

A glimpse of human life from the Neolithic cemetery at Tell el-Kerkh, Northwest Syria

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ABSTRACT – *The excavations at Tell el-Kerkh, Northwest Syria, have uncovered the presence of a large Neolithic settlement that had a long cultural sequence. The settlement covers a vast area of at least 16ha and shows signs that it was a complex society. Excavations recently revealed a Neolithic cemetery with the remains of over 240 individuals that is one of the earliest outdoor communal cemeteries in West Asia. The discovery of the cemetery has provided a great deal of information about Neolithic life, and forms the basis of this paper, which discusses causes of death, division of labour, and ownership in Kerkh Neolithic society.*

IZVLEČEK – *Izkopavanja na najdišču Tell el-Kerkh v severozahodni Siriji so pokazala prisotnost velikega neolitskega naselja z dolgim kulturnim zaporedjem. Naselje pokriva območje, veliko najmanj 16ha, in kaže znake o tem, da gre za kompleksno družbo. Nedavna izkopavanja so odkrila neolitsko grobišče z ostanki več kot 240 posameznikov, kar pomeni, da gre za eno prvih skupnih grobišč na prostem v zahodni Aziji. Z odkritjem grobišča smo dobili veliko informacij o neolitskem življenju in podlago za ta članek, v katerem se ukvarjamo z vzroki smrti, delitvi dela in lastništvom v neolitski družbi v Kerkhu.*

KEY WORDS – *Tell el-Kerkh; Neolithic cemetery; causes of death; division of labour; proprietorship*

Introduction

Since 1997, experts from the University of Tsukuba and the Directorate-General of Antiquities and Museums of Syria have been excavating a large Neolithic settlement called Tell el-Kerkh. This site is located in the south of the Rouj Basin in Northwest Syria (Fig. 1). The site consists of three contiguous artificial mounds: Tell el-Kerkh 1 and 2, and Tell Ain el-Kerkh (Fig. 2). Although we collected Neolithic material from all three mounds, Tell el-Kerkh 1 is densely covered with later cultural deposits, while Tell el-Kerkh 2 and most of Tell Ain el-Kerkh contain pure Neolithic mounds. Therefore, we concentrated our activities at Tell Ain el-Kerkh.

The purpose of the excavations is to reveal the formation and management of such mega-sites, particularly during the Late Pre-Pottery Neolithic B (PPNB) and Early Pottery Neolithic (PN) periods. More than ten seasons of excavations revealed that the Neoli-

thic settlements at Tell el-Kerkh not only cover a vast area of around 16ha, but also show signs of being a complex society, which included communal storage, craft specialisation, advanced technology, long-distance trade, concepts of ownership, ritual practices, and personal property (Tsuneki et al. 2007).

A recent focus of the excavations has been the discovery of a Pottery Neolithic cemetery in the central area of Tell Ain el-Kerkh in 2007; its excavation has continued since then (Tsuneki 2010; Tsuneki et al. 2011). The cemetery is located next to a habitation zone of the Rouj 2c settlement, dating to between 6600 to 6000 calBC. Up to and including the 2010 season, the remains of over 240 individuals have been discovered within an area measuring about 200m² (Fig. 3). The skeletons were laid overlapping each other in a layer about 1m thick, and two ¹⁴C datings directly from human bone samples dates

them to 6474–6266 and 6415–6252 calBC (1 σ) respectively. The cemetery seems to have been used for several centuries.

In the previous Pre-Pottery Neolithic (PPN) periods, the dead were commonly buried within of living spaces, such as under the floor, in a courtyard, or near a wall foundation. Clusters of human bones were sometimes discovered in special houses, called skull buildings (Bienert 1995), charnel houses (Moore et al. 2000), maison des morts (Coqueugniot 1999), and tower burials (Cornwell 1981). The long and complicated funeral practices, including skull decapitation and skull caches, were repeatedly undertaken in PPN societies (e.g. Kenyon 1981; Bar-Yosef et al. 1991; Kuijt 1996; 2000; 2008; Goring-Morris and Horwitz 2007; Bienert 1995). The characteristics of graves at Kerkh Pottery Neolithic cemetery were quite different from PPN graves, and the funeral practices executed there must also have been quite different. The Kerkh Pottery Neolithic cemetery shows drastic changes in funeral practices and views of the next world. It is one of the earliest outdoor communal cemeteries in West Asia. Considering the information that the excavation of this cemetery has revealed, I would like to provide a glimpse of the life of Pottery Neolithic people.

General information about the Neolithic cemetery

Burials in the cemetery can be divided into three main types: primary inhumation, secondary burial, and cremation burial. Structured burials and urn burials were also identified within the cemetery, but their number was quite limited.

