MINAEVA submitted a Master’s thesis (unpublished) on the iconography of Ningal at LMU Munich in March 2021.

54 LEGRAIN 1936: no. 531; for the date see id. 45: “later than the First Dynasty”.

55 These water-birds have been named geese (WOOLLEY/MALLOWAN 1976: 225) or swans (SPYCKET 1981: 234, 235).

56 The statue, only 29 cm high and from diorite, was found in Room C20—the antecella of the Old Babylonian Ningal Temple—and probably dates to the Old Babylonian period (WOOLLEY/MALLOWAN 1976: pp. 6, 56, 169, 225, Pl. 54); the find context is certainly Old Babylonian: a label of a servant of Hammurabi was found near it (ibid. 56).

57 WOOLLEY/MALLOWAN 1976: 178–179, Pl. 81, no. 151.

58 It has to be stressed that the motif of the crescent moon (or the crescent and disc) on a cylinder seal does not necessarily distinguish the deity depicted aside. However, this is different with terracotta plaques, where astral or other symbols depicted next to the deities were meant to facilitate their identification.

59 At least four model-identical plaques are known (MAXWELL-HYSLOP 1992, Pl. VIIb: U.17163; WOOLLEY/MALLOWAN 1976: 178, Pl. 80, 148: U.7076). WOOLLEY ibid. mentions another model-identical plaque U.978 = OPIFICIUS 1961: no. 244. OPIFICIUS 1961: no. 243 is another model-identical one.

60 ZGOLL (2000: 353) mentions the proposition by C. WILCKE that *ù* was used for *u₅*.



Fig. 9. Ningal enthroned, two geese above her shoulder, plaque from Ur, AH (BM 1927,1003.157) © <http://www.ur-online.org/subject/2332>

bird of Nanna,⁶¹ and u₅-bí bird in the balbale to Nanna (Nanna B).⁶² One month in Ur called “The Eating of the

61 For a discussion of *zirru* see D. CHARPIN in CHARPIN et al. 2020: 196–197. CHARPIN (ibid.: Fig. 2) refers to a Neo-Babylonian cylinder-seal (BM 89311), where the symbol of a bird on a pedestal (evidently the symbol of Ningal) is depicted next to the crescent on a similar pedestal, the divine symbol of Nanna; but its species is difficult to define (hen, goose?).

62 WESTENHOLZ 1989: 541–551; <http://etcsl.orinst.ox.ac.uk/section4/c41302.htm>.



Fig. 10. The goddess on the goose, below her feet a speckled goose with head laid along the body like a goose-weight (MAXWELL-HYSLOP 1992: Pl. VIIb).

u₅-bí bird” is associated with a minor festival for Nanna’s spouse Ningal (SALLABERGER 1993: 195). A relation between Nanše and Ningal in Ur is attested during the Isin-Larsa period in the form of offerings Nanše received together with Ningal (Charpin 1986).

The iconography on cylinder seals gives no clues to any differentiation between Nanše and Ningal. A seal bought in 1886/1887 AD in Zurghul (ancient Nigin, where Nanše’s temple Sirara was situated) shows a priestess being introduced to a seated goddess, in front of which a goose is standing (Fig. 11a).⁶³ Due to the findspot of the seal, it is tempting to identify this goddess as Nanše, al-

63 MOORTGAT 1940: 108, Pl. 36, no. 271. The cylinder seal was acquired by the German Babylonian Expedition of 1886/87 in Zurghul.

