# "An Archaeological Study on the Tokens of Tepe Zagheh, Qazvin Plain, Iran"

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## Abstract

The study of the circumstances surrounding the development of record-keeping for information purposes, and of what these records looked like, in prehistoric human societies has always had significance in archaeological research. Such research is important because it relates to the beginnings of the use of accounting and reckoning systems, which came to be one of the principal elements of institutionalized management and bureaucracies under urbanization and in historical periods. Tepe Zagheh is one of the key sites of the transitional period from Neolithic to Chalcolithic in the Qazvin Plain, having provided a considerable collection of tokens (counting objects) in addition to the various other pieces of cultural evidence that were discovered in the excavations carried out there. Thus 238 Zagheh tokens were available for typological study and theoretical analysis. The principal goals of this paper are to re-identify accounting and reckoning systems in Tepe Zagheh and to identify the evolutionary stages of these systems in Zagheh. It is apparent from implemented studies that Zagheh society had an early form of accounting system for keeping track of farm products and of animal counts, and that tokens were the principal devices used in this process.

***Keywords:*** *Iran, Qazvin plain, Tepe Zagheh, Accounting system, Reckoning system, Counting objects / Tokens, Transitional period from Neolithic to Chalcolithic.*

## Introduction

One of the significant topics of archaeological dispute and debates has always been the study of the process and circumstances of the socio-cultural evolution of human societies. Tepe Zagheh is one of the important sites of the transitional period from the Neolithic to the Chalcolithic in the Qazvin Plain – indeed it is a key site, containing relics and evidence of the first stage of the formation of hierarchy and ranking in its society. Some evidence places social complexity and cultural development at this level during the fifth millennium BC in the Central Plateau of Iran, evidence such as: the architectural remains, a painted building (a shrine?), funeral rites, various types of transitional Chalcolithic ceramics, specialization in the production of artifacts and goods, the beginnings of the separation of residential and industrial spaces from each other, agriculture with the growth of irrigation methods and the domestication of cereal, and developed animal husbandry with the domestication of various animal species. The evolution of communities that are receptive to cultural and technological changes generally proceeds towards social, political, and economic complexities in several stages: (1) egalitarian societies; (2) ranked societies; (3) classified societies; and (4) states (Fried 1967, 109).

Surplus of production and the establishment of craft specialists are among the significant stimulants of socio-economic evolution in human communities. And here a group of people controlled and redistributed production between specialists and other residents (Hirth 1996, 217–218). The rise of an elite group is one of the main traits of ranked societies, a group who are responsible for gathering the products of the craft specialists and the surpluses of farmers and then redistributing them (Service 1962, 171). For this process, human societies need to keep track of goods which were produced by themselves and those that were from natural resources. (Wright and Johnson 1975, 267); this is an initial form of accounting. Tokens (counting objects) are one of the main devices for such a reckoning system. Noteworthy collections exist of various types of tokens from excavations at Tepe Zagheh, providing an appropriate research base for examining the reckoning and accounting system in the prehistoric societies of the Qazvin Plain, the subject with which this paper deals.

The goals of this paper are to draw up a classification and typology of the Zagheh tokens and to re-identify the mechanism of resource and product management and, in general, the accounting system in Zagheh society. We attempt to synthesize the results of typological studies

with a theoretical basis in the various steps of research, so as to yield the most precise interpretation of the socio-economic structure of Zagheh society and its reckoning and accounting system. Thus 238 tokens from the 1970/1349, 1971/1350, 1972/1351, 1973/1352, 2011/1390, and 2012/1391 seasons have been studied in this paper[1] (see "The Archaeological Context" below).

## Scientific Background

The pioneering studies of Denise Schmandt-Besserat (1974, 1981, 1992, 1996) and her theory about the "origin of writing" are very important in the field of research on tokens and accounting systems. Her comprehensive studies on token collections of the Ancient Near East are the basis of our understanding of tokens and their role in the prehistoric era. Schmandt-Besserat's studies were inspired by prior research. Oppenheim (1959, 121) had argued, from the envelopes of Nuzi in Mesopotamia from the second millennium BC, that small miscellaneous objects (pebbles) had a connection with counting and units. Then Amiet (1966 a, b) deciphered the local recording system from the tokens, seal impressions, envelopes, and tablets of Susa in the fourth millennium BC, which was developed by Schmandt-Besserat (1992) incorporating information from some objects in the Near East.

Although the archaeological research on Tepe Zagheh is quite comprehensive, a full study has not been carried out on the accounting system and the tokens at this important site of the transition period from the Neolithic to the Chalcolithic. This deficiency is apparent not only for Zagheh in the Qazvin Plain, but also for the other prehistoric sites of the Central Plateau of Iran. Malek Shahmirzadi (1977, 362–367) merely published some pictures of tokens from the 1972 and 1973 excavation seasons, mentioning them as 'clay objects' in his PhD thesis entitled *Tepe Zagheh: a Sixth Millennium B.C. Village in the Qazvin Plain of the Central Iranian Plateau*. The late Salehi (1977), in a short article, discussed "The Probability of the Existence of Counting Objects at Tepe Zagheh". And Schmandt-Besserat, in her book *Before Writing*, published descriptions, catalogues, and analysis of 29 tokens from Zagheh (Schmandt-Besserat 1992, 41–

[1] Some tokens were also found in other excavations at Tepe Zagheh, but in this article we will examine only the tokens accessible in the Institute of Archaeology, University of Tehran, or published elsewhere.

42, Figs. 25.1 & 25.2) – tokens found at excavations from before Iran's Islamic Revolution (Negahban 1976, 1977; Malek Shahmirzadi 1977).