Primary inhumation was the main burial type. Without exception, all the burials were in a flexed position (Fig. 4). They were usually buried on their side, although some people were buried in a supine or prone position. Adult males and females, in addition to children, were buried in any position, and no remarkable differences were observed between age and sex. There were various burial orientations; however, we cannot point to any strict rules for burial orientation in this Neolithic cemetery.

Human skeletons, especially skulls and long bones, were sometimes removed from the primary burial context and reburied in a shallow pit. There are two sub-types of such secondary burials: single and collective. However, the majority of secondarily deposited skeletons were buried in a collective burial ground



Fig. 1. Location of Tell el-Kerkh.

(Fig. 5). Most of these individuals were adults; however, sub-adults, juveniles, and infants were also included in the secondary pits. Both sexes were identified from the adult bones.

The third burial type is cremation. Thus far, at least 37 cremated individuals have been discovered, mainly in four cremation pits (crematoriums) (Fig. 6). Over half of the cremated individuals were adults of both sexes; however, sub-adults, juveniles, and infants were also cremated. The age and sex distributions of those cremated were similar to those of the secondarily deposited individuals. Considering the size of the pits, the number of individuals, and their disarticulation, it seems that the Kerkh people did not cremate dead bodies, but rather, skeletons that had been disinterred from primary burials.

In the earlier stages of the Kerkh Pottery Neolithic cemetery, cremation practices, including the use of crematoriums, were common in association with primary and secondary pit burials. In the later stages, however, cremation declined. Primary inhumation gradually became the most popular burial type. Elsewhere, I have discussed the transition of these funeral practices and placed them within a long tradition of funerals from the PPNB period. I concluded that the term and complexity of the funeral process lessened with the passage of time, and this funeral transition must have reflected a social transition from the PPNB to the PN society (Tsuneki *n.d.*).

Causes of death

As I have already mentioned, over 240 human skeletons have been discovered in the cemetery. As of now, approximately 200 individuals have been stu-

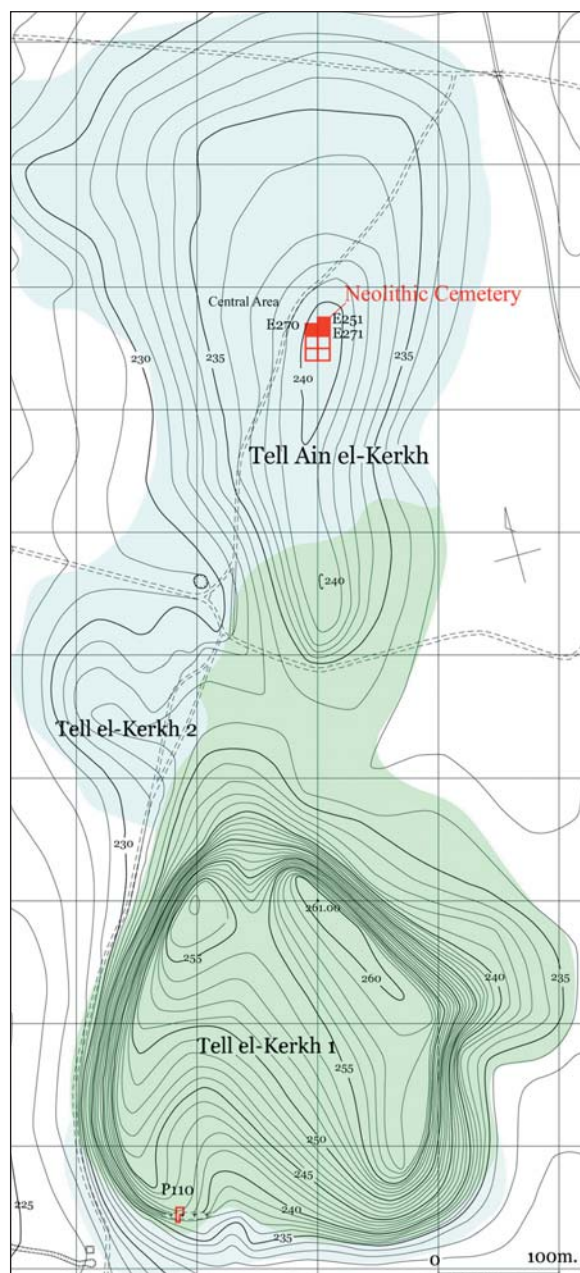


Fig. 2. Map of Tell el-Kerkh.

died by Sean Dougherty, a physical anthropologist, who developed the following basic data (Dougherty 2011).

