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# **An Elamite Duck Weight in the Susa Museum: New evidence for the Behbahan Plain in the late seventh/early sixth century BCE**

### **Abstract**

*The importance of the Behbahan plain within the political framework of Elam was assured by its geographic position as a crossroads of routes connecting Susiana, Fars, and the Persian Gulf. However, the only archaeological support cited for this view remains the elite late seventh/early sixth century BCE tomb unearthed near Arjan during the damming of the Marun river in 1982. Another find from the area that adds evidence for the role of the plain at this time is an inscribed limestone duck weight in the Susa Museum, recently published erroneously as coming from Susa. This paper corrects the provenience of the weight, clarifies its date, describes its iconography and manufacture, and contemplates its significance for evaluating the history of the Behbahan plain and the pre-Achaemenid Elamite administration.*

### **Keywords**

*Duck weight, Behbahan plain, Elam, metrology.  
Poids-canard, plaine de Behbahan, Elam, métrologie.*

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## Introduction

In the early 1980s infrastructure works along the Marun river near Arjan on the Behbahan plain exposed a large, inscribed limestone duck weight (fig. 1a, d, 3 top).<sup>3</sup> The weight now resides in the Susa Museum where it has been studied by Loghman Ahmadzadeh and exhibited in the Elam Hall since 2016 accompanied by details of its provenience, approximate date, and a transliteration of its Elamite inscription, *1 gi-um*.<sup>4</sup> Recently, Enrico Ascalone and Gian Pietro Basello (2022) published the weight with a metrological and philological analysis, but gave its find spot in error as the site of Susa.<sup>5</sup> The weight is presented here to correct its provenience, to offer additional comments on its condition, style, and inscription, and to contemplate the evidence it offers for the role of the Behbahan plain in the pre-Achaemenid Elamite administration of southwest Iran.

## Find context

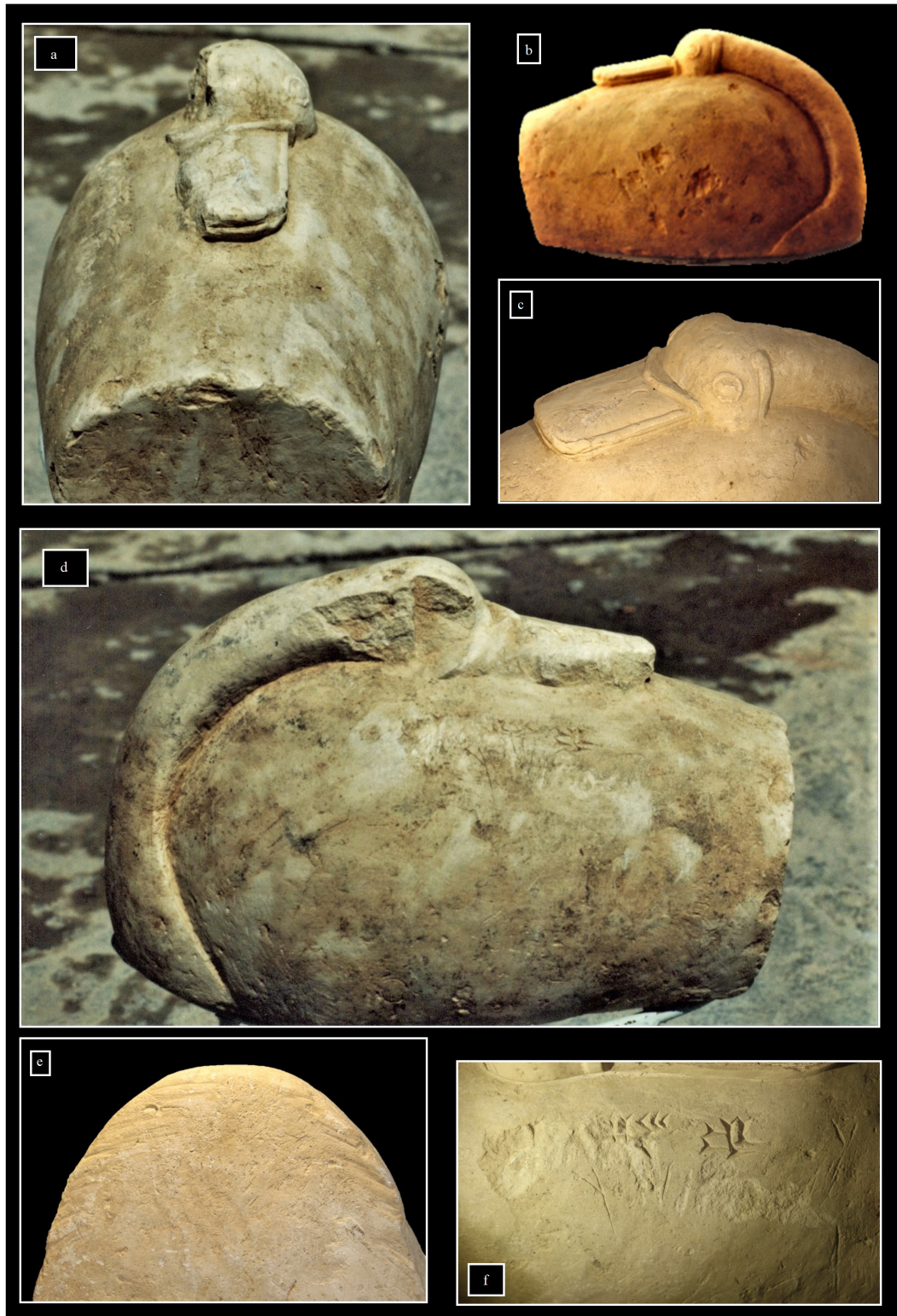
Ehsan Yaghmaie (pers. comm.) discovered the duck weight amongst rubble and undated pottery sherds displaced by earthmoving equipment in the vicinity of the Arjan tomb, which housed an elite adult male in a bronze “bathtub” coffin (tomb published by Towhidi and A. M. Khalilian 1982).<sup>6</sup> Somewhere near the tomb’s surface Yaghmaie also recovered some shattered pottery vessels and a clay tablet apparently