## Quiddity and the Role of Tokens in the Initial Accounting System in Iran

As mentioned above, Oppenheim (1959, 121) suspected that 'pebbles' from Mesopotamia were used as counting objects. Amiet (1966) elaborated their function in a recording and accounting system – one which led ultimately to writing and, through its associated cognitive skills, to other economic, social, and conceptual changes (Schmandt-Besserat 1992, 6–8). This token system was the earliest system of signs – a code – used for transmitting information from community to community. Each token symbolized one concept: the cone and sphere represented measures of grain, the cylinder or lenticular disk showed a unit of animals, and so on (Schmandt-Besserat 1992, 162). The need for counting, and accounting, was related to agriculture and the associated demographic and socio-political changes. The tokens served for budgeting, managing, and planning the resources of past communities (Schmandt-Besserat 1992, 197). Tokens from 8000 to 4400 BC are 'plain', with geometric and naturalistic shapes for keeping track of products of farming and numbers of animals; tokens from 4400 to 3200 BC are 'complex', having a greater diversity of shapes and markings, and being used, additionally, for tracking the objects manufactured in workshops (Schmandt-Besserat 1992, 6–8). The tokens, used as counters, were used to account for each type of goods: jars of oil were counted with ovoids, small measures of grain with cones, and large measures of grain with spheres. The tokens were used in one-to-one correspondence: one jar of oil was represented by one ovoid, two jars of oil by two ovoids, and so on (Schmandt-Besserat 1996, 15–20).

Tepe Ganj Darreh (layer E) and Asiab became, in the eighth millennium BC, the first sites in Iran to include tokens.[2] It was in these sites, still in the process of Neolithization, that tokens and human and animal figurines were discovered. Both sites date to the period between Epi-Paleolithic and Pottery Neolithic, and yield evidence of changes in the economic, social, and

[2] Other sites which took part in the Neolithization process, such as Chia Sabz, Sheikhi Abad, and Chogha Golan in the Zagros region, but not Ganj Darreh or Asiab, have been excavated recently and provided collections of tokens. The study of these collections could increase our knowledge about the first stages of the use and evolution of an accounting system in Iran.

technological systems, and of the sedentarization of communities. Indeed, the utilization of tokens for accounting in Iran first arose in societies which were in the Neolithization process; in the subsequent cultural periods, this system evolved and became more widespread.

The evidence indicates that the writing revolution arose from accounting and reckoning, and the first indications of them appeared on the textual documents of the late fourth millennium BC, the so-called Proto-Elamite tablets. Scrutiny of the impressed and incised signs for tokens on the Envelopes, Numerical Tablets, and Pictograph Tablets is the best method for recognizing the meanings of the token types. Eighteen different signs were identified on the Numerical Tablets. These signs were made by impressing the tokens on the clay tablets before drying. A deep impression from a sphere is the sign of the sphere token, and a shallow impression from a sphere is the sign of the disk-shaped token. Impressions from small cones are signs of the cone token, and long wedge-shaped impressions indicate the cylinder token. Furthermore, the evolution of an abstract numbering system has been rewritten, replacing the earlier understanding of the counter signs (Damerow 2006; Englund 1998; Dahl 2002). As we now understand them, the plain tokens including cones, spheres, and flat disks represented amounts of cereal; perforated cones and spheres represented units of land measurement; and cylinders and lenticular disks represented numbers of animals (Schmandt-Besserat 1981, 283, 1996, 80–82).

## Tepe Zagheh: the Archaeological Context of the Studied Collection

Tepe Zagheh is located in the Sagzabad District of Boueen Zahra County in Qazvin Province, c. 60 km south of Qazvin city and 140 km west of Tehran. The site is situated in the Qazvin Plain and the cultural-geographical region of the Central Plateau of Iran, at longitude 306° 58′ 49″, latitude 193° 35′ 49″, and 1252 m ASL (Figure 1). The site is no more than 1 m above the present level of the surrounding plain, extending 210 m north–south and 145 m east–west (c. 4 ha). The excavations at Zagheh have revealed occupational deposits to a depth of approximately 6 m which have been buried by alluvial sediments in recent times (Figure 2).

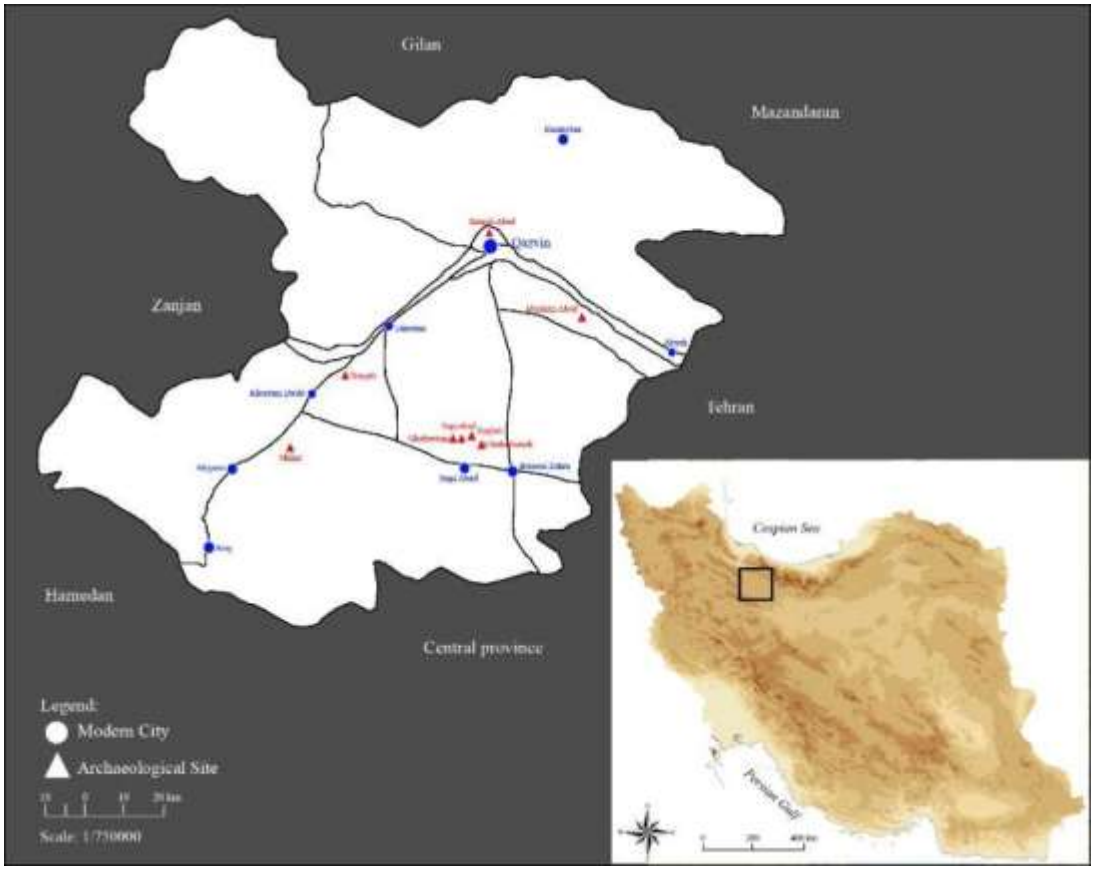



Figure 1. Map of Iran and location of archaeological sites in Qazvin Province (Fazeli and Moghimi 2013, Fig. 1)

