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チャルモ (ジャルモ) 先史時代遺跡2022年度調査概要 (英文)

常木 晃, 渡部展也, 安間 了, サーリ・ジャンモ,
齋藤 有, サーベル・アハメド・サーベル

青銅器時代の角型容器と化粧品：トルクメニスタン南西部スンバル溪谷
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メソポタミアにおけるカエル型遺物の研究 (英文)

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AL-RĀFIDĀN

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PRELIMINARY REPORT OF THE CHARMO (JARMO) PREHISTORIC INVESTIGATIONS, 2022

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Yu SAITOH***** and Saber Ahmed SABER*****

1. Introduction

The archaeological mission from the University of Tsukuba began to investigate the Neolithic sites in the Iraqi-Kurdistan region in 2014. The purpose of our investigations was to reconsider the issue of Neolithization in Iraqi-Kurdistan, where research began in the 1940s and 50s and was stalled by political issues starting in the 1960s. With the full support of the Directorate General of Cultural Heritage of the Ministry of Culture of the Kurdistan Regional Government and the Slemani Department of Cultural Heritage, we first began our research at the Qalat Said Ahmadian site, located in the Pshdar Plain. We were able to identify the cultural deposits of the end of the Pre-Pottery Neolithic period, those of the Hassuna, Samarra, Halaf, Ubaid, and Iron Age, and have clarified the nature of the Neolithic site located at the edge of the fan deposits [Tsuneki *et al.* 2015, 2016, 2019].

In 2016, we began research in the Chamchamal area, which was the starting point for Neolithization research not only in the Iraqi-Kurdistan but also in the world. The mission of the University of Chicago, led by Professor Robert Braidwood, conducted the Jarmo Prehistoric Project from 1948 to 1955 there [Braidwood *et al.* 1972, 1983]. They left a significant mark on the study of Neolithization by investigating sites in the Chamchamal area. We had a strong desire to address the issue of Neolithization from a new perspective, using a variety of modern research methods in the same area.

Jarmo was then called Charmo, which means “white” hill in Kurdish. In order to keep as close as possible to the local point of view, Jarmo is referred to here as Charmo. However, in a context where academic history is at issue, it may also be called Jarmo.

To develop a more complete scheme of the Neolithization process, we must understand the long cultural sequence from the Epi-Paleolithic to the Pottery Neolithic period. The University of Chicago team discovered a series of prehistoric sites—Charmo, Turkaka, and Karim Shahr—9–11 km east of Chamchamal and 6–8 km southwest of Takia that are located in the hills on both sides of the winding Cham Gawra, one of the rivers flowing from the Zagros Mountains in a southwesterly direction (Figs. 1 and 2). Although these sites were investigated by the Chicago team—and then investigated more recently at Charmo by UCL [Fuller 2015] and at Karim Shahr by the University of Liverpool [Asouti *et al.* 2020]—we believe that renewed investigations of these sites and landscapes with new perspectives and technologies will further our understanding of these sites and, in turn, the Neolithization process.

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Fig. 1 Three prehistoric sites along the Cham Gawra.

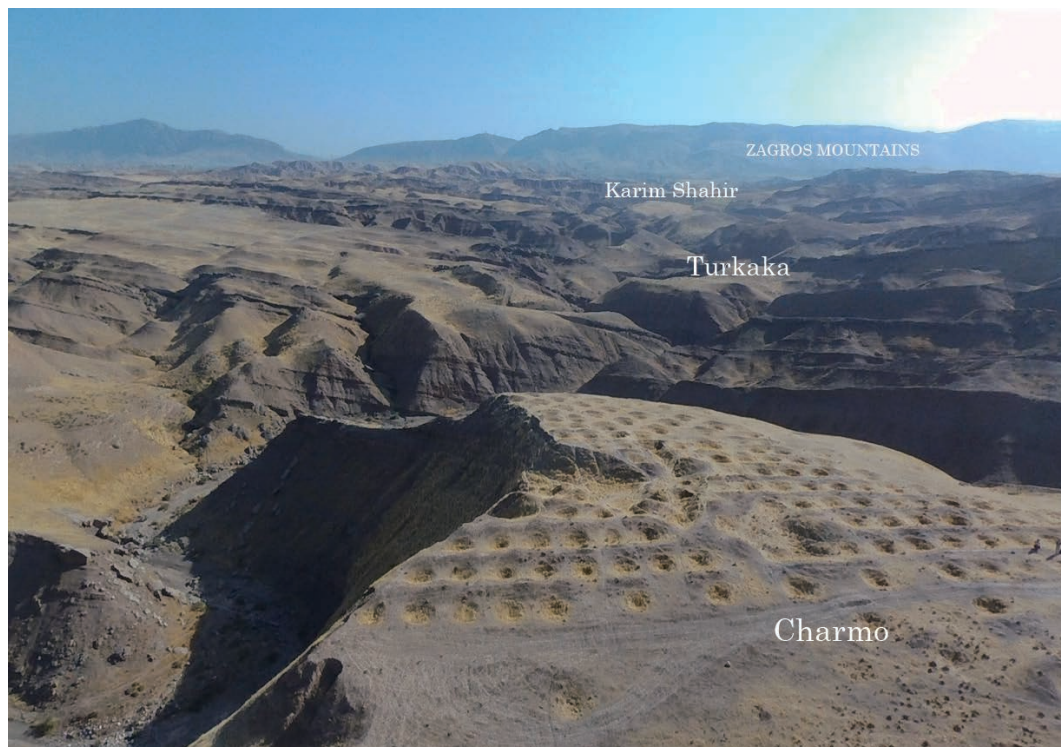


Fig. 2 Charmo, Turkaka, and Karim Shahir with the Zagros Mountains in the background.

Therefore, the operations of the investigations that we planned at Charmo and nearby sites are as follows, and these operations have gradually advanced since 2016.

- 1) Small-scale sounding excavations to establish the long cultural sequence and chronology for the Neolithization with a clear series of ^{14}C dating.
- 2) Making complete topographic maps and 3D images around Charmo using UAV (Fig. 3).
- 3) Positing the Charmo site within the surrounding topography and geology (Figs. 4 and 5).
- 4) Conducting geophysical prospecting (GPR and magnetometric surveys) to detect the complete extent of Charmo village.