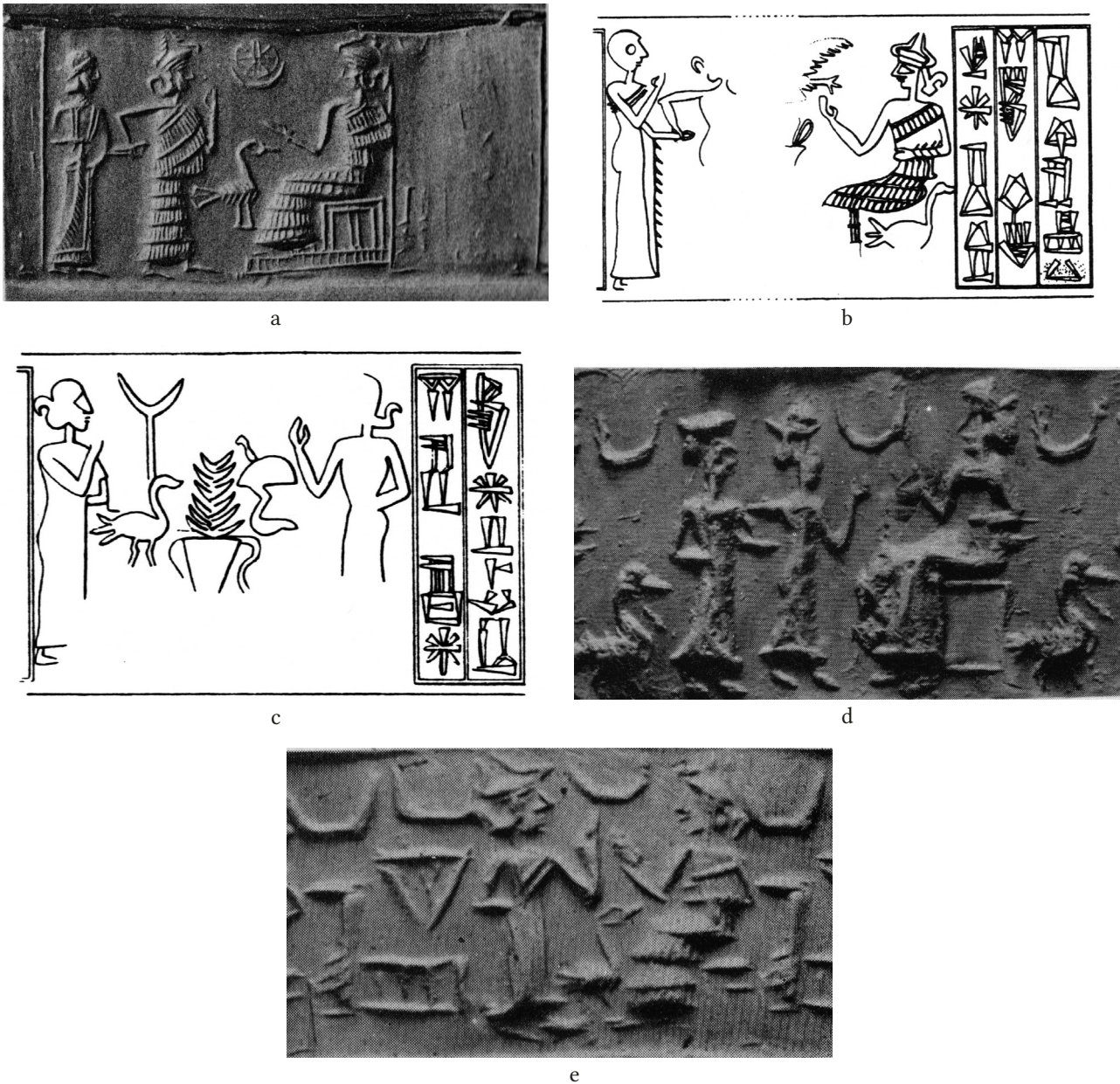


Fig. 11. The goddess with the goose on Post-Akkadian–Ur III cylinder seals from Zurghul/Nigin (a), Lagaš (b–c) and Ur (d–e) (MOORTGAT 1940:Pl. 36, no. 271; FISCHER 1997: nos. 12 and 53; LEGRAIN 1951: Pl. 19, no. 288; Pl. 22, no. 353).

though the priestess resembles the Entu priestesses from Ur. Several seal impressions depicting the goddess on a goose throne or with a goose standard were found on Ur III tablets from Lagaš. Some can clearly be related to Nanše (Fig. 11b), others to Ningal (Fig. 11c).⁶⁴ Many oth-

er seals with similar introduction scenes to the goddess with the goose were found at Ur (Fig. 11d–e)⁶⁵. They depict so prominently the crescent moon near the goddess and the goose that it is difficult to recognise in this goddess anyone else than Ningal.

BRAUN-HOLZINGER (1998–1999: 162) argued that water-birds in connection with goddesses were so frequent-

⁶⁴ FISCHER 1997: 122–125, nos. 10–12, 17 and 53. No. 12 (here Fig. 11b) is associated with the bird of Ningirsu and should depict Nanše. The goose of No. 53 (here Fig. 11c) supports a moon standard and certainly symbolises Ningal.

⁶⁵ LEGRAIN 1951: Pl. 19, no. 288; Pl. 22, nos. 352, 353. There are many more similar depictions on seals from Ur, Tello, and the art market.