Individuals younger than 20 years old account for 47% of the total sample. Of these, 27% died within the first year of life, and 86% died before they were 12 years old. Such a high infant and child mortality rate is notable, as is the fact that most of these deaths were among perinates, infants, and juveniles less than 3 years old, which is highly suggestive of a crisis in parturition, and during and after breast-feeding periods. A large number of young female burials also indicate the presence of poor maternal health.

The lack of adults over 50 years old is also notable. Almost all the adults died in their 20s and 30s, and very few individuals lived beyond 45 years of age; this leads to the conclusion that the average life-span of Neolithic people was comparatively short.

Evidently, such a brief life expectancy was caused partly by poor pediatric and maternal health. About 20% of the skeletons at Tell el-Kerkh had at least one hypoplastic enamel defect, which indicates that many individuals experienced repeated incidents of chronic, physiological stress or illness during adolescence. Dougherty also suggested that acute infection, malnutrition, and parasitic infection were likely contributors to the decreased longevity of the frailest members of the Kerkh Neolithic community (Dougherty 2011.28–29).

Although we have some concrete evidence of nutritional deficiency, the frequency of pathology of bones does not adequately explain the comparatively short life expectancy at Tell el-Kerkh. Are there any other causes? To determine the answer, we must pay close attention to the traces of injury on some skeletons.

A good example is Structure 1054 (Fig. 7). When uncovered through excavation, this young adult male seemed to have been buried in a very strange position. Although his right leg was folded in a normal position, his left big toe was placed unnaturally near his right shoulder. After removing his right leg, we understood the reason for this unnatural position: his left femur was broken in half and bent conversely. This femur fracture had happened due to a fall from a high place; the femur had pierced the skin of his leg, and was the cause of death. An attempt had been made to bury him in a normal flexed position; however, his left leg could not be folded.

A middle-aged adult male (35–40 years) burial, Structure 807 provided the next example. His upper body was covered with lime plaster, and a large limestone was placed at his knees. His upper body lay in a supine position, but his flexed legs lay to the left side. A small hole had been bored through his left temple, and another through his mandible (Fig. 8). It is quite certain that he had catastrophic perimortem fractures of the cranium and mandible, which would have caused his death.

We also observed fractures on the bones of Structure 921, although these did not seem to have been fatal. This young adult male (probably 30–35 years)

had several healed fractures, on the left radius, clavicle, and right metacarpals. In addition, he was covered with wounds, but curing traces were observed on the fractures. At any rate, he seemed to have fought with someone.

All these injured skeletons were of adult males; however, some female skeletons also showed traces of fracture. For example, Structure 803 is an adult female buried in a tightly flexed position on her right side (Fig. 9). She had several traces of fractures on her bones: one on the clavicle and two on the left ulna.

Structure 909 is another adult female who had profuse traces of bone fractures. She was buried in a tight position, on her left side (Fig. 10). She had fractures on the left distal ulna, the left distal second metatarsal, and at least six rib fractures; consequently, it seems these two females had suffered some violence.

These injured skeletons may indicate a certain level of interpersonal violence at the settlement. Especially in the case of adult males, some might have been killed by violence. It is not easy to guess the cause and degree of such violence; however, we cannot imagine a peaceful and idyllic society here. Consequently, causes of death at the Neolithic society of Tell el-Kerkh must have included injury and illness associated with malnutrition.

Division of labour

Let us review the pragmatic aspects of the social life of PN people. Over one-third of the primary burials contained grave goods, the majority being personal ornaments such as beads and pendants and pottery vessels. Furthermore, stamp seals and bone tools were not uncommon grave goods. Although adult males tend to have more grave goods than adult females and children, grave goods accompanied both sexes and all ages except infants and perinates; however, some grave goods were more typical of one sex.

Structure 1058 is a burial of a large middle-aged adult male (Fig. 11). He was buried in a tightly flexed position, on his right side. It is noticeable that many objects were dedicated to this male. A small dark-faced burnished ware (DFBW) bowl (Fig. 12.1) was placed at the back of his head. Near his lower back, a cluster of objects was discovered: a flat clay stamp (Fig. 12.2), three bone awls (Fig. 12.3–5), five deer horns (probably fallow deer) (Fig. 12.6–8), three flint axes (Fig. 12.9–11), two grind-stones (Fig. 12.12–13),

two hammer-shaped pumice stones (Fig. 12.14–15), a small hand-held whetstone (Fig. 12.16), an Amuq-type flint point (Fig. 13.17), five long flint blades (Fig. 13.17–21), two burins (Fig. 13.23–24), and eighteen flint flakes (Fig. 13.25–42). The number and variety of these offering objects, especially the deer horns and flint objects, are conspicuous when compared with other grave goods. These objects seemed to have been packed in an organic bag and placed in the grave. It is very probable that they were tools and products which had been used and dedicated to him when he died. If these grave goods were his property, their presence and inventory suggest that the tomb owner was engaged in flint knapping.