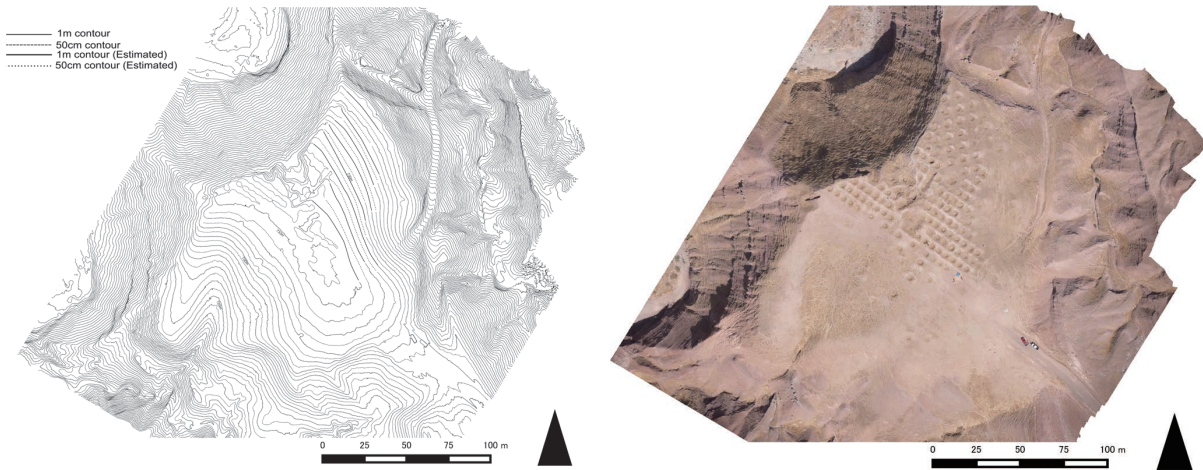


Fig. 3 Topographic map and orthographic image of Charmo (by N. Watanabe).

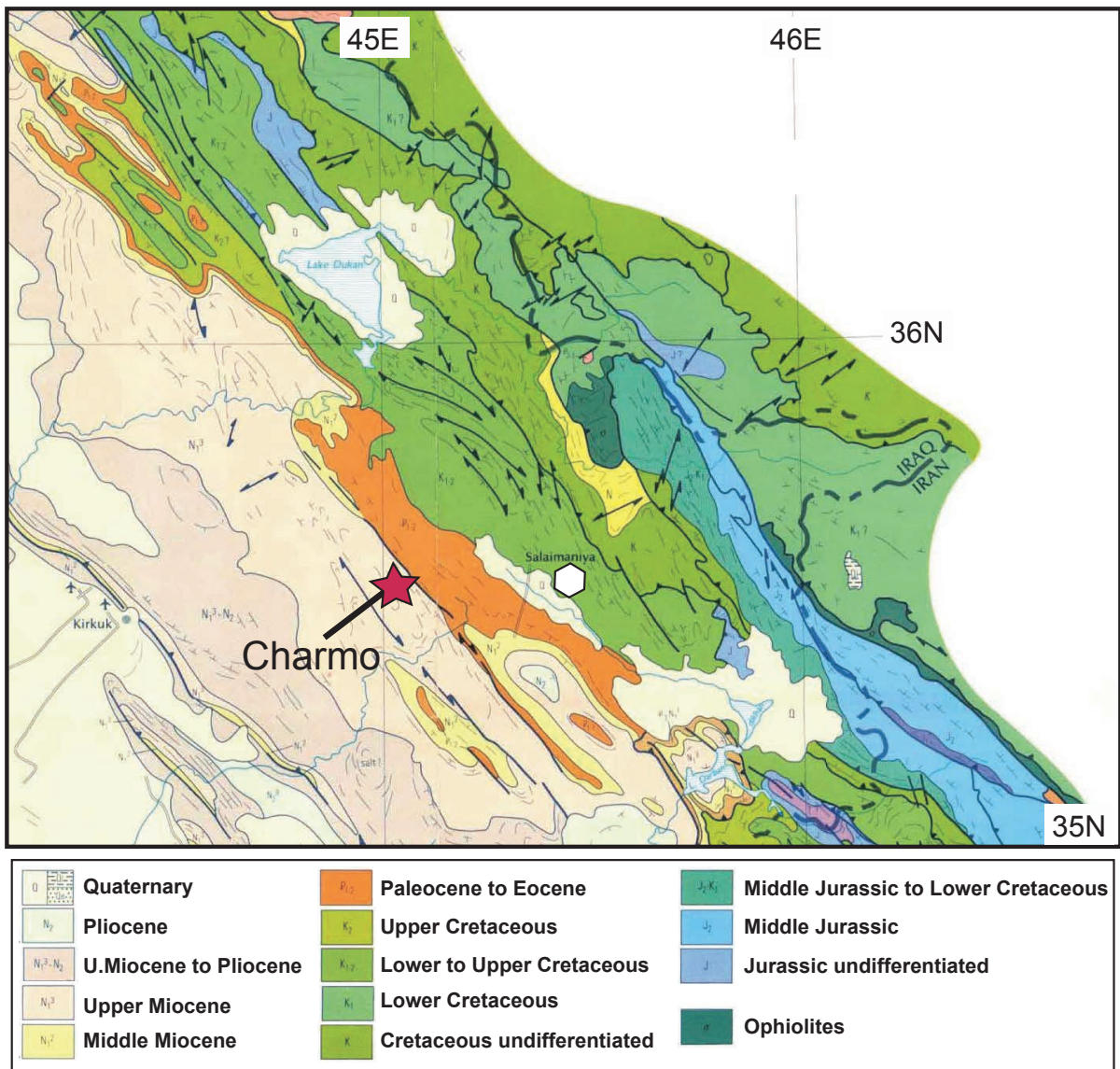


Fig. 4 Geological map of the Slemani region (after Spaargaren 1987, modified by R. Anma).