<sup>3</sup> We are grateful to the following Iranian colleagues for generously contributing information, insights, comments, and photographs to help trace the history and significance of the duck weight: Loghman Ahmadzadeh (Director for Research of the Susa World Heritage Base), Yousef Hassanzadeh (Head Curator, National Museum of Iran), Abbas Moghaddam (Assistant Professor at the Iranian Center for Archaeological Research, ICAR), Jebrael Nokandeh (Director, National Museum of Iran) and Professor Ehsan Yaghmaie. In addition, we express our thanks to Enrico Ascalone, Gian Pietro Basello and Wouter Henkelman for reading an earlier draft of this paper. We are also indebted to the ARTA editorial committee for its extensive advice and corrections. Needless to say, we are responsible for any remaining errors.

<sup>4</sup> L. Ahmadzadeh (2016, unpublished) “Duck weight first millennium B.C. from Behbahan, Arjan”, transliteration of the inscription courtesy of the Oriental Institute, University of Chicago.

<sup>5</sup> As a consequence of a cataloguing issue. They did nevertheless observe that the duck was not amongst the hundreds of weights from Susa published by M.-C. Soutzo (1911) and N. T. Belaiew (1934) from French excavations at Susa in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, nor did it appear in the documentation of subsequent French campaigns.

<sup>6</sup> See forthcoming publication by Ehsan Yaghmaie, *History Drowned under Water, Investigating the Ancient Monuments of the Maron Dam Lake, the Tang-e Tak Ab and Arjan-Behbahan* (in Persian).



*Fig. 1. Arjan duck-shaped weight, Susa Museum. Photographs kindly provided by: [a, b, d] Ehsan Yaghmaie and [c, e, f] Loghman Ahmadzadeh, courtesy of the Susa World Heritage Base.*



*Fig. 2. Arjan duck-shaped weight, Susa Museum. Photographs of the partly reconstructed right side by J. Álvarez-Mon (Susa Museum, October 2017).*



related to the Elamite Nineveh letters (see below, *The Behbahan plain in late Neo-Elamite history*). Because the duck weight was no longer in situ upon its discovery, its physical relationship to the tomb and the tablet cannot be reconstructed. But its inscription and style (see below, *Morphology and Style*) suggest that it was fairly contemporary with both of these finds, which date to around the turn of the seventh to the sixth century BCE (Álvarez-Mon 2010). Preliminary surveys of the area around the tomb failed to detect further architectural remains (Towhidi pers. comm. in Álvarez-Mon 2010, p. 20), but presumably the tomb, the tablet, and duck weight had all been linked to a settlement nearby on the plain.