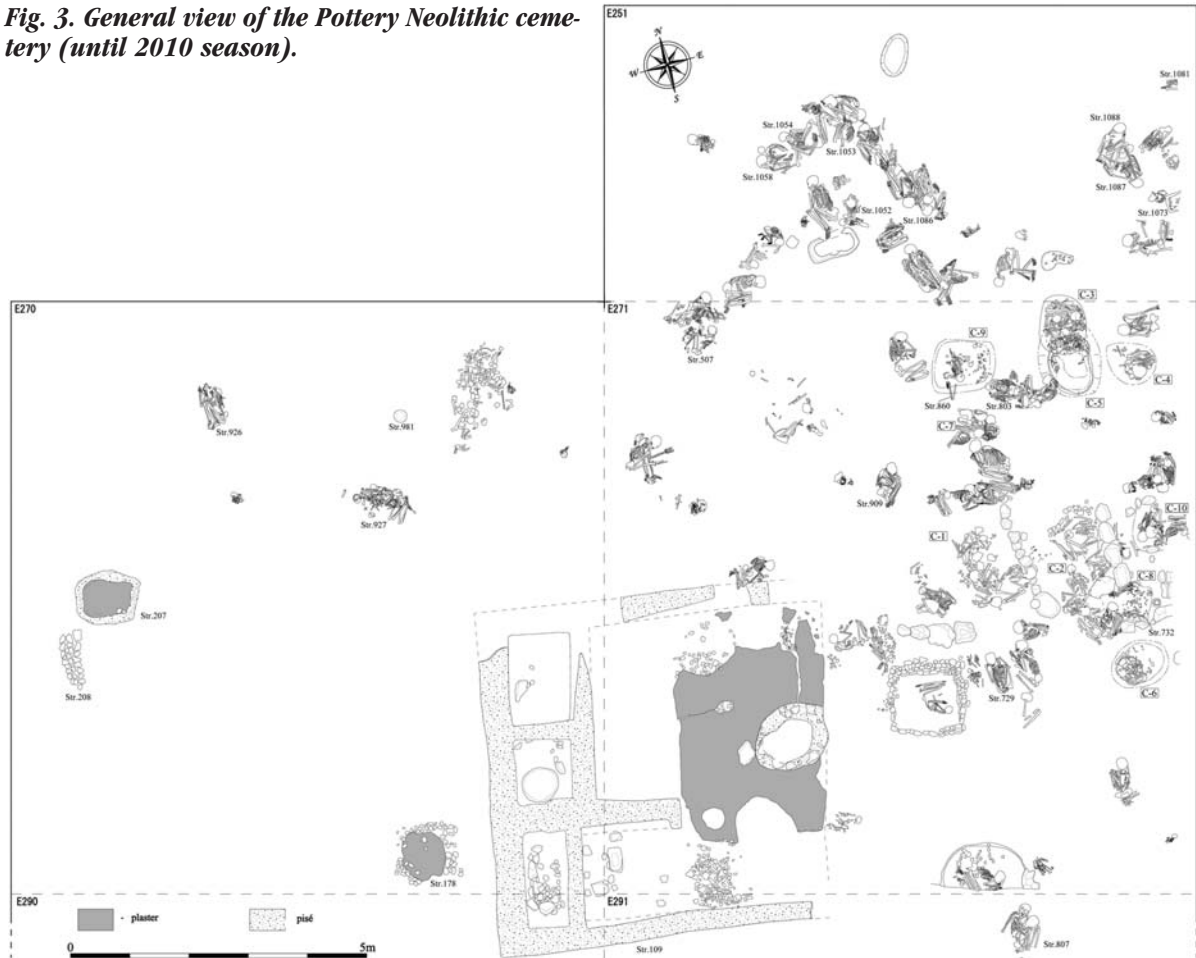
On the other hand, some adult females were buried with characteristic bone implements, specifically cattle metacarpals. For example, Structure 1081 is an adult female buried in a flexed position on her right side (Fig. 14). A large cattle metacarpal (Fig. 15.1) and seven bone awls (Fig. 15.2–8) with three stone beads (Fig. 15.9–11) were discovered near her hipbone. Structure 732 is another female, around 20 years old, who was buried in a prone position; she held a large wild cattle metacarpal with her right hand and chin (Fig. 16). In ethnographical documents from Syria, animal metacarpals are often recorded on weaving looms to tighten cords for treadles (*Saito 2007*). Therefore, we may presume that these characteristic metacarpal bones were used in weaving. The bone awls discovered with a metacarpal at Structure 1081 seem to have also been very suitable for weaving purposes. If these objects were the property of the tomb occupants, adult females tended to engage in weaving activities.