Figure 2. General view of Zagheh from the south

The sites of Zagheh, Ghabristan, and Sagzabad (Qara Tepe) are close together in the Sagzabad District, where excavations were begun by the late E. O. Negahban, the director of the Institute of Archaeology of the University of Tehran, in the early 1970s as part of a long-term project of archaeological research in the Qazvin Plain (Negahban 1997, 314). Nearly twenty seasons of archaeological excavations at Tepe Zagheh have been carried out, the first having been conducted by Negahban in 1970 (Negahban 1973). Excavations were continued in ten campaigns by Negahban and Malek Shahmirzadi until the Islamic Revolution of Iran in 1979, which brought the excavations to a halt (Negahban 1976, 1977). After a long hiatus, excavations at Zagheh started again in 1990 and continued intermittently.

The late Salehi, on behalf of the Institute of Archaeology of Tehran, had excavated near the painted building in the central part of the site in 1994 and 1995 (Salehi 1997). In the Qazvin Plain re-evaluation project, Tepe Zagheh was excavated in 2001 by Fazeli Nashli, in order to ascertain the size of the settlement, establish an absolute chronology, and point out the craft areas of the site (Fazeli Nashli *et al*. 2005). Mollasalehi's horizontal and vertical trenches revealed social distinctions and stratigraphy and resolved chronological issues in the 2004 and 2007 seasons (Mollasalehi *et al*. 2006). And, with the goals of re-identifying the craft area and tracing the organization of pottery production, the southern part of the site was excavated horizontally by Fazeli Nashli in the 2011 and 2012 seasons (Fazeli Nashli 2011, 2012).

The chronology of the site is debated. Bovington and Masoumi (1972) were the first to measure two charcoal samples and from them to estimate a date of the seventh millennium BC for Zagheh. Malek Shahmirzadi suggested a lifespan from the early sixth millennium to 4500 BC, and argued that the lower phase of Zagheh corresponded to the Archaic Plateau period (Pottery Neolithic), while he attributed the upper phase to the Early Plateau period (Malek Shahmirzadi 1977, 3). For the next stage Mashkour proposed calibrated dates of 5212–4918 BC, based on the C14 analysis of faunal remains (Mashkour *et al*. 1999, 68). Radiocarbon dates from the re-excavation of Zagheh in 2001, however, indicate that the site was occupied for only a single period, with characteristics of the Transitional Chalcolithic (Sialk II or Early Plateau B); it would have been settled from c. 5380 to c. 4324 BC, giving the site a dated lifespan of around one thousand years (Fazeli Nashli *et al*. 2005, 73, Tab. 24; Pollard *et al*. 2012, 120).

The 238 tokens studied in this paper were found in the 1970, 1971, 1972, 1973, 2011, and 2102 seasons. Nineteen pieces from the collection go back to 1970 and 1971, 18 to 1972, 14 to 1973, 140 to 2011, and 47 to 2012 (Table 1). The current study is based on the finds from the 2011 and 2012 seasons, and information about those from prior excavations was added to enhance the analysis and results. The procedures, aims, and results of these excavations are reviewed in brief in the following.

Table 1. The number of tokens from different seasons

| **Season of excavation** | **Number Found** | **Percentage** |
|---|---|---|
| 1970 and 1971 | 19 | 8 |
| 1972 | 18 | 7 |
| 1973 | 14 | 6 |
| 2011 | 140 | 59 |
| 2012 | 47 | 20 |
| ***Grand total*** | ***238*** | ***100*** |

Extensive trenches, generally 10 × 10 m, were dug in the central part of the site and upper architectural levels were identified in the 1970 and 1971 seasons (Negahban 1973, 1977). Nearly 1050 square meters of the residential area of 'Zagheh Village' were excavated horizontally in various adjacent operations in 1972 and 1973 (Malek Shahmirzadi 1988, 1992). Stratigraphical evidence from deep soundings at Test Trench F.G.X (T.T.F.G.X), Trench D.X, and Section A indicated twelve architectural levels in deposits 6 m from the surface with no major disruption in their cultural sequence (Malek Shahmirzadi 1977, 84, 1999, 316–317). In order to better understand the organization of the site and its mode of production, in 2011 a large 10 × 10m trench (N30) was opened in the south of the site 1 m lower than the bench mark (Figure 3). At the end of the excavation, no residential or heated structures had been identified; instead, the deposits consisted of layers of ash and heated clay – all in secondary context (Fazeli Nashli 2011, vii) (Figure 4).