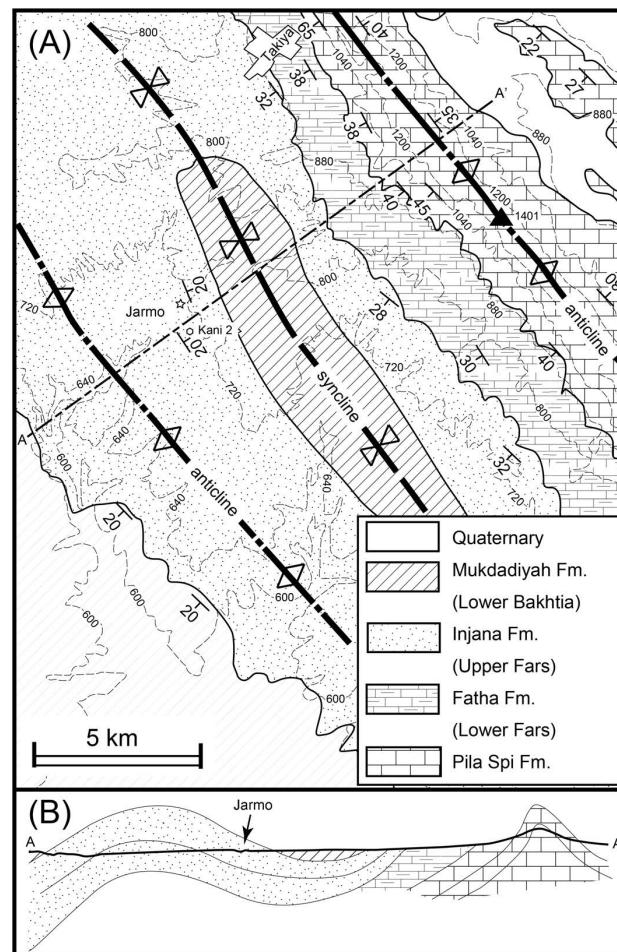


Fig. 5 Geological structure of the Charmo (by R. Anma).

5) Natural environmental surveys to reconstruct the Neolithic landscape.

In 2017, we conducted a trial sounding at Turkaka, an Epi-Paleolithic site. Based on our research, it is concluded that the Turkaka site was a place for the production of chipped stones, especially the blade and micro-blade industry during the Zarzian period, dating between 18,500–16,500 BC [Tsuneki 2019; Tsuneki *et al.* 2019]. The Charmo-Turkaka-Karim Shahir area is extremely rich in both water resources and chert for the lithic industry. These circumstances provided the important motivation for people to make a chipped stone workshop at Turkaka during the Zarzian period.

2. Our Previous Work at Charmo

Thanks to the kind permission of the Department of Antiquity and Heritage of the KRG, we executed a measurement survey at Charmo in the summer of 2016.

In 2017, we executed more extensive GPS and UAV surveys and made a detailed map covering Turkaka and Charmo. All orthographic and measurement maps were made by Nobuya Watanabe, and this detailed map gave us much information as to why the prehistoric people chose Charmo for their early farming village. With the geological information collected by Ryo Anma, we came to understand that Charmo was located on one of the areas extremely prosperous in water, where many springs gushed out of the gap of the underflow water formed by sandstone and marlstone.

We were convinced that this environment certainly affected the formation of early farming villages in this area.

We believe that this work can contribute to a further understanding of Charmo and is indispensable for future archaeological investigation at Charmo. Therefore, in the 2018 season, we continued our measurement survey at Charmo on a larger scale, especially regarding the location of a series of springs. In addition to the measurement survey, we executed remote sensing using GPR to detect the cultural layer. We made small shallow soundings (two 2×2 m and one 1×2.5 m) in three locations (G-10 Grid, Test pit W and J-II north trench) at Charmo to detect the cultural conditions for further investigations. These investigations led us to recognize that Charmo was managed under extremely fruitful natural conditions. The results suggest that the landscape at Charmo was entirely different 9,000 years ago from today. It is certain, therefore, that the settlement of Charmo extended further to the northwest, and the relative height from the riverbed to the hilltop was lower. It seems quite difficult for people to use water from the river for daily life and farming in modern conditions. However, water sources should have been far more accessible when Charmo was utilized for daily life and farming.

In considering the available water resources, attention was paid not only to Cham Gawra but also to a large number of springs gushing from the sandstone and marlstone cracks in the local cuesta topography. To the south of Charmo, the underflow water from the Zagros Mountains gushes out dozens or even several hundreds of meters. A series of kani ('a spring' in Kurdish) is ranged along a few lines at a gentle slope, and they seem to irrigate the gentle slope land naturally toward the southwest from the northeast.

Thus, it is necessary to reconsider the preconception of primitive farming in the Zagros region as "simple rain-fed farming along the hilly flanks," as proposed by Robert Braidwood [Braidwood 1967]. We may get more fruitful results if we investigate a series of archaeological sites in the Chamchamal area while adding to new perspectives and the concept of "more complicated farming using springs in the water reservoir area" [Tsuneki *et al.* 2019].

Based on these previous investigations, we were convinced that Neolithic Charmo people had used the hill area just south of Charmo site because this southern field is now used for wheat and barley farming, and is watered by many springs. In addition, we collected Neolithic materials around some of the springs. Therefore, we spent a week executing surface collection in the southern field in the 2019 field season. The number of archaeological materials is very small, as we could collect just 30 objects, and did not collect objects besides Neolithic and Islamic/modern objects. The distribution of the Neolithic objects is shown in the red circle in Fig. 6. These results indicate that the southern field was used only in the Neolithic and Islamic/modern periods.

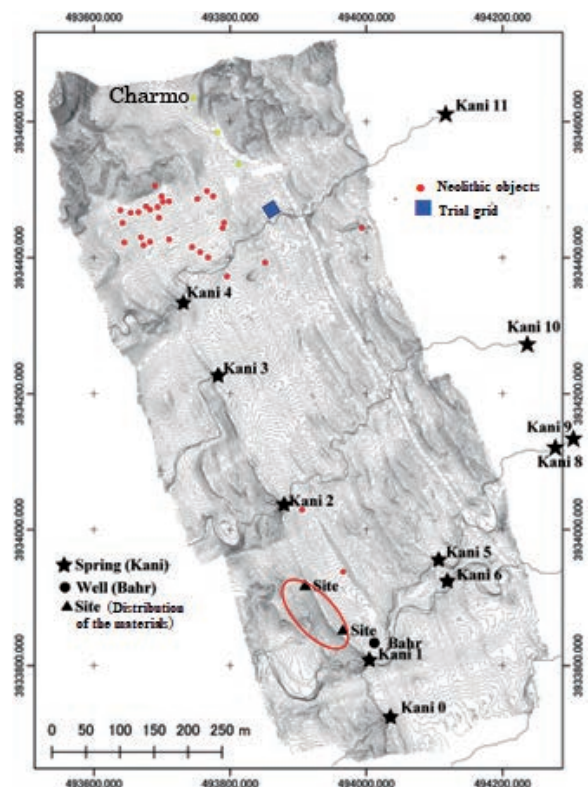


Fig. 6 Map of the Charmo site and southern field. Red circles show the distribution of Neolithic material. The blue square indicates the excavated area of the farming field.

