

Proto-Elamite Culture in Light of the Newly Analysed Proto-Elamite Tablet from the State Hermitage Museum

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Received: 0/ 0/ 0; Received in Revised form: 0/ 0/ 0; Accepted: 0/ 0/ 0; Published: 0/ 0/ 0

Abstract

The period, approximately between 3300 and 2700 BCE in Iran, is known as the Proto-Elamite Period, and the culture associated with this timeframe is referred to as the Proto-Elamite Culture. Centred in southwestern Iran, this culture has been identified at several archaeological sites, most notably Susa and Anshan. Excavations at Susa, which began in the mid-19th century, and those at Anshan, initiated in the mid-20th century, have yielded significant findings related to the Proto-Elamite Culture. Among the most important discoveries are the Proto-Elamite clay tablets, which provide insights into the socioeconomic structure of the Period. These tablets were written in the Proto-Elamite script, recognised as the first writing system developed in Iran. They contain records pertaining to agriculture and animal husbandry, calculated using various accounting methods. This study examines an unpublished Proto-Elamite tablet housed in the State Hermitage Museum. It offers detailed observations and interpretations of the inscriptions and signs on the tablet. Furthermore, it compares the tablet with other Proto-Elamite tablets, noting similarities and differences. The tablet in question records information about small livestock herds, specifically goats and sheep. As it contains details related to animal husbandry, its content aligns with that found in other Proto-Elamite tablets. This study aims to advance research on the Proto-Elamite period by providing a decipherment of the Proto-Elamite tablet preserved in the State Hermitage Museum. It utilises archaeological excavation reports and various modern scholarly works to enhance our understanding of this significant cultural period.

Keywords: Proto-Elamite Period, Proto-Elamite Culture, Proto-Elamite Tablet, Susa, Anshan.

Introduction

Among the leading archaeological and historical centres of southwestern Iran, Susa and Anshan hold particular significance. The Mesopotamian culture, which influenced Iran during the Uruk period, experienced a decline in its impact following the end of the Uruk era. Especially in the lowland and highland regions of southwestern Iran, such as Susa and Anshan, an indigenous culture began to emerge (Miroschedji 2003: 24). This cultural phase, known as the Proto-Elamite period, is believed to have started around 3300 BCE (Alden 1982: 613; Helwing 2013: 93) and lasted until approximately 2700 BCE (Abdi 2017: 8; Abdi 2003: 140).

1. Proto-Elamite Clay Tablets

The proto-cuneiform clay tablets found in the Uruk IVa layer provide important clues about the invention of writing. However, examples of stages leading to the invention of writing have been found in greater numbers in Susa than in Uruk. A large number of bullae, tokens, and clay tablets discovered in Acropolis I 18-17 in Susa have shed light on this development (Brun 1978: 177-192; Brun and Vallat 1978: 11-70; Dahl 2012: 2; Vallat 1986: 335-336; Bottero et al 2000: 71). For example, the 432 tokens discovered constitute the largest collection ever found in a single settlement in both Iran and Mesopotamia (Shendge 1983: 134). Following the invention of bullae and tokens, clay tablets with Proto-Elamite inscriptions were created. Numerical tablets appeared in the 18th layer of the Acropolis area, while numerical-ideographic tablets were invented in the 17th layer (Pittman 1997: 137; Desset 2016: 91; Vallat 1986: 336-337). The early numerical tablets have been dated to between 3400 and 3350 BCE, while the late numerical tablets are placed between 3350 and 3300 BCE, and the numerical-ideographic tablets are roughly dated to around 3300 BCE. Early numerical tablets are typically round and flat, whereas late numerical tablets and numerical-ideographic tablets are rectangular and flat (Englund 2005: 122; Blazek 2002: 123; Hessari 2020: 7-8; Pittman 1997: 137; Vallat 1986: 336; Hessari 2011: 36-38).