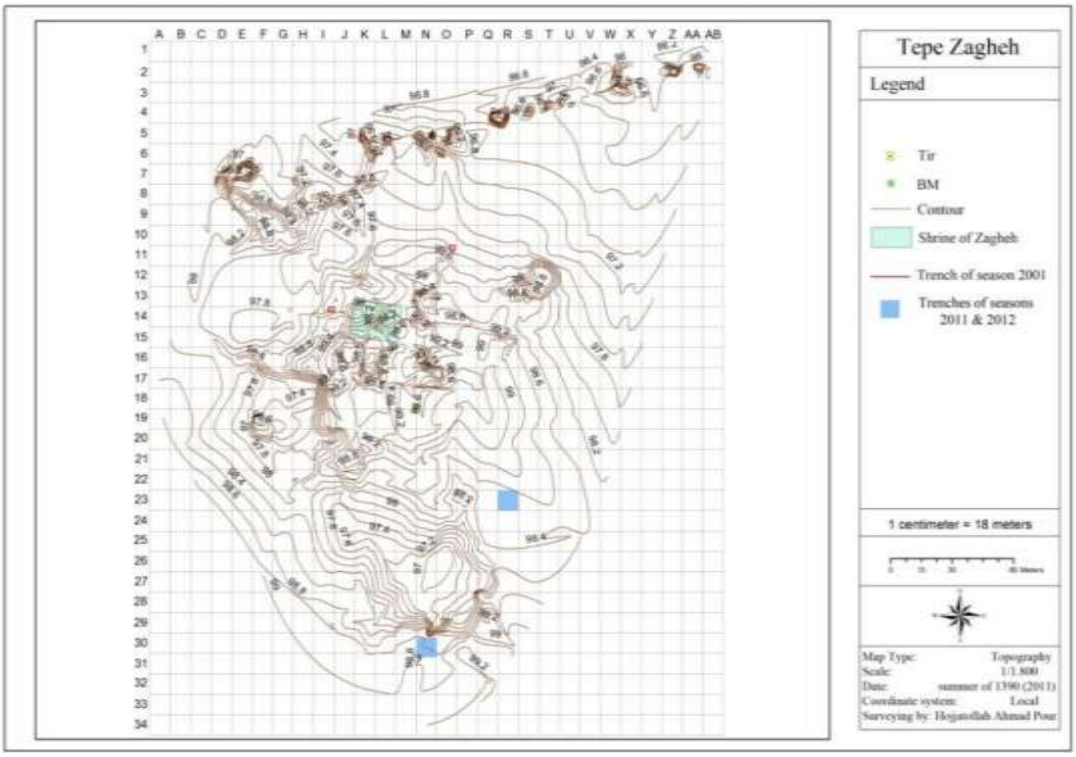



Figure 3. Topographic map of Tepe Zagheh with location of trenches

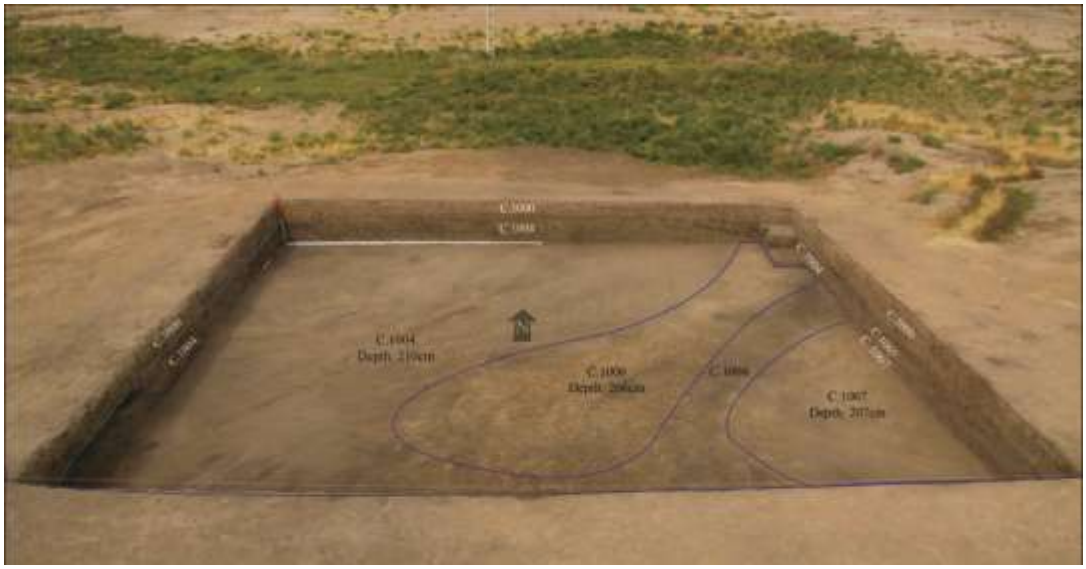


Figure 4. General view of Trench N30, 2011, from the south

The excavations of 2012 continued to pursue the goals recently established for the excavation. Two trenches were opened: N30a in the south of the site, 2.2 m below the bench mark (Trench N30 was limited to 5 × 5 m for 2012), and R23, 10 × 10 m, in the southeastern part of the site, 1.2 m lower than the bench mark (Fazeli Nashli 2012, 2) (Figure 3). In spite of

excavations to a depth of 3.3 m, no structure relating to a pottery kiln or workshop was identified in this season. The extensive ashy deposits and burnt-clay layers containing prepared clay (clay lumps), ceramic tools, deformed wares, slags, broken figurines, potsherds, animal bones, stone tools, spindle whorls, tokens, and so on together provide direct and indirect evidence of craft activities in Zagheh; this material, however, suggests that Trenches N30 and N30a are situated in a non-residential part of the site, an area for depositing household debris and craft- activity wastes (Figure 5). Furthermore, except for some scattered remnants of residential spaces from the uppermost level, no relics found at Trench R23 relate to craft activity.

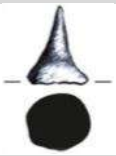
Figure 5. General view of Trench N30a, 2012, situated within Trench N30, from the west

It is noticeable that all of the tokens from the 1970 to 1973 seasons were found in upper levels (levels II to VI), and evidence from the 2011 and 2012 trenches fits into the same cultural-chronological horizon. These levels, from the first half of the fifth millennium BC and its cultural period, have been designated by various terms, such as Sialk II, Cheshmeh-Ali, Early Plateau B, and Transitional Chalcolithic (or transition from the Neolithic to the Chalcolithic) in the chronological framework of the Central Plateau of Iran (Majidzadeh 1981, 142; Malek Shahmirzadi 1995; Fazeli Nashli *et al*. 2005, 2009; Pollard *et al*. 2012, in press).

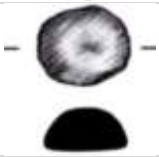
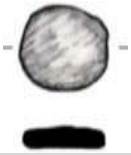
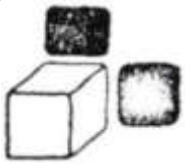
## The Studied Collection

Schmandt-Besserat's typology was used in this study for sorting the finds. In this typology shapes and forms are the principal characteristics, and the geometric shapes of tokens show a variety of types. Each documented type has a numeric code and a name for its geometric shape: for example, 'Type 1: Cone'. In view of the existence of differences in the traits and details of the objects, subtypes are defined for each type and given a letter from the Roman alphabet and again a name for their geometric shapes.[3] In total, seven main types with subtypes were recognized, all of them 'plain tokens', comprising (1) cone, (2) sphere, (3) disk, (4) oval, (5) quadrangle, (6) hyperboloid, and (7) tetrahedron (Table 2; Figure 6). Table 2 shows the types and subtypes of Zagheh tokens with the number of them found and an illustration. The typological description and interpretation of the tokens will be presented below.