Neolithic objects were collected from the neighboring place, that is, low hills on the north side of the line linking Kanis 11 and 4. We expected to find the sickle elements and stone hoes for prehistoric farming, but there were no such objects. Therefore, we searched for evidence of prehistoric farming fields by excavation. We fixed a 10×10 m trial grid north of the wadi between Kanis 11 and 4 (blue area in the map of Fig. 6), and dug 0.5 m deep. We chose this area because of the high support for plants by spring water in the early spring. The surface layer is used by modern farmers to grow wheat and barley. Under this modern soil, we found another agricultural field showing a similar direction of furrows (Fig. 7-1). It seems that these fields were used only in recent years. On this level, about -20 to -30 cm from the surface, the magnetometric surveys were executed by Yuki Tatsumi (Fig. 7-2). Though we obtained reflections of different directions and widths of furrows, they were a quest structure of sandstone and marlstone. We obtained a land snail just above the quest structure rocks, that we brought back to Japan and sent for ^{14}C dating. The ^{14}C age of the snail is 1510 ± 20 BP, which corrected to calibrated age (1SD) is 541–586 AD (TKA-22138). Thus, even if this location was farming land, it would have been in the Sasanian-Persian period. However, it is almost certain that these southern fields were used as farming land during the Neolithic period, and we thus would like to find evidence of Neolithic farming land in the southern fields.



Fig. 7-1 Trial grid in the south field showing the same direction of furrows as modern ones (-20 – 30 cm).

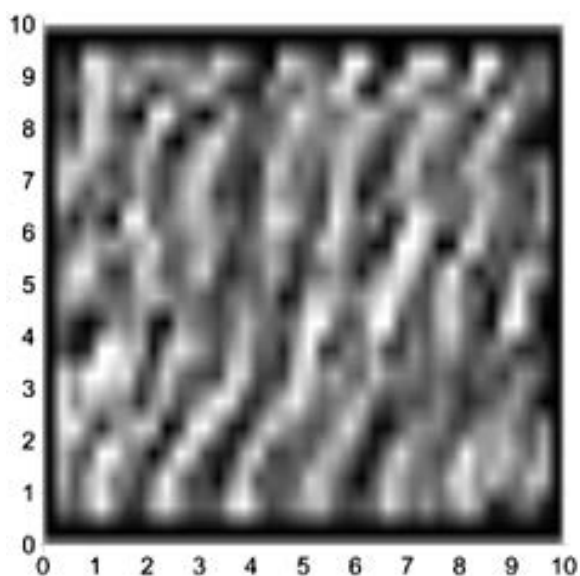


Fig. 7-2 Magnetic gradient map of the trial grid in the south field.

In the 2019 season, we also continued our work to extend the topographic map around Charmo using magnetometric surveys and sounding excavations. A new sounding step trench named J-II south (2×5 m), which was located southwest of Braidwood's Operation J-II, was dug down about 1.8 m below the surface in the southwestern step and another 0.9 m deep in the northeastern step. Over 1,200 potsherds were discovered from all layers. In particular, Layers 5–6 of the J-II south trench produced a large number of potsherds. The number of potsherds drastically decreased in Layers 7–9. Many large fragments of potsherds were included among the pottery from Layers 5–6 (Fig. 8). It is interesting to note that some of the large potsherds were heavily covered



Fig. 8 J-II south trench, showing the potsherd distribution in Layers 5–6.

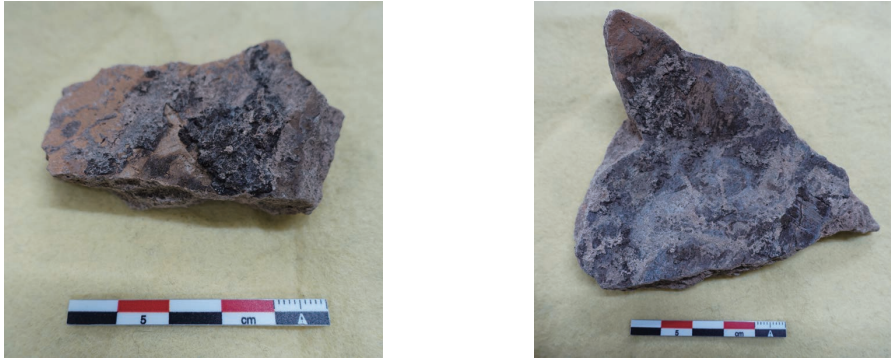


Fig. 9 Potsherds heavily covered with carbide.

with carbide (Fig. 9). ^{14}C samples for Layers 5–6 date most of the layers to around 7,000 cal BC, and these layers can be dated to the beginning of the Pottery Neolithic period. However, many of the carbides on the pottery are dated DEAD, to much over 40,000 years BP. The shape and C/N ratio of the thick carbides and the dating results strongly suggest that they are of bitumen origin. The pottery is attributed to “later manifestation” by McC. Adams study in a report of Jarmo. If they are of bitumen origin, it is highly probable that these pottery vessels were used to warm the bitumen. These pottery vessels undoubtedly date to the first half of the 7th millennium BC. Therefore, it is highly probable that these early vessels were used not only for heating or processing food, but also for making utensils, such as warming bitumen.

For the 2020 and 2021 seasons, the Slemani Department of Heritage commissioned sounding excavations for a week or so each due to the COVID-19 pandemic. The exploratory excavation was conducted in a 1×2 m trench on the northeast side of J-II south trench. The results of each season’s exploratory sounding reinforced the results of the J-II south trench sounding in 2019.