2. Proto-Elamite Tablet in the State Hermitage Museum

The Proto-Elamite clay tablet we examined contains intriguing information. This tablet is part of the extensive collection of Nikolai Petrovich Likhachev (1862-1936), a member of the USSR Academy of Sciences and a renowned Russian scholar and collector

(Khvalkov et al 2019: 2-20; Dahl 2025: 86). It was incorporated into the collection of the State Hermitage Museum in 1938. Unfortunately, there is no information available regarding how or from where Nikolai Petrovich Likhachev acquired the tablet. This previously unpublished tablet is registered under Inventory No. 15777 at the State Hermitage Museum in Saint Petersburg (Dahl 2025: 86). We obtained the photographs of the tablet with official permission from the museum. Based on additional information provided by the museum and the photographs, several observations and interpretations were made. Given that the vast majority of Proto-Elamite tablets have been discovered at Susa, likely, the Proto-Elamite tablet in the State Hermitage Museum was also unearthed there. The tablet measures 7.5 x 4.2 cm (Figure.1). Notably, no seals were found on any part of the tablet, and there were no markings on the back (Figure .2). The Proto-Elamite script symbols on this tablet were compared with the lists of Proto-Elamite symbols compiled by Scheil (Scheil et al 1905: 83-114), Mecquenem (Mecquenem 1949: 44-150), Piero Meriggi (Meriggi 1974: 6-24), and Jacob Lebovitch Dahl (Dahl 2019: 186-227; Dahl 2005: 125-126). This comparison revealed that the calculation system used on the tablet is known as the Decimal System D (Dahl 2019: 76).

An examination of the records on the clay tablet indicates that the numbers of goats and sheep in two separate herds were documented. In the first herd, indicated by the sign M122b (Mecquenem 1949: PL. XLIV; Meriggi 1974: 12), there are 51 adult female goats (M362) ($5 N_{14} + 1 N_1$) and 6 adult male sheep (M006) ($6 N_1$). The second herd, starting with the sign M387xM003a, contains 47 adult female goats (M362) ($4 N_{14} + 7 N_1$). The lower left portion of the tablet, where the continuation of the second herd's record appears, is broken, resulting in several missing signs. Within this broken section, there are at least 4 adult female sheep (M346) ($4 N_1$). It is estimated that there were an additional 3 ($3 N_1$) or 4 ($4 N_1$) adult female sheep (M346). Accordingly, it is estimated that the broken section originally contained a total of 7 ($7 N_1$) or 8 ($8 N_1$) adult female sheep (M346). Ultimately, it is estimated that the second herd, in addition to the 47 adult female goats (M362), contained either 7 ($7 N_1$) or 8 ($8 N_1$) adult female sheep (M346). Based on these assessments, the two herds together contain a total of 98 adult female goats (M362). Moreover, the presence of 6 adult male sheep is confirmed. Considering the possibilities in the broken section, the tablet likely records an additional 7 or 8 adult female sheep, beyond the 6 adult male sheep already attested. Thus, the total number of adult sheep in the two herds is estimated to be 13 or 14. In total, the small

livestock recorded on the tablet amounts to either 111 or 112 animals. The calculation of goats and sheep on the tablet can be summarised as follows:

First Herd (M122b)

M362 5 N₁₄ + 1 N₁ = 51

M006 6 N₁ = 6

Second Herd (M387xM003a)

M362 4 N₁₄ + 7 N₁ = 47

M346 7 N₁ or 8 N₁ = 7 or 8

Total of Two Herds

51+6+47+7 or 8= 111 or 112

The transliteration of the tablet is as follows:

Obverse

1. M122b M362, 5(N14) 1(N1)

2. M006, 6(N1)

3. M387xM003a M362, 4(N14) 7(N1)

4. M346, 7(N1) or 8(N1)

Reverse

Blank space

On the other hand, the sign M122b appears on two Proto-Elamite clay tablets excavated at Susa. It is clearly visible and ideographic in nature on Tablet No. 142 from MDP 17 (Scheil 1923: PLXXIII) (Figure .3) and Tablet No. 382 from MDP 26 (Scheil 1935: PLXLIII) (Figure .4). The ideographic sign M387xM003a is formed by inscribing the sign M003a within the sign M387, which means it is created by combining two distinct signs. Signs of this type belong to the group of complex graphemes within the Proto-Elamite writing system (Dahl 2005: 1-15). Despite a comprehensive examination of all Proto-Elamite tablets available on the Cuneiform Digital Library Initiative (CDLI) website, the sign M387xM003a has not been attested on any other Proto-Elamite tablet. In addition, the two dotted 1 (N1) signs occurring within the 6 (N1) notation on the tablet have not been identified on any Proto-Elamite tablets recorded in the CDLI database.