Table 2. Types and subtypes of tokens from Tepe Zagheh

| Type and Subtype | Number found | Example |
|---|---|---|
| **1: Cone** | **94** | |
| A: Isosceles | 49 |  |
| B: Equilateral | 13 |  |
| C: Truncated | 11 |  |
| D: Round apex | 8 |  |
| E: Long | 8 |  |
| F: Isosceles over 3cm. | 5 |  |

[3] It is noteworthy that no differences between subtypes exist in the performance and function of tokens.

| Type and Subtype | Number found | Example |
|---|---|---|
| **2: Sphere** | **84** | |
| A: Plain | 43 |  |
| B: Half sphere | 41 |  |
| **3: Disk** | **31** | |
| A: Flat | 23 |  |
| B: Lenticular | 8 |  |
| **4: Oval** | **14** | |
| A: Plain | 14 |  |
| **5: Quadrangle** | **9** | |
| A: Plain | 1 |  |
| B: Cube | 8 |  |
| **6: Hyperboloid** | **4** | |
| A: Plain | 4 |  |
| **7: Tetrahedron** | **2** | |
| A: Plain | 2 |  |
| **Grand total** | **238** | |

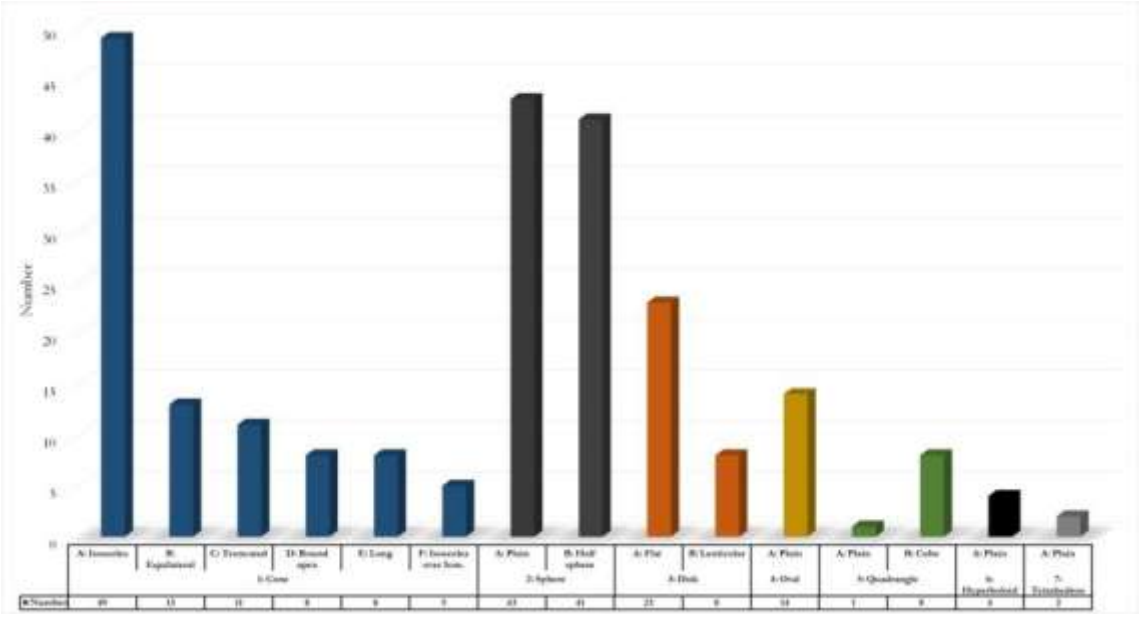



Figure 6. Bar chart showing the types and subtypes

*Type 1: Cone*. Ninety-four tokens (39%) are of the cone type. As mentioned, these objects, in two different sizes, represent tracts and measures of grain. A small cone is the symbol for a small unit of grain (‘small basket’), the one generally used, and a large cone (over 3 cm base-to-apex) similarly represented a large unit of grain (‘large basket’). These tokens have an upper segment extended above the base. This type comprises six subtypes: A, Isosceles (Figure 7: Nos. 1–3); B, Equilateral (Figure 7: Nos. 4 & 5); C, Truncated (Figure 7: Nos. 6 & 7); D, Round-apex (Figure 7: Nos. 8 & 9); E, Long (Figure 7: Nos. 10 & 11); F, Isosceles over 3 cm (Figure 7: No. 12). The majority of cones – except cones over 3 cm – fall within the range of 10 to 20 mm for their radius and height.