3. Excavations at Charmo, 2022 Season

The 2022 season excavations had two main objectives: First was to establish the chronology of the Charmo site both relatively and absolutely. It is clear that the Charmo site has cultural deposits dating from the Pre-Pottery Neolithic to the Pottery Neolithic period. According to the investigations conducted by the University of Chicago, potsherds were discovered at some locations and not at others in each of the trenches (operations) all over the site. These two kinds of trenches exist in a mess throughout the site. Thus, it is not clear whether the transition from the Pre-Pottery Neolithic to the Pottery Neolithic occurred throughout the entire village or whether pottery was accidentally introduced only in a portion of the Charmo village. In other words, the appearance of pottery cannot be clearly explained at Charmo. The pottery of Charmo still seems to be among the oldest in the Zagros region. Establishing the first pottery in Charmo is thus nothing less than exploring the beginning of the Pottery Neolithic in the Zagros region. Therefore, we want to capture how pottery emerged in Charmo. The University of Chicago study indicated a transition from more elaborate “earlier manifestation” pottery, such as small amounts of painted pottery, to more coarse ones called “later manifestation” pottery. We would like to confirm whether such a transition really occurred at Charmo.

Excavations by the University of Chicago were conducted in the late 1940s and early 50s, when beta ray dating of ^{14}C had just begun. Of course, state-of-the art dating at the time was carried out, but unfortunately the results were quite variable given today’s knowledge. Therefore, with the latest ^{14}C measurement by the AMS method, we would like to determine the absolute ages of Charmo settlement. We have already made sounding excavations beside the Braidwood’s Operation

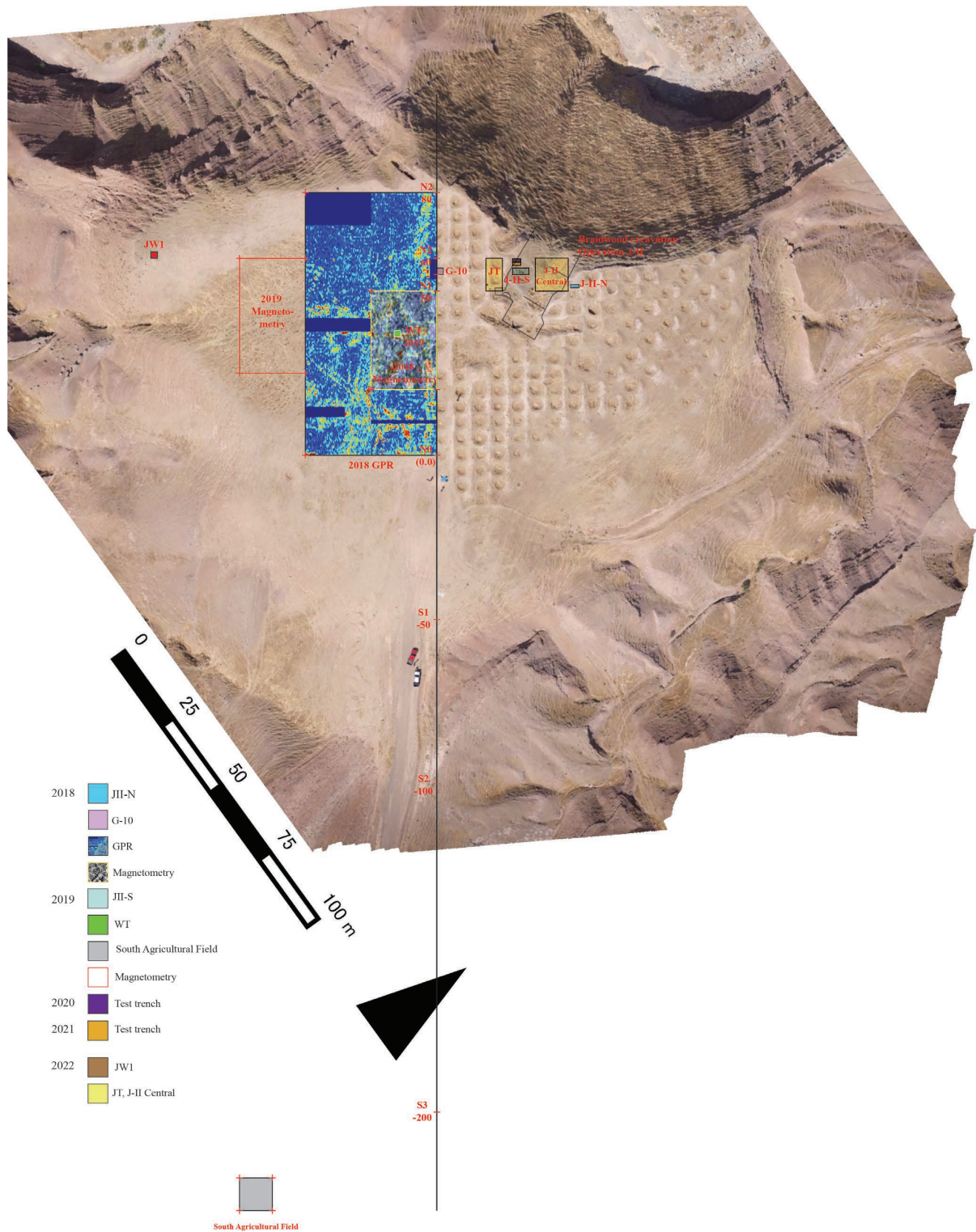


Fig. 10-1 Locations of the excavated squares at Charmo.

(excavation square) J-II (J-II north and J-II south trenches in 2018 and 2019, respectively), and obtained a good series of calibrated ^{14}C ages between 7296–6651 cal BC from the J-II north trench [Tsuneki *et al.* 2019] and 7289–6689 cal BC from the J-II south trench [Miyata, Itahashi and Tsuneki 2021]. The cultural layers investigated in these two trenches can be considered to correspond roughly to the level 5–level 1 building layers in Operation J-II of Braidwood, and can be dated from the end of the Pre-Pottery Neolithic period to the early Pottery Neolithic period. In the 2022 excavations, we would like to increase the amount of ^{14}C data from before and after these cultural layers.

Second, as we have excavated only very small trenches so far, it was hoped that a wider excavation would reveal various aspects of the Charmo Neolithic way of life, particularly in the early Charmo village. As mentioned above, we assumed that Charmo farming was complicated by combining rainwater and spring water, so it is possible that village life at Charmo was not very simple but formed a rather complex society. We thought that it would be possible to pursue such aspects of village life by more intensive excavations.