In other words, on the basis of some grave goods found at Tell el-Kerkh, we can assert that there was a division of labour to some degree based on gender. For example, as mentioned above, males tended to engage in flint knapping, and females tended to engage in weaving.

Ownership

Among the most notable grave goods from the Kerkh Pottery Neolithic cemetery are stamp seals made of various materials; as of now, 15 stamp seals have been discovered in 11 burials. The seals have usually been found near the individual's hipbone (Fig. 17) or in one hand (Fig. 18). We suggest that the stamp seal was strapped to the belt during the person's lifetime and buried as it was, or placed in the hand during the funeral ceremony.

Fig. 3. General view of the Pottery Neolithic cemetery (until 2010 season).



Some stamp seals were found in unusual positions. One stone stamp seal was found near the neck (Structure 1053) along with four beads (Fig. 19), and must have been one piece of a necklace. Another stamp seal was found from a DFBW pot which was dedicated to one of the cremation pits, *i.e.* 'concentration 5' (Fig. 20).

Most Neolithic stamp seals have been found in fills and among debris at many archaeological sites in West Asia, and the context in which they have been found has been unclear. The situation was similar at Tell el-Kerkh until the discovery of the PN cemetery. Over 150 stamp seals were revealed from Neolithic layers, but only four, discovered in store-rooms below a plaster floor, had a clear context (*Tsuneki et al. 1999.17*). However, we now have concrete evidence on the context of the stamp seals; the evidence that they were grave goods indicates that they were personal property in that society. Although most of

those buried with stamp seals were adults of both sexes, two juveniles also had them (Structure 751 and 1093). Therefore, we can understand that people of all ages and each sex, including even a small child, carried stamp seals in the PN community at Tell el-Kerkh.

As mentioned above, as of now, over 150 stamp seals and six clay sealings have been discovered in the excavations at Tell el-Kerkh (Figs. 21 and 22). These findings indicate that the clay sealing system already played a role in the sealing and record keeping of goods. The background of the sealing system is the rise and retention of the concept of ownership, as well as of the complex human relationships associated with the development of agricultural society¹. The discovery of stamp seals in the PN cemetery strongly suggests that this system was used not only by elite groups, but by all members of the community.

¹ Peter Akkermans and Kim Duistermaat discuss the idea that the Late Neolithic sealing system was used not by a full agricultural society, but by a mobile society practicing pastoralism or hunting, on the basis of the archaeological evidence from Tell Sabi Abyad and ethnographic evidence from North Africa (*Akkermans, Duistermaat 1997; Duistermaat 2010*). I agree with their opinion that the Neolithic sealing system was accessible to most members of society. However, I think that the sealing system could also have been used by a fully agriculturally settled society with no mobility, such as societies in later periods in West Asia.

Conclusion

I have touched on life as revealed by the remains at the PN cemetery of Tell el-Kerkh. PN people confronted problems of high infant mortality rates and poor maternal health and were comparatively short-lived. Interpersonal violence, especially among males, and poor pre-natal conditions for pregnant females might be among the reasons for such a short life expectancy. At the same time, however, they held funeral services even for small children and badly injured people, taking great care with the funeral arrangements, indicating a deep feeling of affection for their families and colleagues.

From the grave goods, we may argue that there was some degree of a division of labour based on gender.

The discovery of stamp seals as personal property indicates that the concept of proprietorship had become a fundamental principle among Neolithic people; this principle was not reserved to a small elite, but shared by all members of the community.

We are continuing our analysis of the skeletons and archaeological material. For example, studying the ratio between carbon and nitrogen isotopes extracted from human bone collagen has already yielded information about the diet of the Kerkh Neolithic people (Itahashi 2011). We expect that the results of the strontium isotope analysis will provide information with which to consider the kinship system of Kerkh Pottery Neolithic societies. These analyses will shed further light on life in Neolithic societies.

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Fig. 4. Primary burial (Structure 1085).



Fig. 5. Collective secondary burial (C-3).



Fig. 6. Cremation burial (C-6).