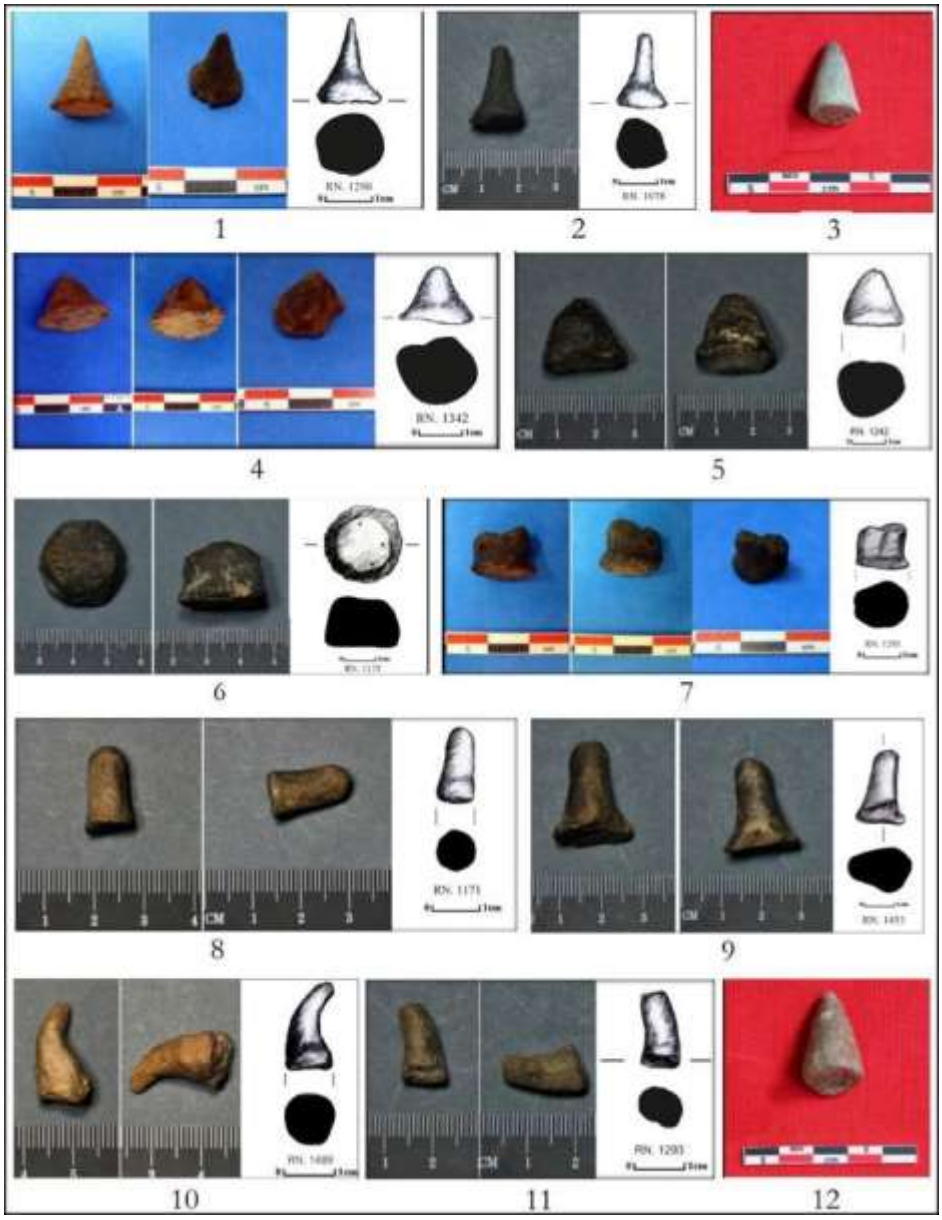



Figure 7. Cone subtypes

*Type 2: Sphere*. Eighty-four tokens (35%) are of the sphere type. These objects represent a large unit of grain (‘large basket’). This type comprises two subtypes: A, Plain (Figure 8: Nos. 1–3), and B, Half sphere (Figure 8: Nos. 4–6). These tokens have a circular shape with the same diameter from all aspects. The majority of spheres have a diameter in the range of 10 to 20 mm.

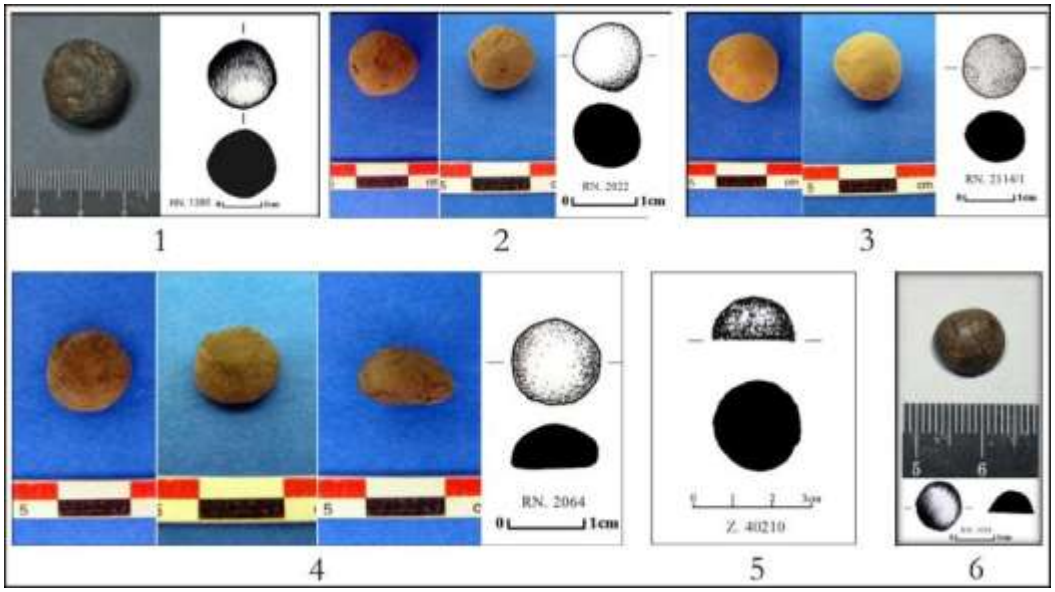



Figure 8. Sphere subtypes

*Type 3: Disk.* Thirty-one tokens (13%) are of the disk type. These objects represent a unit of animals: a disk may be the symbol for ten individual sheep. This type comprises two subtypes: A, Flat (Figure 9: Nos. 1–3), and B, Lenticular (Figure 9: Nos. 4 & 5). These tokens have a circular profile and flat, concave, or convex sides, with a constant diameter. The majority of disks fall within a range of 10 to 20 mm in diameter.