Fig. 12. Weight-stone in stele-form (251 g) with votive inscription of Šulgi, who sets the standard for half a mina. Louvre, AO 22187 (THOMAS 2016: 60).

ly attested in Babylonia from the Akkadian to the early Old Babylonian period, that this pictorial representation was not limited to depictions of Nanše. She concluded that the goose-throne referred to a certain aspect of several female goddesses, which could be represented by Nanše at Lagaš and Girsu, but could also be associated with other goddesses in other cities. BRAUN-HOLZINGER did not specify which aspect she meant. In our opinion, this aspect is that of the supreme goddess of a city, whose task was—amongst others—to protect law and order, which often seems to have been the duty of goddesses in the third millennium. Ningal was entitled “the Mistress of Ur”, the “Mother of Ur” and “the Mother of Ur-Namma”, and played an important role in juridical procedures (ZGOLL 2000: 354). For example, an oath before Ningal in the court of Ekišnugal is reported (see UET 6/2 402, which mentions a man who swore inside the main court facing Ekišnugal and facing “Ningal of the Egadi”)—the same area where some reference duck-weights were found by WOOLLEY. Penalty fees paid to Ningal for breach of contract are attested until the first millennium (ZGOLL 2000: 354).



Fig. 13. Weight-stone in stele-form (978.3 g) with inscription stating that it was a copy of a weight that Nebuchadnezzar II had made after the standard of Šulgi, property of Marduk-šar-ilani. BM 91005, acquired 1892 by the British Museum (https://www.britishmuseum.org/collection/object/W_1892-1214-1).

Evidently, Ningal was a guarantor of the accuracy of weights and measures for centuries. The goose probably developed as a symbol of “the correct weight from Ur” during the Ur III period, when Ningal and Nanna as the supreme deities of Ur both were the guarantors of justice. But there is also a stele-shaped official weight-stone decorated with the crescent moon, which Šulgi dedicated to Nanna (Fig. 12).⁶⁶ We may even conclude that this reference weight-stone was part of a set that was kept in the sacred area of Ur for centuries. The inscription on a similarly shaped weight-stone states that Nebuchadnezzar II had made a copy of a standard weight from Šulgi (Fig. 13), pointing to a 1500-year period of display of these reference weights.⁶⁷

But why did the goose and not the crescent moon become the dominant motif of weight stones? The preference for the goose is indicated by a 2 minas goose-weight

⁶⁶ This object was probably kept for centuries in the temple, since there is a Neo-Babylonian weight saying that it was formed after Šulgi’s weight stone.

⁶⁷ https://www.britishmuseum.org/collection/object/W_1892-1214-1. It is interesting that the crescent, Nanna’s symbol, was not copied, but that Marduk’s spade was added instead on one side. This was discussed already by UNGER 1918: XI.

dedicated to Nanna by Šulgi, on which a crescent, Nanna's symbol, was engraved on its left side.⁶⁸ We argue that the goose was the ideal form, since it was related to several female goddesses in Babylonia, who often held a supreme rank in their cities. Since it were mainly goddesses (Nanše, Ningal, Nisaba, Ninlil, Kittum...) and not male gods who were involved in weighing and measuring operations, the goose being associated with female deities would have been a most suitable form. The exception was Šamaš, who had a more general role concerning justice and the smooth running of trade and was occasionally associated with weighing (ROBSON 2008: 114–120), but he too was associated with Ningal being her son and being born in her temple É.NUN at Ur (ZGOLL 2000: 352).⁶⁹ His prominence in this field can be understood as part of the general transformation of the Mesopotamian pantheon from the third to the second millennium, when many goddesses lost their superior positions and their tasks were taken over by male gods (SALLABERGER 2003–2005: 307–308).

Additionally, the goose can also be related to security and protection, and guard geese have been known throughout history until today. It is well known that geese begin to chatter when a foreign person approaches, better than any watchdog (the most famous example being the Geese of the Capitol in Rome). There were in particular two “goose figures” of one talent erected in front of the door called “Protective Goddess” of the Aššur Temple by Erišum.⁷⁰ Perhaps it is not by chance that the “duck-weights” from the North-West Palace at Nimrud were discovered in a doorway (READE 2018: 129 fig. 2, 136–137). An Old Babylonian literary text also refers to a goose-weight (^{na}kur-gi₄) during the building process of a temple for Enki, but without specifying either the exact place or the function of this weight.⁷¹

68 UNGER 1918: XI, XVIf. 23–24, no. 170; found 1894 in Tello.

69 See for example the “duck-weight” dated to the Old Babylonian period and found in Tell Haddad, with its inscription “2 minas, certified (gi-na), belonging to Šamaš” (AL-RAWI 1994: 38). But the weight is not dedicated to the god or symbolically associated with him, as was the case with Nanše, Ningal or even Nanna. It seems that it plays a role in the economic activities linked with the (temples Egina of the) sun god (for example in Sippar/Tell ed-Der or other cities: see CHARPIN 2017: 97–98) during the Old Babylonian period, as the mentioning of the “weights of Šamaš” in legal and administrative documents from Sippar or Kiš (for example YOS 13, 174) clearly shows (STOL 2010).