## Condition and restoration

As exhibited today at the Susa Museum, the duck weight appears relatively complete (figs. 1c, 2, 3 bottom). However, upon discovery it was rather damaged. Both sides of the body and the left side of the head carried surface chips, and the right side of the head, a small section of the neck directly behind it, and a portion of the right side of the bill were missing (figs. 1a-b, d). The head, neck, and bill have been reconstructed by conservation specialists. The weight measures 40 x 9.8 x 10 cm and in its present state, with reconstructed sections in an artificial material presumably not exactly matching the original limestone, it weighs 30.710 kg on an electronic scale (Loghman Ahmadzadeh pers. comm.). This is 1.290 kg lighter than the 32 kg given by Ascalone and Basello (2022, p. 39).

## Morphology and style

Carved as a simple body with the head turned to rest on the back in a sleeping pose, the Arjan duck weight exhibits the characteristic duck weight form attested in Mesopotamia as far back as the early third millennium BCE (Rahmstorf 2014, p. 429), and in southwest Iran by the end of the millennium when the Susiana plain was under Mesopotamian control.<sup>7</sup> However, it does incorporate certain features dis-

<sup>7</sup> One of the earliest examples (7.49 g) was uncovered at Tepe Gawra Level VII (Nineveh 5) (Rahmstorf 2014, p. 429). The earliest example from Susa may be a large fragmentary diorite duck weight listed in Roland de Mecquenem's 1932 shipping inventory report with a "25<sup>th</sup> century BCE" (late Akkadian/post Akkadian) date (<https://www.mom.fr/mecquenem/index/inventaires>, no. 3855). Numerous other examples from Susa were dated to the "23<sup>rd</sup>" century and "20<sup>th</sup> century BCE" (respectively, the late Ur III/early Isin-Larsa period and reign of Hammurapi; Mecquenem's chronologies were approximately in line with those of Jacobsen 1939). See also a summary of at least 55 duck weight finds from Susa in Álvarez-Mon (2020, p. 316, n. 166).



tinct from all other known duck weights. The modelling, detailing, and finishing of the top and sides of the duck show an unusual degree of care, even if the underside was left unpolished with a series of parallel lines from the cutting tool (fig. 1e). The well-defined neck does not emerge from about halfway up the body or higher as it typically does on other duck weights. Instead, it emerges from the base of the body and increases in volume until it reaches the head, which is in such high relief that it assumes the appearance of a three-dimensional sculpture. The well-preserved left side (fig. 1a, c, 3 top) has a thick, flat, rectangular-shaped bill with a curved incision marking the nasal opening. A horizontal groove along the side and tip of the bill separates it into a top and bottom part, clearly defining where the mouth opens, whereas in the Mesopotamian examples the bill is rendered as a single (upper) part. The bill's upper surface is bordered by a thick band replicating a feature seen on some duck breeds. This band connects to a high relief band in a slight V-shape demarcating the bill from the head. A wider band emerges from under the chin and ends in a rounded, slightly hooked, clasp-like terminal behind the eye, an additional detail absent from other duck weights. The eye, which is completely circular in contrast to the incorrectly reconstructed flat-based right eye (fig. 3 bottom), is also delineated by a relief band.

The deployment of thick relief bands to define various elements is typical of late Neo-Elamite artistic production, finding comparisons across a range of media. The closest are the duck-head feet of two metal candelabra from an early to mid-sixth century BCE tomb of two elite female interments in bronze “bathtub” coffins discovered near Jubaji on the neighbouring plain of Ram Hormuz in 2007 (Shishegar 2015; Wicks 2019, pp. 46-47). The best-preserved ducks have thick relief bands defining the eyes, a horizontal band separating the bill from the head, and possibly a band with rounded terminals rising from under the neck (fig. 4a, 4b).<sup>8</sup> Similar bands can be seen crossing the top of the nose, encircling the neck, running from under the chin to the ears (sometimes representing hair), and outlining the eyes in the rich Neo-Elamite animal iconography on faience tiles and vessels at Susa (Álvarez-Mon 2020, Pls. 172, 173, 181, 182) (fig. 5). These peculiar stylistic features were later integrated into the monumental Persian capitals in the form of hair bands and neck collars with rosettes (e.g., Schmidt 1953, p. 127, fig. 61C-D).