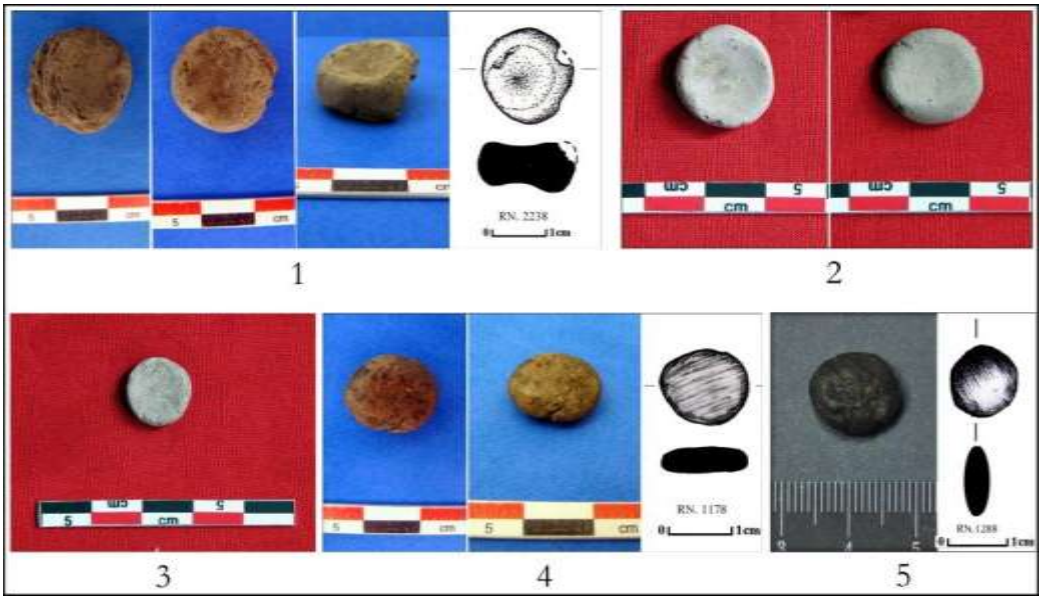



Figure 9. Disk subtypes

*Type 4: Oval*. Fourteen tokens (6%) are of the oval type, and all are of the same subtype: A, Plain (Figure 10: Nos. 1 & 2). These objects usually represent quantities of jars of oil and have an oval profile and a circular cross-section, with a length twice their width.

*Type 5: Quadrangle*. Nine tokens (4%) are of the quadrangle type. Their exact symbol and representation, however, is not recognized. This type comprises two subtypes: A, Plain (Figure 10: No. 3), and B, Cube (Figure 10: No. 4). The plain quadrangles have four angles and little depth, like a plate.

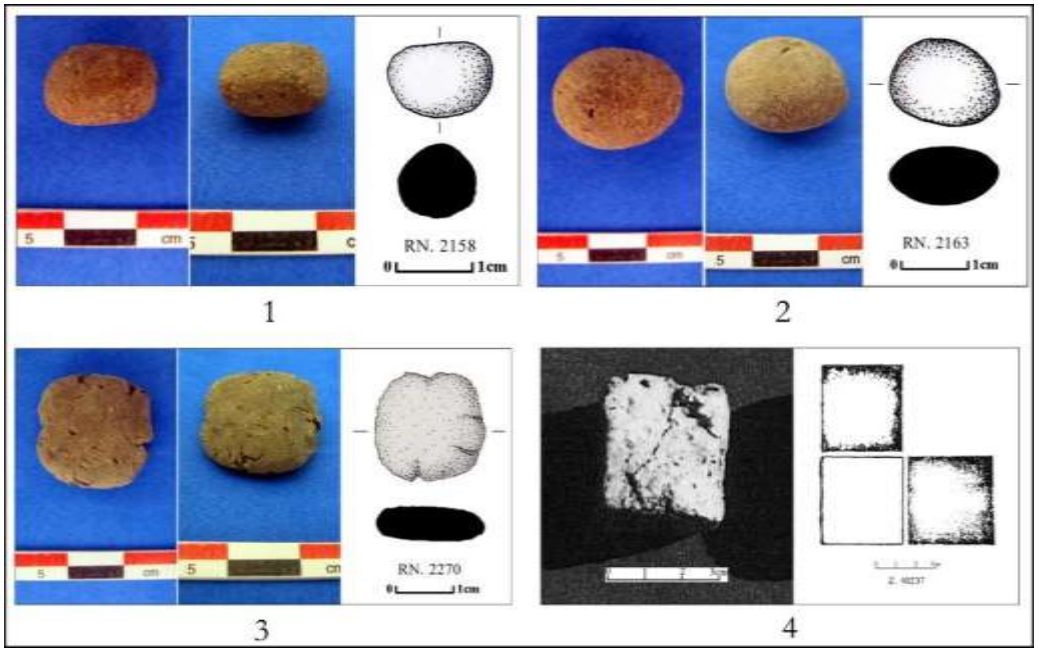



Figure 10. Oval and quadrangle subtypes

*Type 6: Hyperboloid*. Four tokens (2%) are of the hyperboloid type, and all are of the same subtype: A, Plain (Figure 11: Nos. 1 & 2). These tokens are mostly hourglass-shaped, and their precise use is unknown.

*Type 7: Tetrahedron*. Two tokens (1%) in the collection are of the tetrahedron type, and again both are of the same subtype: A, Plain (Figure 11: Nos. 3 & 4). This type has four angles or sharp bends in its base but is otherwise like the cone type. These tokens' function is presumably the same as that of the cones.