In accordance with the above two main objectives, a 5×10 m excavation square (named JT square) was set up west of Braidwood's Operation J-II and a 10×10 m excavation square (J-II central square) almost within the Operation J-II area. The locations of these two excavation squares are shown in Fig. 10. JT square was set at the highest elevation at the Charmo site in order to look for the final stage of Neolithic deposits as well as to trace the longest continuous stratigraphic sequence possible. Contrariwise, J-II central square aimed to trace the earlier Charmo Neolithic deposits. Neolithic deposits excavated to virgin soil at Charmo include Step Trench J-A and Operation J-I, both in the north scarp of the mound cut by Cham Gawra. Only a very small area of virgin soil was reached in Step Trench J-A, while at least nine architectural levels were identified in Operation J-1, with virgin soil below them. To excavate earlier Neolithic deposits, it may be better to investigate the north scarp of the mound being cut at Cham Gawra, as in the two Braidwood's Operations. However, the digging was somewhat hazardous on the slope side and there were fears that the deposits had already been scraped away. Therefore, we decided to dig in a 10×10 m excavation square within the Operation J-II, where Braidwood's team had already excavated over 3 m of later Neolithic deposits. As Braidwood's team had found good architectural remains in the lower levels of this Operation, we thought that continued excavation of this area might yield more information about the early farming village of Charmo.

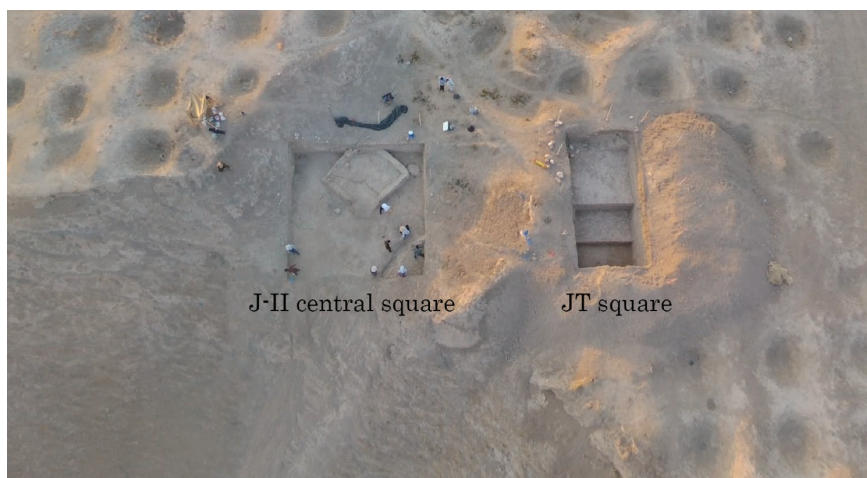


Fig. 10-2 JT and J-II central squares.

(Akira Tsuneki)

3-1 JT Square (Figs. 11 and 12)

JT excavation square falls 50–60 m northwest on the G line from the southwest corner of the G24 Grid of Braidwood’s excavation (our benchmark of the Charmo site), and 15–20 m northeast from that point. The aim of this excavation square was to establish the chronology of the Pre-Pottery Neolithic to the final period when the village of Charmo was inhabited. The uppermost layer of the excavation, excluding the Braidwood’s excavation pile of waste soil, is 731.2 m above sea level, close to the highest point of Charmo village, and appears to be the final end of the settlement. It falls in an area where not many structure remains have been expected, based on information from the trial sounding pits dug by Braidwood. As expected, nothing resembling structures was found in the upper 2m-plus deposit, apart from a couple of stone concentrations (Structures 1–3). Rather than splendid structural remains being detected, a very large number of potsherds were recovered, together with lithic tools and animal bones (Table 1). These potsherds consisted of many heavily chaff-tempered coarse ware and a few burnished fine ware. The carinated bowls with opposing longitudinal handles shallow bowls and generally thick pottery with rare decoration are the characteristics of coarse ware. On the other hand, burnished fine ware was scarce and consisted only of small fragments. No pottery that could be described as Hassuna- or Sammara-type pottery has been found at all, and it is also very different from the so-called Pre-Hassuna. Some of the elements, such as applique decoration, are somewhat similar to proto-Hassuna pottery; however, coarse ware are the very pottery vessels that Robert McC. Adams called “Later manifestation” in the Jarmo final report [Braidwood *et al.* 1983]. Thus, for the moment, the final settlement at Charmo came to an end roughly in tandem with or before the proto-Hassuna period. In this sense, the central ¹⁴C date we obtained from the J-II north trench, 7296–6651 BC, can be considered



Fig. 11 3D image of JT square.

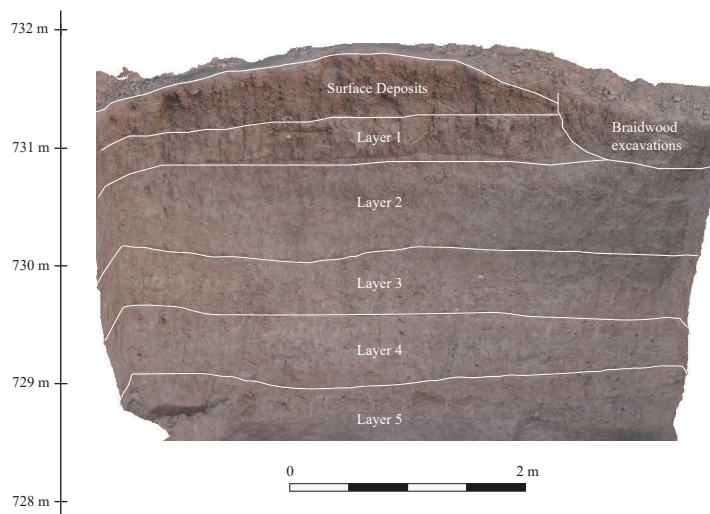


Fig. 12 North section of JT square.

Table 1 Number of potsherds discovered from JT square

Layer	Total number of sherds	Number of coarse ware sherds (rim sherds)	Number of fine ware sherds (rim sherds)
Surface	42	40	2
Layer 1	1,562	1,502 (81)	60 (22)
Layer 2	3,191	3,073 (218)	118 (19)
Layer 3	783	695 (28)	88 (30)
Layer 4	29	29	0
Layer 5	1	1	0
Total	5,608	5,340 (327)	268 (71)

the final age of the Charmo settlement. The samples obtained from JT square will also undergo ^{14}C dating, which should confirm this prospect. In Layer 4 of JT square, there is a sharp decline in the number of potsherds and very few are excavated. Near the eastern wall of the trench between Layers 4 and 5, a carbonized area was uncovered. This area was not revealed completely because it continued off the excavation area. However, continuous traces of black color were visible on the east and north section walls of Layer 4 and continued to Layer 5. At Layer 5, only one small potsherd was excavated. We are now almost in the Pre-Pottery Neolithic cultural layers. Instead of fewer artifacts, Layer 5 yielded a fragment of what appears to be a *tannor* and two human infant skulls from nearby. Horns of an animal and many animal bones were also recovered in Layer 5. The absolute elevation of this Layer 5 is 728–729 m asl, which is almost the same as the elevation of Layer 5 of our J-II central square (meaning Level 5 of Braidwood's Operation J-II).