<sup>8</sup> In one case, the depiction of what look like ears may suggest a different animal (fig. 4c). The candelabra await in-depth study.



*Fig. 3. Details of the head of the Arjan duck-shaped weight, Susa Museum. Photograph of the left side kindly provided by Ehsan Yaghmaie; photograph of the partly reconstructed right side by J. Álvarez-Mon (Susa Museum, October 2017).*



Fig. 4. Jubaji candelabra. Photographs by J. Álvarez-Mon in collaboration with the National Museum of Iran.





Fig. 5. Examples of Neo-Elamite animal iconography on faience and/or frit tiles and vessels from Susa and a bronze candelabrum from Jubaji. Photographs J. Álvarez-Mon.



## Inscription

Chiselled into the upper left side of the body just below the bill is a horizontal inscription composed of three signs (figs. 1f, 3 bottom). The first sign is a single vertical wedge representing the number one. This sign has been damaged and no horizontal wedge has been preserved to its left despite the tentative suggestion of Ascalone and Basello (2022, pp. 51-53).<sup>9</sup> The next two signs, *gi-um*, are in the forced broken writing (Ascalone and Basello 2022, pp. 51-52) typical of Elamite orthography from the sixth century BCE (Tavernier 2004, pp. 32-36). Given its context—i.e., following a number in an inscription on a duck weight—*gim* must be a unit of measurement.

The horizontal arrangement of the inscription and its placement on the left side of the body contrast with second millennium BCE duck weights from Susa, which carry their inscriptions in a vertical arrangement on the right side of the body (Ascalone and Basello 2022, p. 60). The only inscribed duck weight from Susa exhibiting the same placement and arrangement is a fragmentary bituminous stone specimen with an inscription giving its weight as 3 minas (*h.* 8.4 cm, *w.* 11.7 cm, preserved *l.* 11 cm, preserved weight 1,170 g) (fig. 6) (Connan and Deschesne 1996, p. 272). The sign forms suggest that this weight also dates to the seventh or even sixth century BCE (Ascalone and Basello 2022, p. 60).<sup>10</sup> The rendering of the neck, which emerges from underneath the body, and the horizontal line demarcating the upper and lower part of the bill are reminiscent of the Arjan duck weight. But the execution is rougher, and the far more rounded body, the curved bill, the use of incised lines rather than relief bands to define details, and the placement of the band separating the head and bill high on the face connecting the eyes may be local Susian variations.

## Administrative context

The inscribed Arjan duck weight manifests the interactions between material culture and various elements of the “scribal package”—namely, metrology, numeracy, and literacy—at the service of the Elamite administration.<sup>11</sup> Given its approximate weight, the unit of measurement *gi-um* is most likely the talent (Akkadian *biltu*, often

<sup>9</sup> The damage to the upper right side of the duck with the inscription was likely caused by heavy machinery when it was unearthed, and not an intentional erasure of the first sign as tentatively suggested by Ascalone and Basello (2022, p. 53).

<sup>10</sup> Connan and Deschesne (1996, p. 271, no. 252 [=Soutzo 1911, p. 6, no. 1245]) dated this weight to the mid-second millennium BCE without any stated grounds.

<sup>11</sup> These interactions are noted by Grégory Chambon (2011, p. 52) for Mesopotamia.



*Fig. 6. Bituminous stone duck weight from Susa, Louvre Museum catalogue no. Sb 9346. Photographs from the Musée du Louvre Collections, Antiquités Orientales (under Creative Commons License; <https://collections.louvre.fr/en/ark:/53355/cl010128121>).*



written logographically as GÚN), which equalled  $30 \pm 2$  kg (Powell 1990, pp. 508, 516). Proceeding from an overstated weight of 32 kg, Ascalone and Basello (2022, pp. 39-42, 54) suggest that it demonstrates the use of an Assyrian heavy mina standard of about 1,070 g in Elam.<sup>12</sup> Julian Reade (2018, pp. 158-62) has postulated the existence of this particular heavy mina standard at Nimrud, Nineveh, Erbil and other northern centres from the time of Tukulti-Ninurta II (890-884 BCE) to Tiglath-Pileser III (744-727 BCE). After Tiglath-Pileser III the Babylonian heavy mina standard of 1,000-1,020 g was instead employed, but the 1,070 g standard may have re-emerged in the sixth century BCE (Reade 2018, p. 177).<sup>13</sup> The original weight of the Arjan duck is impossible to restore, but its current weight of 30.710 kg does not facilitate a match with either standard. It is too heavy for the maximum 30.6 kg talent ( $30 \times 1,020$  g) following the Babylonian heavy mina standard. But given the relatively small portion of the original weight missing it was likely too light for the 32.1 kg talent ( $30 \times 1,070$  g) following the northern Assyrian heavy mina standard.