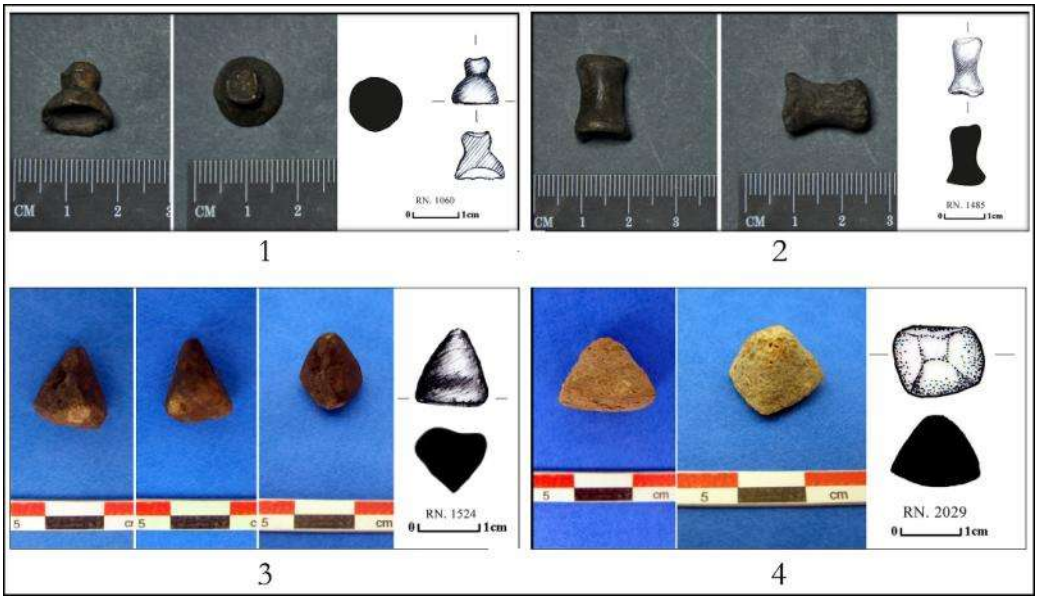



Figure 11. Hyperboloid and tetrahedron subtypes

The technological characteristics of this collection are discussed below. Clay (bole) with fine mineral and straw organic temper was the material most commonly used for manufacturing the tokens. This composition gave solidity and flexibility to the fabric. The majority of the objects are self-slip with a smooth surface. All the tokens were baked to the right temperature, except for a few; though the black and gray core and surface of some of them is due to incomplete firing. Some indications such as fabric, shaping, and surface of objects are considered to grade the manufacturing of tokens: by these standards, just 13 tokens are coarse and all the others are considered medium- or fine-class. The majority of the objects have proportionality and are carefully shaped in feature. Fortunately, 166 pieces in the collection are well conserved, and through them we could evaluate all elements and variables. The dominant colors in the objects are gray (light and dark), buff, brown (light and dark), and light red. Remarkably, most of the objects were retrieved from ashy deposits (garbage) in the southern part of the site (Trenches N30 and N30a).[4] Wright et al. (1980, 277) argued that the fact that the tokens were found in garbage pits indicates that they were discarded after the harvest, during the traditional season for feasts.

[4] It is noteworthy that just 32 tokens were retrieved in the 1970 to 1973 seasons, which is few in proportion to the volume and extent of excavations in the residential area of Zagheh's village.

## Discussion and Conclusion

As we have seen, the tokens or counting objects from Zagheh are 'Plain', and seven basic types were identified based on the current collection. The first three types – cones, spheres, and disks – were the most used and show the greatest number and variety of subtypes. The prevalence of these types, which represented measures of cereal and grain and numbers of animals, indicates that accounting and reckoning systems were mostly used for keeping track of products derived from farming and animal husbandry. The remaining types – quadrangle, hyperboloid, and tetrahedron – had a lower usage and could be designated 'rare types'.

Some points should be noted about the evolutionary level of the accounting system and tokens in Zagheh society. Based on absolute and relative chronology, the settlement at Zagheh was in existence over a long period of nearly nine hundred years from 5200 to 4400 or 4300 BC. By this stage, which included the settlement of the village and the development of agriculture, a period of nearly three thousand years had passed since tokens were known and recognized and had begun to play a part in the accounting and reckoning system. In other words, the tokens of Zagheh belong at the evolutionary level at which humans' knowledge of their cognitive concepts was increasing, and tokens were recognized a practical model. This was the result of increased circulation and transmission of information in human societies:[5] the proof of this is the extensive range of these objects in Iran and other Middle Eastern countries.

Evidence derived from various excavations and multidisciplinary research has indicated that Zagheh had a ranked society in which social stratification was institutionalized, and that the society was in the transition period from the Neolithic to the Chalcolithic. The following features all indicate this stage: the beginnings of separation of the residential part from the craft area, organization of craft and non-farming activity (Malek Shahmirzadi 1980; Fazeli Nashli 2005), creation and observance of style and standard in the production of some artifacts, developed agriculture based on irrigation (Malek Shahmirzadi 1999, 321; Fazeli Nashli *et al*. 2009, 16–17; Gillmore *et al*. 2011, 51), the common social internal and external relations indicated by

[5] The exchange of information had developed in this period in the Central Plateau: the growth of population in the several plains of the Central Plateau, the appearance of analogous cultures and close settlements (Valipour 2011, 44), the domestication of quadrupeds of burden (Mashkour *et al*. 1999; Young 2004), identical stylistic symbols in pottery, and much other evidence indicate the increase in communications and interactions.

monumental and ritual buildings, a hierarchy in burials and funeral rites with an emphasis on ideology (Negahban 1979; Malek Shahmirzadi 1979; Talai 1999; Mollasalehi *et al*. 2006), gradual growth of social institutions and organizations, and the external and inter-regional cultural interactions of the Qazvin Plain in the fifth millennium BC. In this society, the role of tokens is as a device for advancing some norms of supervisory control and behavior within a cultural system. The presence of this mechanism indicates a solidarity in the social relations among families and individuals, and the development of institutionalized management of economic activities. The need for control of this system implies the probability of ranking in the society, and this control was presumably exercised by the class of agencies in the society that is identified as an elite.

The growth of an accounting and reckoning system is one of the main elements in the development of a redistributive economy. In this process, a group of individuals in the society collect the products of farming and animal husbandry, and probably products manufactured in workshops (which usually resulted from ensemble and public activities), and, after recording their measures, store them in a place. It may be assumed that, for 20 baskets of cereals, 20 cone or sphere tokens were kept with an accountant; after a basket was given to a family, one token would be removed from the collection. This assumption is borne out by the fact that the majority of Zagheh tokens were found at the place for depositing the debris and garbage in the southern part of the site. It can be assumed that, after the harvesting and thrashing of the grains, the process of collection and redistribution would take place and then some tokens would be discarded. This program could be performed as part of the traditional season for feasting or after harvest.[6] It should be noticed that this assumption implies the participation of people in communal activities, which required a division of products after harvesting. The communal system of traditional agriculture was in use in various regions of Iran – especially in the Qazvin Plain – until the land and territorial reforms in Iran in 1961.[7] In this system, the lord's farming lands were divided into several blocks, or *boneh* in the local term; each block or *boneh* was ceded to several farmers for communal work, and when it was done they gave the products to the lord. The lord then redistributed the products to his farmers based on the time they had spent in

[6] Nowadays such traditional feasts are held in all regions of Iran: the hazelnut-picking feast in the Alamout District and the pistachio-picking feast in Boueen Zahra County of Qazvin Province are good examples.
[7] This reform abolished the lord-and-peasantry system in villages under a landlord.

communal activity (Elyasiyan 2004). This pattern could probably be assumed for rural communities of the sixth and fifth millennia BC in the Qazvin Plain. Examining this assumption requires ethno-archaeological research, whose results must be matched to contemporary historical documents.

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