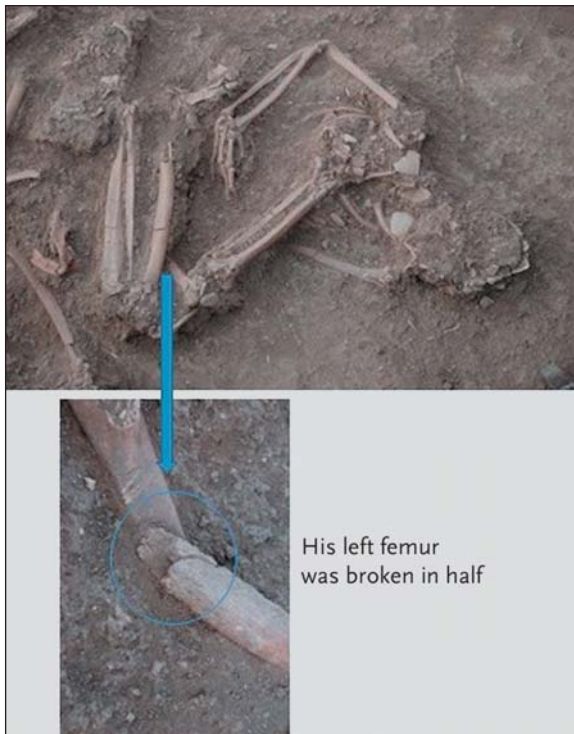


Fig. 7. A young-adult male burial, Structure 1054.



Fig. 8. A middle-adult male burial, Structure 807.



Fig. 9. An adult female burial, Structure 803.

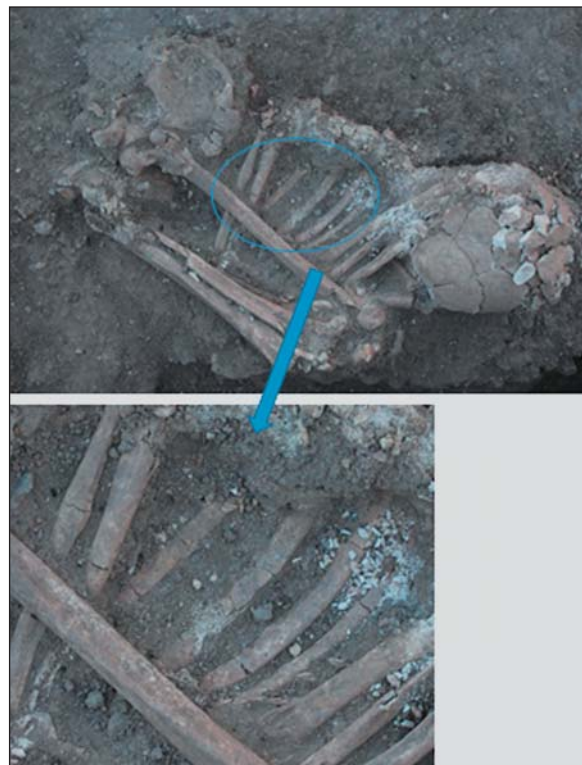


Fig. 10. An adult female burial, Structure 909.



Fig. 11. A middle-adult male burial, Structure 1058.

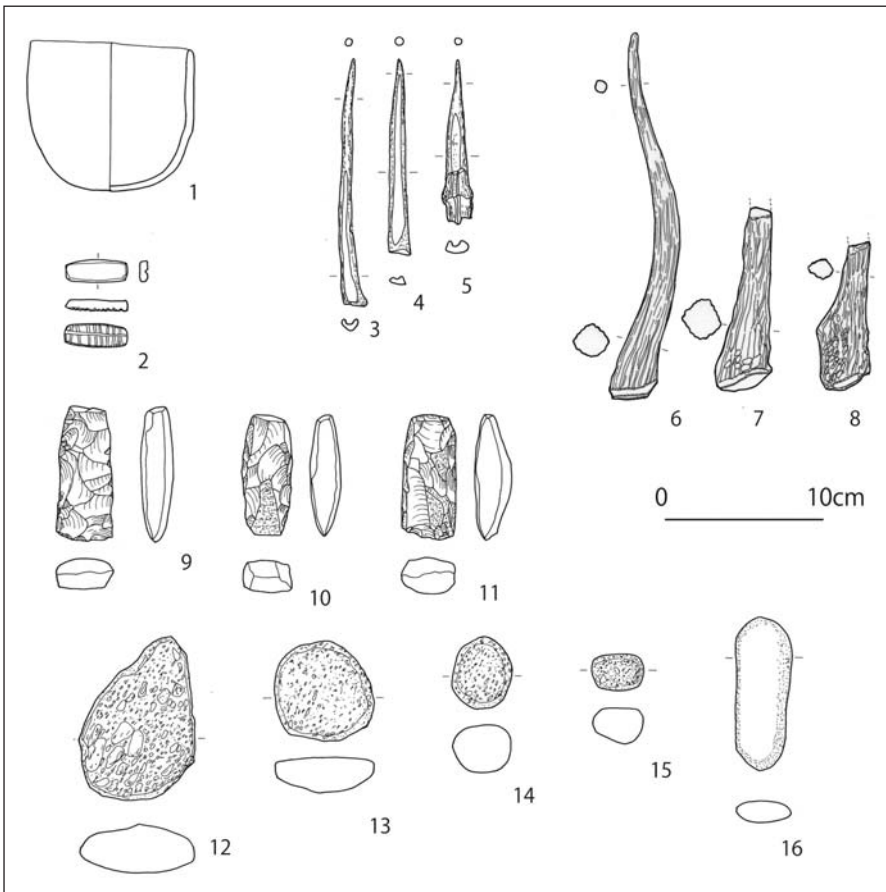


Fig. 12. Grave goods from the Structure 1058.