Ascalone and Basello (2022, pp. 46-47, nt. 80, p. 61) compare the Arjan duck weight to a fragmentary inscribed 15-mina weight of the household of Tiglath-pileser III from Nimrud (fig. 7),<sup>14</sup> and hypothesize its production in a local Elamite workshop for a central administration sometime between 647 BCE when “Susa became an Assyrian province” after its sack by Ashurbanipal (668-627 BCE) and 623/622 BCE.<sup>15</sup> However, this suggestion no longer fits the provenience of the weight, and, as the authors themselves concede, the weight exhibits morphological and stylistic divergences from Neo-Assyrian duck weights. Moreover, the theory put forward by G. Cameron (1936, p. 211) that Susa, Susiana, or even Elam in its entirety was annexed as an Assyrian province has never found supporting evidence. A failed earlier attempt to subject Elam to Assyrian authority makes a successful one unlikely in a period when the empire’s power was waning (Henkelman 2008, p. 15), and there are no signs of discontinuity in Susa’s archaeological record consistent with heavy destruction and implementation of a new administration. Nor has any documentation belonging to an Assyrian admin-

**12** In the Assyrian systems, the shekel, mina, and talent existed in (at least) two versions, light and heavy, with a 1:2 ratio between them (Reade 2018, p. 177).

**13** Reade’s proposal is based on the weak evidence of a single triangular-profile duck weight from Khirbet Qasrij northwest of Nineveh *possibly* representing a 1/4 fraction of a mina of 1,075.6 g (Curtis 1989, pp. 25-26, Pl. XII, fig. 21).

**14** This inscribed weight was found amongst the debris of the outer chamber leading to the “Queen’s” Tomb III (see Hussein 2016, p. 27, Pl. 94a, ND 1989.471; translation of inscription Al-Rawi 2008, text 8).

**15** “Gorris [sic] and Wicks 2018, pp. 253-55” (omitted from bibliography but see here Gorris and Wicks 2018) are cited incorrectly in support of the theory that Elam became an Assyrian province: on the contrary, they dispute it.



istration at Susa been found. Conversely, there is clear evidence for a revival of local Elamite rule soon after the sack of Susa (Steve, Vallat and Gasche 2002, p. 478; Potts 2016, p. 283; Gorris and Wicks 2018, p. 254; Gorris 2020, pp. 58-60). While the influence of Assyrian royal culture manifests in Elamite elite material production, perhaps most obviously in the luxury artefacts deposited in the Arjan tomb (Álvarez-Mon 2004, 2008, 2010, 2011; Wicks 2015), this was not the outcome of a prior Assyrian rule but rather of close Elamite-Assyrian interactions, particularly in the reigns of Esarhaddon (681-669 BCE) and Ashurbanipal.

The inscription on the duck weight and its stylistic elements unique to late Neo-Elamite artistic production argue for its manufacture around the late seventh/early sixth century BCE by a local Elamite administration post-dating the collapse of the Assyrian empire. It was natural enough that this administration, which also produced the inscribed 3 mina bituminous stone duck weight from Susa, had incorporated the Mesopotamian metrological systems used more broadly in the Near East. This follows on from earlier periods at Susa and at the Elamite highland capital of Anshan (Tal-i Malyan) where Elamite administrative texts written probably around the late second millennium BCE document metals in the common Mesopotamian units of talent, mina, and shekel (Stolper 1984b, pp. 9-10). Besides the use of these fairly widespread units, most of the weights recovered from early to mid-second millennium BCE contexts (often burials) at Susa when the city was under Elamite rule replicate Mesopotamian



*Fig. 7. Assyrian duck weight from Nimrud with an inscription of Tiglath-pileser III (744-727 BCE). After Hussein 2016, Pl. 94a.*



shapes, materials and standards, with no discernible attempt to develop independent local standards (Belaiew 1934; Ascalone and Peyronel 1999, pp. 363-67; Basello and Ascalone 2018, pp. 708-710).