(Sari Jammo)

3-2 J-II Central Square

The aim of the investigation in this excavation square, in contrast to JT square, is to explore the older cultural layers of Charmo. As mentioned above, Braidwood's research shows that the oldest cultural layers of Charmo were only detected in a small part of Step Trench A and in the bottom of Operation J-I at the north scarp of the mound. This leaves it ambiguous as to when and how the first settlement in Charmo began to operate. Therefore, we decided to dig further by cleaning the J-II operation, which is the widest and reaches the most extensive and relatively earlier cultural layer excavated by Braidwood and his colleagues. As with the establishment of JT square, a 10 m × 10 m excavation square was set up (almost entirely within the Braidwood's Operation J-II area), using our benchmark as a starting point, and hitting a point 50–60 m to the northwest and 30–40 m to the northeast, we cleaned and dug down.

Braidwood excavated the northeastern half of Operation J-II up to what Braidwood calls Level 6 (our renamed Layer 6) and the southwestern half up to Level 5 (Layer 5). Many structures were detected by his excavations; however, unfortunately almost 70 years after the excavations, few structures remained. During this season, we excavated the architectural remnants of Layer 5 and new architecture of Layer 6, so the main structures were detected in the southwestern half of J-II central square, because the structures of Layer 5 in the northeastern half of the excavation square had already been removed by Braidwood to excavate the lower Layer 6 structures.

3-2-1 Structures in Layer 5 (Fig. 13)

As for the structures of Layer 5, the southwestern half of the J-II central unearthed structures of the stone row (Str. 4) from the southeast corner of the excavated area, and from the middle of the border with the northeastern half of the J-II central, a *tannor* (Str. 11) was detected. A few other Layer 5 structures remained in the unexcavated area by Braidwood. One of the most interesting structures is Str. 8, which appears to have been a cache of tools and materials for manufacturing chipped stones and stone vessels (Fig. 14). The structure contains a primary chert core with cortex roughly stripped, hammer stones, and anvil stones. It also contains rough marble stones that were the material for stone vessels. Grinding stones might have been used for marble shaping. Preparation flakes and other items were discovered in clusters from immediately to the north of this structure, too.

Along the southern limit of J-II central square, an ash pit (Str. 9, Fig. 15) was detected in the lower level, but this pit was dug down from Layer 5. In this pit, a broken marble bowl and a beautiful marble spoon, which was broken in two but joined and complete, were discovered (Fig. 16). It is most probable that the marble bowl and spoon formed a set that was discarded in this ash pit after being used for some special ceremony.

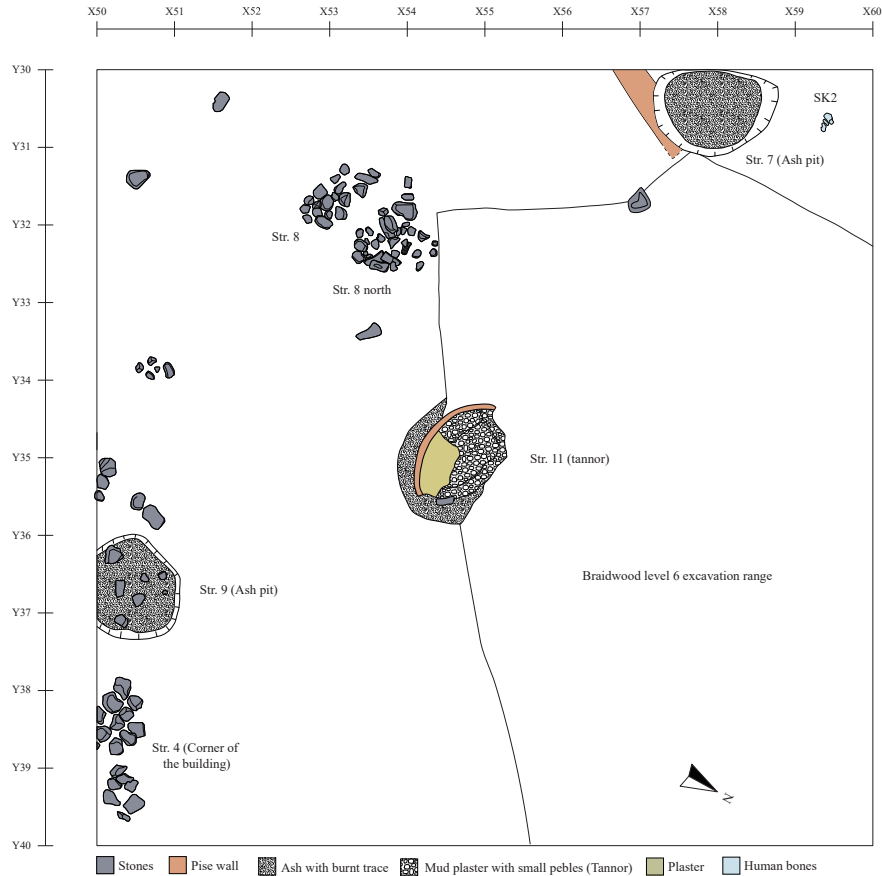


Fig. 13 J-II central, Layer 5 structures.



Fig. 14-1 Str. 8, a cache of tools and materials for manufacturing chipped stones and stone vessels discovered in Layer 5 of J-II central.



Fig. 14-2 Tools and materials for manufacturing chipped stones and stone vessels.

Str. 11 was detected almost in the center of J-II central square. For the northern portion, it was lowered to excavate the Layer 6 by Braidwood and colleagues, so only the southern half remained. It was an oval planned *tannor* measuring about 1.0 m in diameter, and small river pebbles were laid under the blackened plaster floor. As this *tannor* was constructed from the upper levels, the wall at the north corner of Building Str. 10 of the Layer 6, discussed below, was scraped away.