Figure 1. Obverse of Proto-Elamite Clay Tablet in the State Hermitage Museum



(Photograph © The State Hermitage Museum, St. Petersburg)

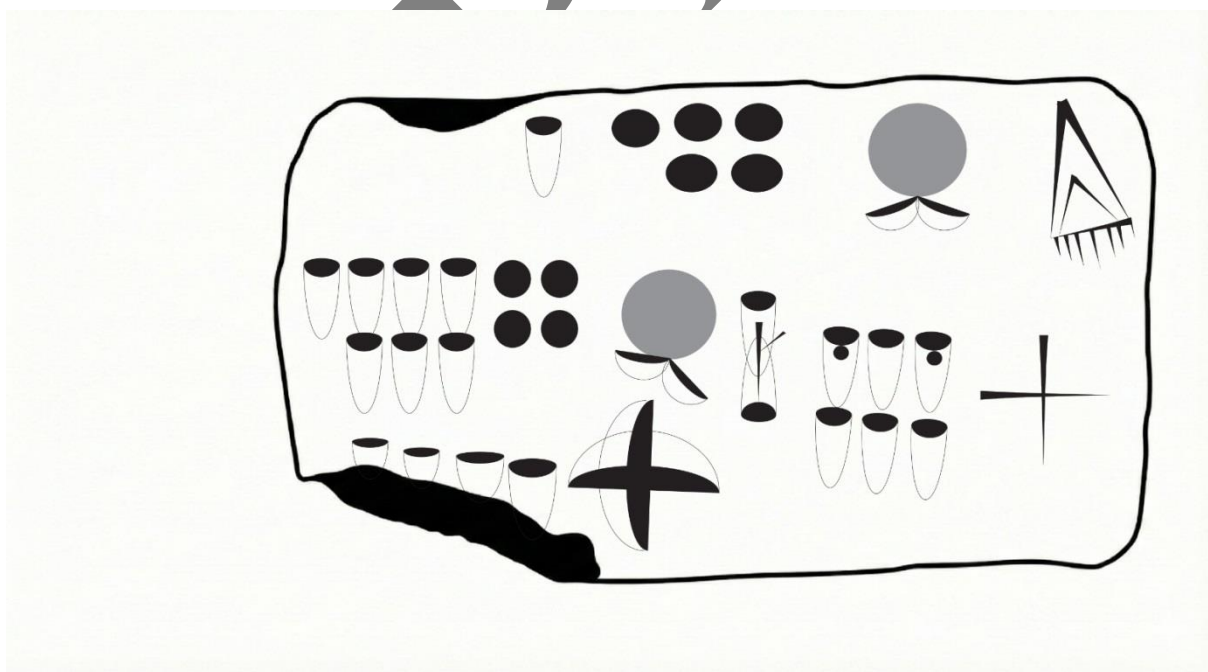
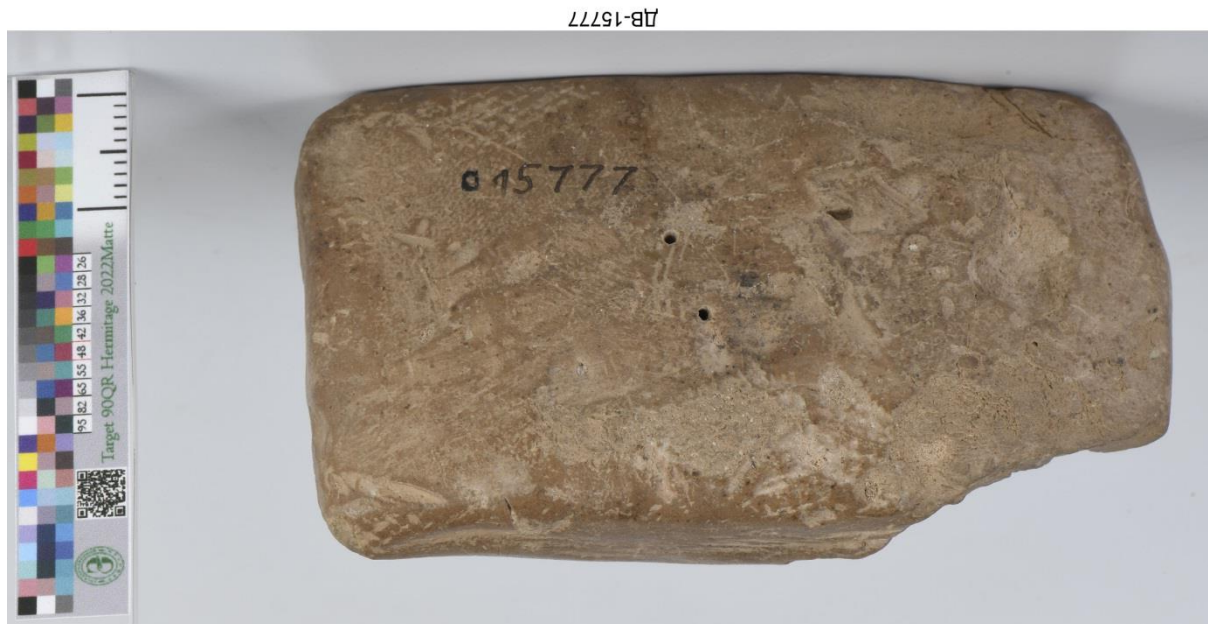