Regarding the use of the weight, *gi-um* appears following a number in measures of iron (MDP 9 141:5) and incense (for a king) (MDP 9 174:2) in the Susa Acropole tablet corpus,<sup>16</sup> which documents a Susa-based early to mid-sixth century BCE administrative network extending its interests up the edge of the Persepolis plain. The word later appears twice after the number 10 in an unclear context in a tablet from the Persepolis Fortification Archive (PF 1856:13/14, 18/19),<sup>17</sup> which covered a wide common area with the Susa Acropole tablets and expressed the same administrative tradition (Basello 2018, pp. 235, 241; Ascalone and Basello 2022, pp. 54-56, 58-59).<sup>18</sup>

Persepolis has also yielded two, much smaller, examples of the duck weight form, one in stone (42 g) and the other in bronze (58.65 g). Metrological considerations are not possible since neither duck is well-enough preserved to establish its original weight (Schmidt 1957, pp. 105, 107; Pl. 82, nos. 3-4). However, almost all of the texts from the treasury where the ducks were found attest to the use of a unit denominated *kuršam* in Elamite (Old Persian *krša*) weighing 83.33 g. This unit equated to 10 Elamite *pansukaš* (Old Persian *\*pančuka-*) of 8.33 g each following the Babylonian shekel standard (Cameron 1948, p. 37; Cameron and Gershevitch 1965, p. 183; Hallock 1969, pp. 717, 740; Tavernier 2007, pp. 450-451; Ascalone and Basello 2022, p. 49). A. D. H. Bivar (1985, pp. 621-623) proposed that *kuršam* and another Achaemenid-era weight unit denominated *dānaka*, weighing 1/8 of a shekel, belonged to an ancient Iranian metrological system. But at the same time Bivar observed that “The Babylonian system, as reformed by Darius the Great, remained the essential basis of the Achaemenid standards of weight and coinage” (Bivar 1985, p. 625). A perfectly preserved Achaemenid-era 121 kg cast bronze recumbent roaring lion weight of about four Babylonian talents has been recovered from Susa (Louvre Museum Sb 2718; Lampre 1905; 172; Reade

**16** In two other occurrences the commodity is not preserved: MDP 9 201:1-2 and MDP 9 230:5 (MDP 9 = Scheil 1907).

**17** The exceptional tablet is a royal order regarding the issue of rations to six Babylonian men who “are removing the dead” (Hallock 1969, pp. 8, 47, 510; Tuplin 2008, p. 321). The word *gim* appears without a preceding number at least 157 times in category PF C1 texts documenting quantities of fruits (dates, figs, mulberries, etc.) and grain “placed on him (as *gim*)” (Stolper 2021, p. 3). It has been variously translated in the sense of “(in) trust”; “(for) safekeeping”; or as “load” in the sense of “credit, balance” or “account”; or perhaps as “weight, burden” (Hallock 1969, pp. 14, 713; Tuplin 2008, pp. 343, 347, 352, 353, with references; Henkelman and Stolper 2021, p. 175, n. 5; for discussion of C1 documents see now Stolper 2021).

**18** The adoption—and adaptation—of the Elamite administration by the Achaemenids in a Persian environment in highland Fars has been further discussed by Henkelman (2018, pp. 803-16).



2018, p. 151).<sup>19</sup> Its basic lion-with-handle morphology is Assyrian, but its details are specific to Achaemenid style and manufacture (Morgan 1902, pp. 97-98; Muscarella 1992, pp. 221-22, no. 154).

## The Behbahan plain in late Neo-Elamite history

The fertile Behbahan plain represented “the geographically easiest and best connection between the middle and lower plains of Khūzestān and the Marv Dasht plain of Fārs” (Nissen 1976, p. 275), and is presumed to have been an important contact zone between these core Elamite areas (Dittmann 1984, p. 76).<sup>20</sup> The duck weight adds to an increasing body of evidence for the role of the Zagros foothill areas, including the neighbouring Ram Hormuz plain, as Elamite power bases during mid-seventh century BCE conflict with Assyria when the exposed Susiana plain became less tenable for royal residence (Stolper 1984a, p. 47). Increasing pressure in the seventh and six centuries BCE not only from Assyria to the west, but also the Medes to the north and the Persians to the east perhaps necessitated the establishment of these areas as core Elamite zones (Wright and Carter 2003, p. 72). The Arjan tomb has remained the only evidence for a Neo-Elamite presence on the Behbahan plain, since pottery sherds of the period were not recognized during a survey by Hans Nissen (1976; Nissen and Redman 1971). However, given that the survey was carried out under heavy time and space constraints (Moghaddam 2008, pp. 12-13 [ref. to Nissen pers. comm.]) and pre-dated the establishment of a reliable Neo-Elamite ceramic sequence at Susa by Pierre de Miroschedji (1978, 1981a, 1981b), any relevant material may simply have been overlooked (Carter 1994, p. 72; Alizadeh, Ahmadzadeh and Omidfar 2014, p. 240).