70 RIMA 1, 20, Erišum i A.O.33.10 13.

71 UET 6 29 + UET 6 498, r. col.i, l. 8'.

Conclusions

It became clear during this study that it is impossible to distinguish between the iconography of Nanše and Ningal. This is understandable only if we accept that Nanše and Ningal were different local deities who had similar divine functions and aspects. They were the supreme goddesses of the water-rich marshy southernmost area of Mesopotamia from Eridu in the west over Ur to Girsu-Lagaš-Nigin in the east, and shared many functions and characteristics, amongst which their responsibility for juridical procedures and righteousness in the economic transactions. Nin-gal—literally “the Great Mistress”, more a title than a proper name—seems to have represented these aspects in Ur, while Nanše stood for them in Lagaš. Therefore, it is not surprising that Nanše and Ningal shared also a similar iconography, except for the crescent moon. The goose, the economically most important water-bird of Southern Mesopotamian wetlands, was associated with these goddesses, named differently in different cities, and its image appeared as their accompanying animal, the icon on their standards, and ultimately the weight-stone under their supervision.

It seems that Nanše, supreme goddess of Lagaš-Girsu-Nigin during the third millennium, had set the trend for goose-weights. Since she guaranteed the accuracy of metrological procedures, her accompanying animal was transformed into a weight-stone for the first time during the Lagaš II-period, as the earliest securely dated “goose-weights” show. Roughly at the same time, or perhaps slightly later, this idea was adopted by the Ur III kings. Their centralised administration needed iconic hallmarks in order to make royal certified weights easily recognisable. With the temple of Ningal (and that of Nanna) in Ur having become the main places of economic and financial transactions with silver, the functions of the goddesses Nanše and Ningal in this field were gradually merged.

Nanše's and Ningal's task as the supreme supervisors of metrological accuracy, correct juridical processes and economic transactions was most visibly expressed by goose-weights, which were immediately recognisable as standing under divine supervision.⁷² It was a touch of genius to choose the goose—the ideal guard animal—as

72 A similar prominent position in metrological and economic procedures can be observed with the goddesses Nisaba and Ninlil, who were mostly associated with scribal arts, including writing, accounting and surveying, in order to measure land justly and accurately (ROBSON 2008: 118).

a symbol for the deities who watched over the righteousness of economic and juridical procedures.

During the Ur III period, other Mesopotamian cities may have adopted this particular shape of a goose, since it was related to both their supreme goddesses—who were as well the guarantors of the financial procedures—and to the royal administration. In the second millennium, when Nanše’s position faded due to the decline of the territory of Lagaš, the goose was associated mainly with Ningal, and goose-weights developed into one of the most characteristic standard forms of reference weights (especially the heavy ones) in South Babylonia and beyond.

The reference weights, often inscribed or marked, were reliable weights used as reference in case of dispute, and were often kept in temples. However, many other goose-

weights for daily purpose were in circulation. While in the beginning this particular shape of weight-stone was used mostly by temple and royal administrators, it soon became one of the standard forms of Babylonian weights, used by merchants and many other people involved in economy. From the Old Babylonian period onwards, the goose-weight developed into a common standard in administrative as well as trade activities. Apparently, the weight-stone shaped like a goose proved to be so successful, that this habit spread throughout the Near East and was continued at least until the Achaemenid period.

Finally, we maybe need to change the idealised vision of “un roi, une loi, un poids” recommended by the ‘cahiers de doléances’ during the French Revolution into “un roi, une oie, un poids” in the case of Mesopotamia...

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The study of weights and measures (metrology) of the Ancient Near East has long been understood as a valuable method for understanding ancient economic interactions and ways of quantification. However, the social value of metrology and the ubiquity of metrological actions and tools has not yet been fully recognized. Weighing and measuring are human processes that involve different people (experts and accountants, dealers and customers) and are based on culturally constructed representations such as the notions of justice, standardization and accuracy.

In this respect, epigraphic and archaeological sources complement each other. The epigraphic sources facilitate an approach towards weighing and measuring practices mainly through the point of view of the administrators of economic and political organisations, while archaeological material remains and depictions in images grant insight into the daily activities of private people involved in trade and exchange, measurement experts and palace or temple staff. The cross-referencing and interlacing of these sources, presented in this book by international experts and young scholars, aims to demonstrate how interdisciplinary studies of weights and measures provide a window on Ancient Near Eastern societies.

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