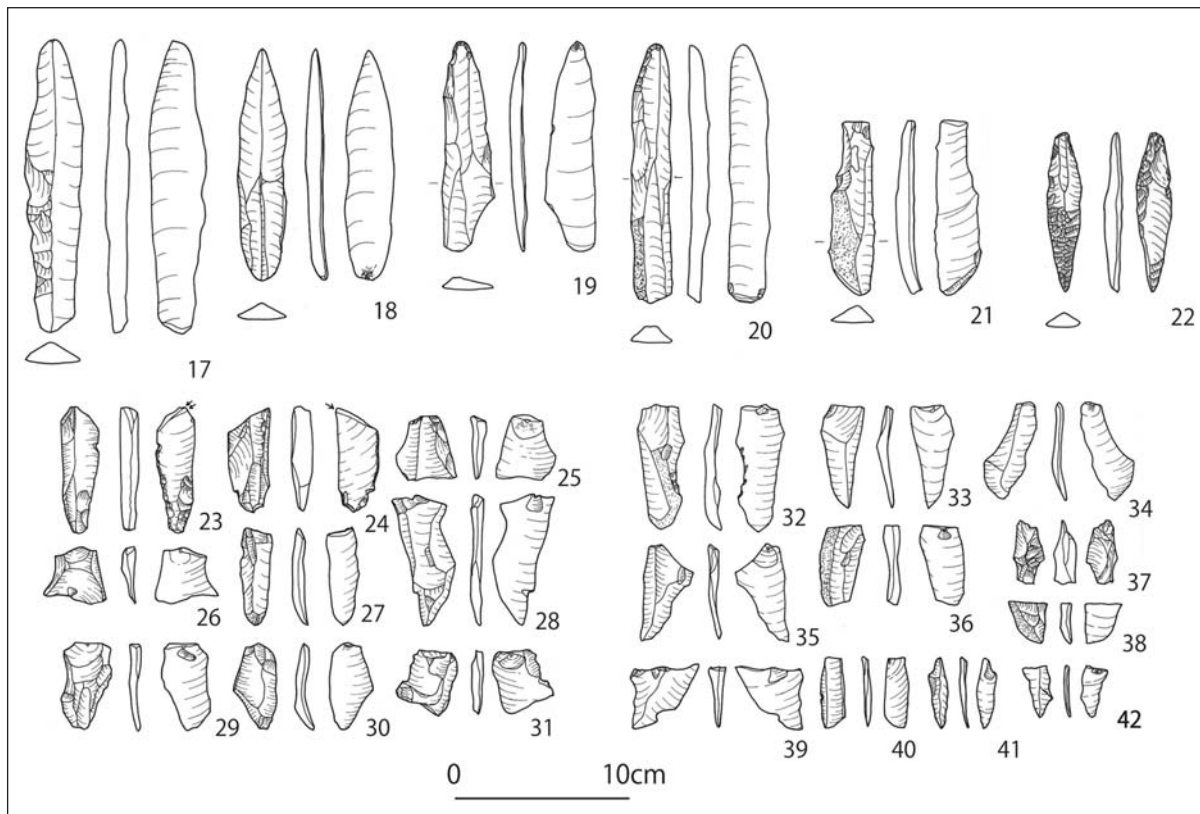


Fig. 13. Grave goods from the Structure 1058.



Fig. 14 (left). An adult female burial, Structure 1081.



Fig. 15 (right). Grave goods from the Structure 1081.



Fig. 16. A young-adult female burial, Structure 732.



Fig. 17. An adult male burial, Structure 1086.



Fig. 18. A juvenile burial, Structure 1083.



Fig. 19. Stamp seal found with four beads near the neck of Structure 1053.

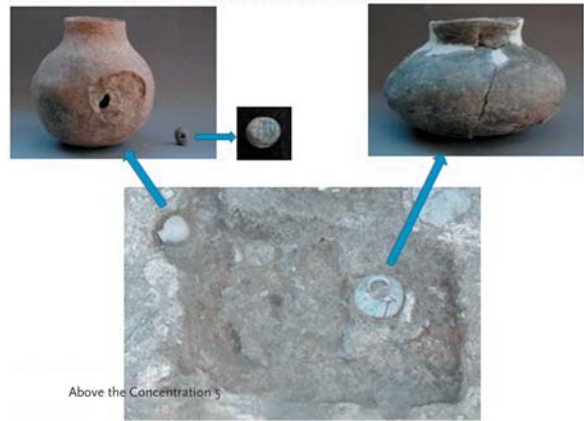


Fig. 20. Stamp seal discovered in a pot (C-5).