The duck weight now underlines the importance of the Behbahan plain, and particularly the Arjan area in the late seventh/early sixth century BCE Elamite administrative network. To this evidence can be added snapshots of its political history offered by the clay tablet found near the surface of the Arjan tomb. From a provisional

<sup>19</sup> The lion weight was found in the Acropole mound during the 1900-1901 campaign of Jacques de Morgan and Georges Lampre. It lay in “a kind of gallery delimited by two mud-brick walls” at the same level and one meter distance from a second bronze weight of slightly over 93 kg fashioned in a knucklebone-shape with handles and a Greek inscription (Lampre 1905, p. 171; Haussoullier 1905, p. 161, n. 5).

<sup>20</sup> During the Sassanian and classical Islamic periods, the fertile Behbahan region and its city of Arrajan, which preceded Behbahan as a local center and emporium of trade down to medieval times, were known as “the storehouse for Persia and Mesopotamia... an extremely pleasant city, rich in water, cereals, dates, grapes, olives, oil, lemons, and nuts (Álvarez-Mon 2010, pp. 14-15 with references). For additional comments on the plain see Moghaddam and Miri (2007, p. 41), and Moghaddam (2008, p. 39).



examination of its poorly preserved text, François Vallat judged that it is a letter from a certain Bahuri, son of Mazzini, to an otherwise unattested individual named Bila, and that based on its content and language it is linked to the Elamite Nineveh letters centred on an individual of the same name and patronymic who claims to have founded a new dynasty in “Zamin of Elam” (pers. comm. with J. Álvarez-Mon 2-12-2008; Álvarez-Mon 2010, p. 166). The Nineveh letters, which preserve glimpses of Bahuri’s relations with various local rulers within and surrounding the Elamite kingdom (Gorris 2018), filtered into the British Museum collections between 1848 and 1891, apparently deriving from the activities of four different archaeologists at Nineveh (Dalley 1993, p. 143). They appear to be coeval with two other closely related tablets recovered from Susa (Vallat 1998, p. 96, fn. 6) and the Susa Acropole tablets (Scheil 1907, p. II; Vallat 1984, p. 5; 1996, p. 393; 1998, pp. 99-100; Tavernier 2004, p. 39). They share the same distinctive “forced broken writings” in a fully completed state that was not reached before the early sixth century BCE (Tavernier 2004, pp. 19, 32-36). The late date of these Elamite documents, whose presence at Nineveh remains inexplicable, seems to link them to an occupation of the city after it was sacked in 612 BCE (Miroshedji 1982, pp. 60-61; Stolper 1984a, p. 54; Dalley 1993, pp. 143-44).<sup>21</sup> The discovery of one of Bahuri’s letters on the Behbahan plain highlights its position within the complex late Elamite political structure relying on a network of local rulers bound by loyalty to the king of Anshan and Susa (Henkelman 2003; 2008, pp. 11-16; Gorris and Wicks 2018, p. 255).

Long ago, Walther Hinz (1960, pp. 250-51) nominated the Behbahan plain as the probable location of the royal city of Hidali/Hidalu, a Neo-Elamite stronghold ruled by a “king of Hidali” and one of three main Elamite royal residences alongside Susa and Madaktu.<sup>22</sup> The Susa Acropole tablets document Hidali amongst the settlements embraced by the Susa-based administration (Basello 2018, p. 238).<sup>23</sup> And already “a locus for encounters between Elamites and early Persians from the highlands” (Henkelman 2017, p. 97), it would remain an important settlement with its own treasury along the road from Persepolis to Susa in the Achaemenid period (Basello 2018,

**21** A mention in one of the letters (Nin 13:3-4) of a “king of Assyria”, the last attested of whom is Ashur-uballit II (defeated 609 BCE), was dismissed by Vallat (1998, p. 98) as proof of an earlier date on the grounds that Assyrians are mentioned numerous times in the sixth century BCE Susa Acropole tablets.