Figure 2. Reverse of Proto-Elamite Clay Tablet in the State Hermitage Museum



(Photograph © The State Hermitage Museum, St. Petersburg)

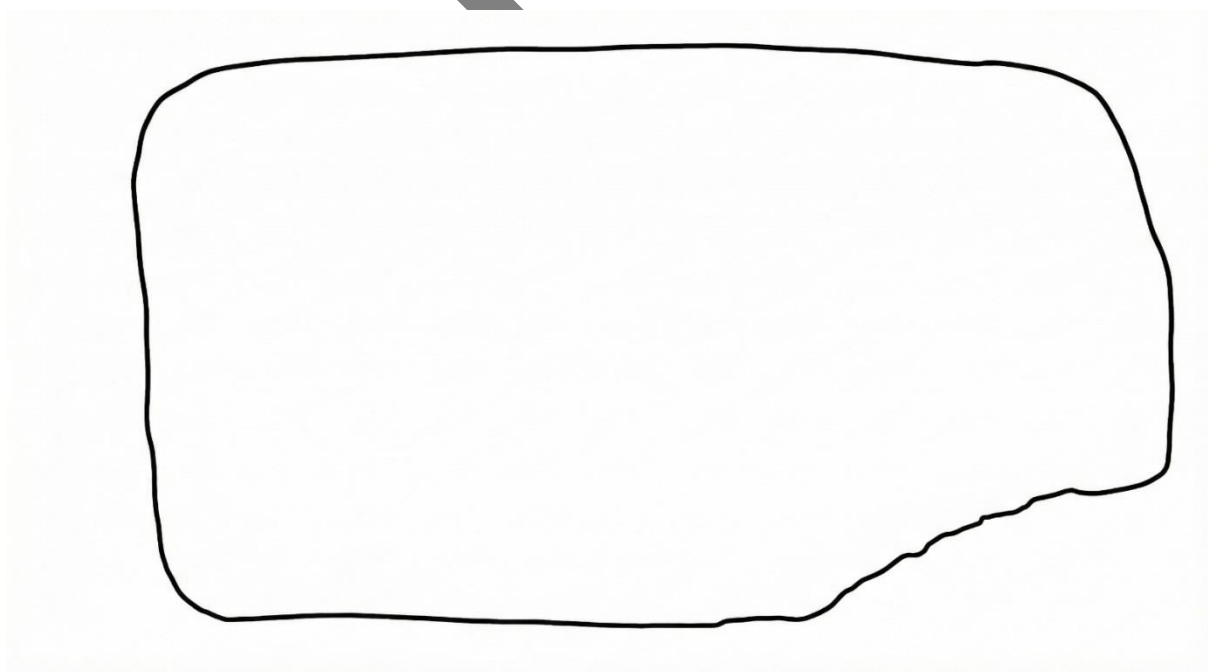


Figure 3. Proto-Elamite Clay Tablet No. 142 in MDP17



(<https://cdli.earth/artifacts/8340/reader/95160> Image © Louvre Museum, Paris, France)