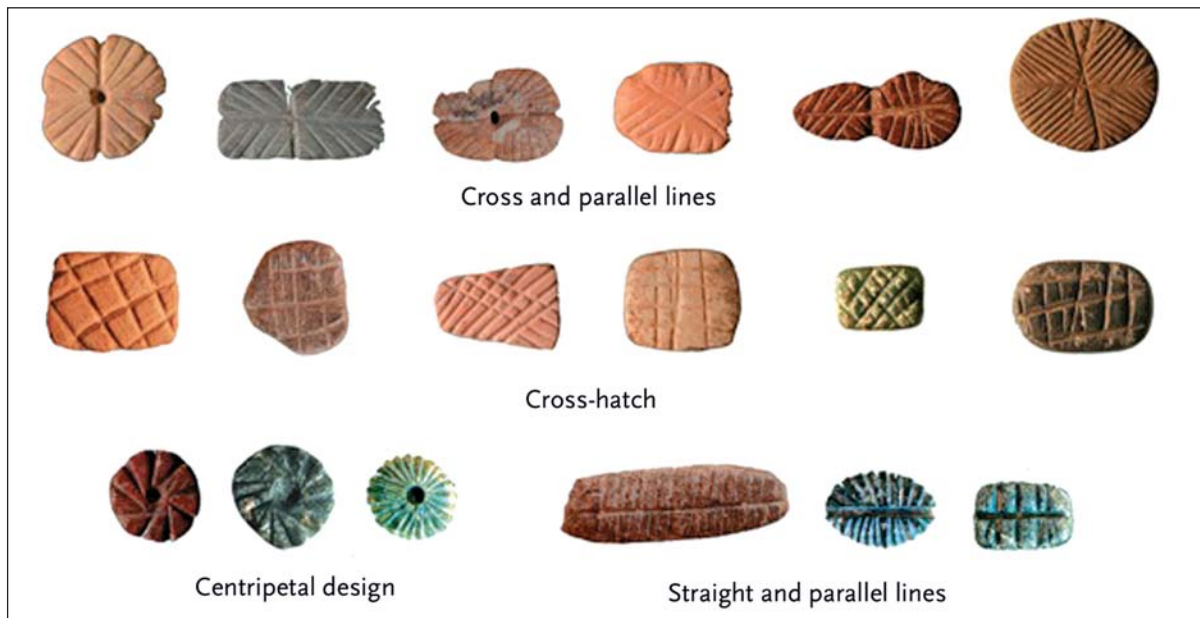


Fig. 21. Stone stamp seals.

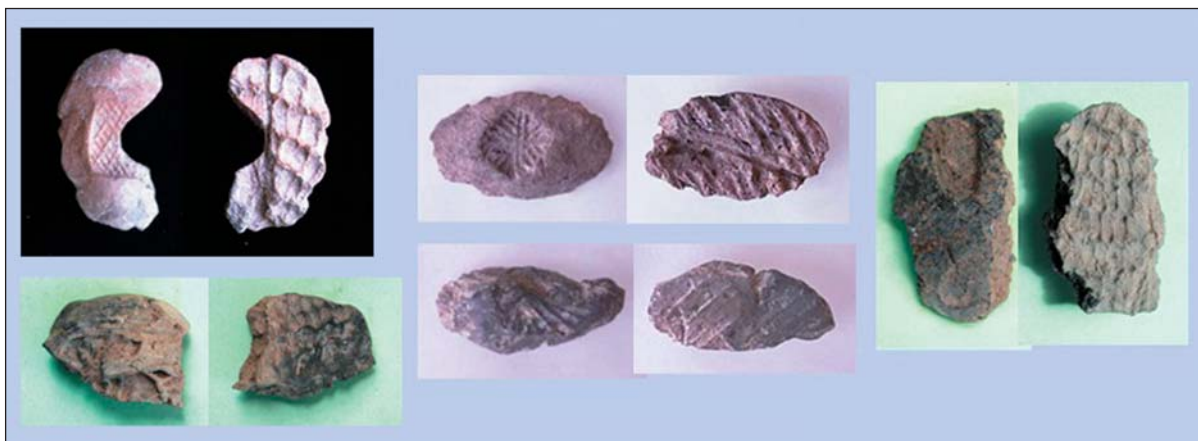


Fig. 22. Clay sealings.