**22** The political status of the “king of Hidali” is unclear (Henkelman 2003, pp. 254-55; 2008, pp. 12-13; Gorris 2020, pp. 43-45, 177-78).

**23** Henkelman (2008, pp. 39, 42, 337-338) has suggested that in the mid-seventh century reign of the Elamite king Tammaritu (652/1-650 BCE; dates following Gorris 2020, p. 47) Hidalu served as a base for Babylonian merchants, as it did later under Achaemenid rule. Any potential involvement between these merchants and the Elamite administration is not documented.





p. 239; Henkelman 2017, pp. 97–98, fn. 73–74). The suggestion that Hidali could have been in the Behbahan area—which has a flat terrain and relatively low elevation of about 300 m asl—has been rejected based on a literal reading of the Assyrian king Sennacherib’s (705–681 BCE) account of his invasion of lowland Elam, whereby he compelled its king Kutir-Nahhunte II to leave Madaktu and seek refuge in Hidali “which is in the mountains, far away” (e.g., Potts 2005, pp. 173–75; 2008, p. 291; Henkelman 2008, pp. 499–501).<sup>24</sup> However, the Behbahan region stretches to the foothills of the mountains, which rise dramatically by around 500 m from the edge of the plain and may have offered safety in the event of an attack. Or, alternatively, Wouter Henkelman (2017, p. 97, fn. 70) contemplates “the nearly-impenetrable hilly terrain that intervenes between the Behbahān region and lowland Khūzestān as answering to this description”, adding that the site of Tol-e Homayun in the area of the Arjan tomb would seem fitting, at least in terms of its size, for an important Elamite centre.<sup>25</sup>

## Conclusion

Manufactured around the turn of the seventh to the sixth centuries BCE, the large, one talent (1 *gi-um*) Arjan duck weight belongs to a distinctive, well-represented category of artefacts at home in southwestern Iran since at least the later third millennium BCE. Together with the contemporary inscribed bituminous stone duck weight from Susa, it reaffirms the longevity of the duck weight tradition in the western Elamite urban centres. Its discovery on the Behbahan plain underscores the

<sup>24</sup> Sennacherib 18: iv 6”; 22: v 4; 23: iv 75; 34: 41; 35: o 22’; 230: 38; [RINAP] [Oracc Search: *Hidalu*]: <http://oracc.museum.upenn.edu/rinap/corpus/>, accessed 11/08/2022 (created by K. Grayson and J. Novotny 2013–2014). The later king Ummanaldashu (Humban haltash III) is similarly said to have abandoned Madaktu “naked and ascending the mountain” in the reign of Ashurbanipal, but here Hidali is not mentioned: Ashurbanipal 7, iii 44’; 8, iii 15’, 8, x 10’; 9, iii 62; iv 53b; 10, iii 5; 10, iv 36; 11, v 11; 11 v 111; [RINAP] [Oracc Search: *Hidalu*]: <http://oracc.museum.upenn.edu/rinap/corpus/>, accessed 11/08/2022 (created by J. Novotny and J. Jeffers 2015–18). Ashurbanipal’s annals placed Elamite Huhnur at Hidali’s border. Huhnur has been identified by Behzad Modifi-Nasrabadi (2005) with Tepe Bormi on the neighbouring Ram Hormuz plain based on a confiscated stone inscription of the time of the Ur III ruler Amar-sin (c. 2046–2037 BCE) said to have been found there. If this identification of Huhnur were correct, as Henkelman (2017, p. 97, fn. 70) still believes is likely, Hidali’s location on or near the Behbahan plain would be reasonably certain. But even if it were incorrect, as Abbas Alizadeh (2013; Alizadeh, Ahmadzadeh and Omidfar 2014, p. 238, fn. 34) argues on the grounds that the numerous surveys in the area have detected no evidence for settlement between 2800 BCE and 1900 BCE, this still does not rule out the possibility that Hidali was situated on the Behbahan plain.

<sup>25</sup> For further discussion of Hidali’s location see Álvarez-Mon 2010, pp. 17–20; Stolper 2020.



significance of the area as an administrative centre connected to the larger Susa-based late Neo-Elamite network, which by the late sixth century BCE had been inherited by the Persian empire.

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