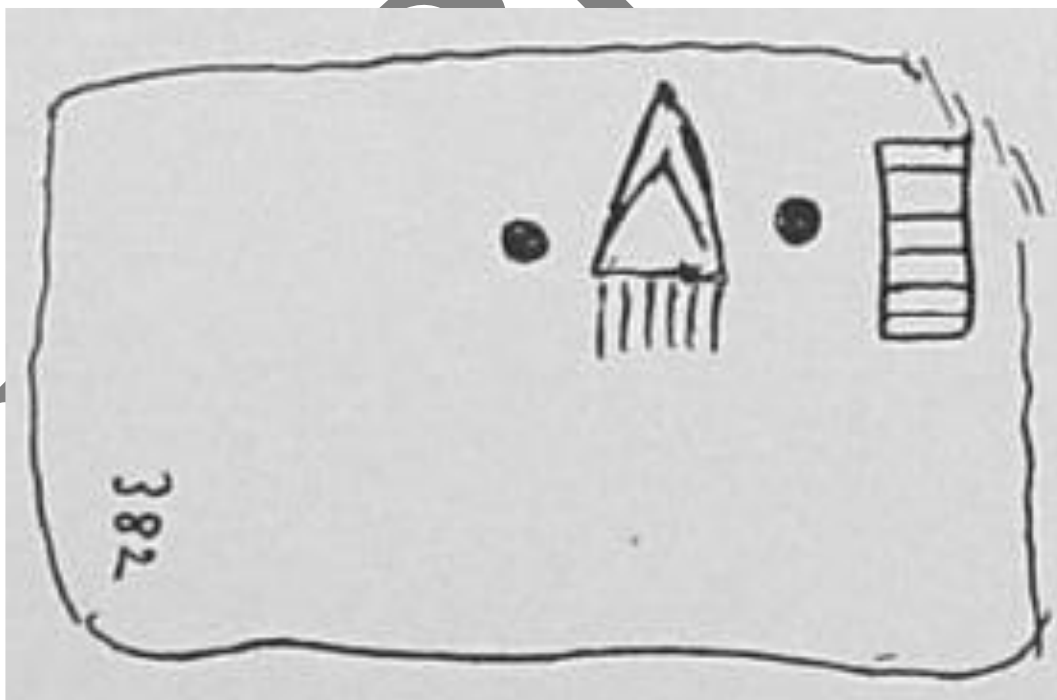


(Scheil 1923: PLXXIII)

Figure 4. Proto-Elamite Clay Tablet No. 382 in MDP26



(<https://cdli.earth/artifacts/9070/reader/95812> Image © National Museum, Tehran, Iran)



(Scheil 1935: PLXLIII)

Conclusion

The recorded numbers of goats and sheep in both herds on the tablet at the State Hermitage Museum are remarkably close to one another. This intriguing ratio may suggest that the animals were grouped deliberately according to some administrative or economic rationale. The total number of goats is approximately eight times the total number of sheep, indicating that those engaged in small livestock husbandry preferred raising goats over sheep. This preference implies an abundance of goat-derived products, such as hides, hair, and milk. Moreover, since goats and sheep are consistently cited as common categories of small livestock in other Proto-Elamite tablets, the tablet in the State Hermitage Museum aligns with broader trends in the available Proto-Elamite corpus.

On tablets numbered 142 and 382, the sign M122b appears before the numerical notations. However, on the tablet in the State Hermitage Museum, the signs M122b and M387xM003a appear to serve as qualifiers or classificatory markers. The sign M122b characterises or classifies the first herd, while the sign M387xM003a serves the same purpose for the second herd. Thus, the use of M122b and M387xM003a on the tablet in the State Hermitage Museum parallels the function of M122b on tablets numbered 142 and 382. In conclusion, the tablet housed in the State Hermitage Museum exhibits similarities with other Proto-Elamite tablets in terms of subject matter and certain sign forms. However, the absence of the sign M387xM003a and the two dotted 1 (N1) signs from the wider Proto-Elamite corpus distinguishes this tablet from others in the collection.

Acknowledgements

I would like to thank the referees who will carefully examine this article. In it, I discuss the cultural structure of the Proto-Elamite Period, one of the most fascinating periods in Iran, and I appreciate those who will contribute to the development of the article through their insights and comments.

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