In the northeastern half area of J-II central square, only about 1.0 m along the west side of



Fig. 15 Structure 9 (ash pit) in Layer 5.



Fig. 16-1 Marble bowl and spoon discovered in Structure 9.



Fig. 16-2 Marble spoon.



Fig. 16-3 Marble bowl.

the square was unexcavated by Braidwood. From there, ash pits and pisé walls have been found in fragments. These structures extend further west outside of the excavation square.

3-2-2 Structures in Layer 6 (Fig. 17)

After removing the remnants of Layer 5 structures, we found a square-planned pisé building structure in the topmost of Layer 6 (Str. 10, Fig. 18). The building measures 4.9 m × 4.6 m with pisé walls 0.34–0.45 m in thickness. A large limestone hollow stone was found outside, west of the southern corner of this square building (Fig. 19), and was likely to have been used as a door pivot. If so, there was an entrance/exit at this corner.

Detection of the Structure 10 pisé wall and floors reveals that it had been re-stacked several times, partly with foundation stones in between. This square building seems to have been built from the time of Layer 6 almost in the same place, and at least two or more floor surfaces have been detected (Fig. 20). Fragments of matting have been found here and there inside and outside this square building. They are probably remnants of rugs that were laid on the floor and other surfaces in the period of the upper level of Layer 6. The condition of the surviving mats is not good, but as they have been recorded in 3D images, there is a good chance we will identify the material and how it was woven. Materials seem to have been made of reeds and other herbaceous plants, and were made by alternately crossing several flattened bundles of materials, or by arranging the bundles as they were (Fig. 21).

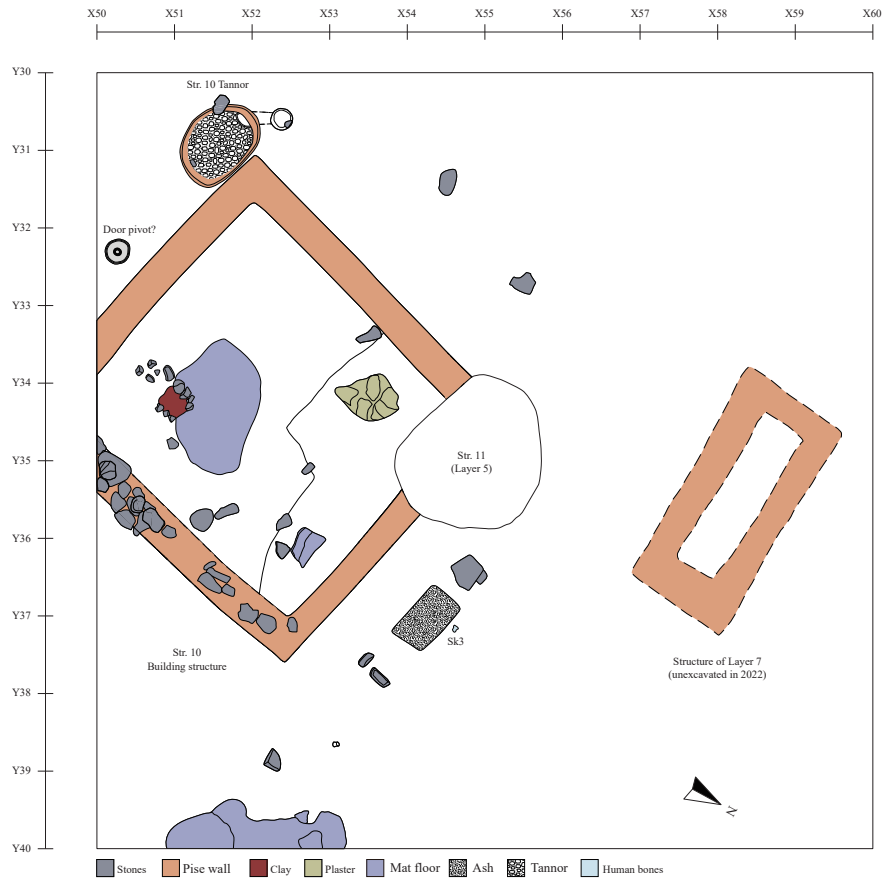


Fig. 17 J-II central, Layer 6 structures.



Fig. 18 Building Structure 10 in Layer 6 upper.



Fig. 19-1 Stone door pivot.



Fig. 19-2 A hollow stone as a door pivot.



Fig. 20 Str. 10 building with several floors in Layer 6.

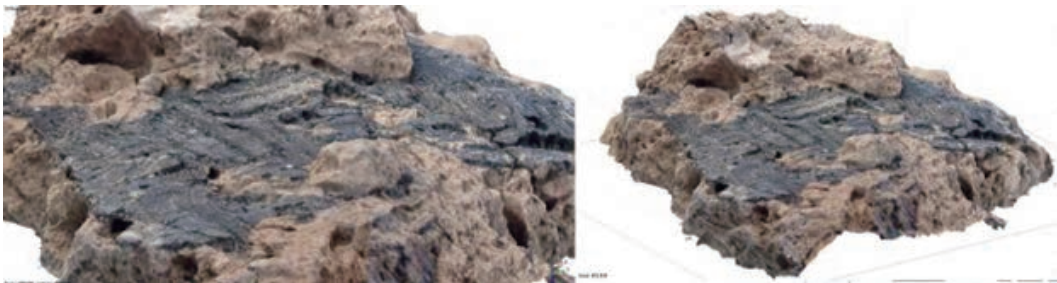


Fig. 21-1 Mat on the clay found east of Str. 10.



Str. 21-2 Mat on the clay discovered inside Str. 10.



Str. 21-3 Mat on the clay around Str. 10.



Fig. 22 Strs. 10 and 12 in Layer 6 lower.



Fig. 23 Square clay structure on the second floor of Str. 10.



Fig. 24 Three clay animal figurines discovered around a small clay square structure on the older floor of the Str. 10 building.

At the time of Layer 6 lower, this Str. 10 pisé wall survived at more than 0.5 m in height (Fig. 22). In several places inside the building Str. 10, partial floor surfaces remained.

One of the most interesting discoveries is on the part of such a matting floor, which was a part of the lower floor of the Str. 10 building. It was a 30 cm × 30 cm square clay structure, partially surrounded by stones. Three animal clay figurines were discovered around this structure (Fig. 23). All these animal figurines lack head and toes (Fig. 24). We can imagine that people gathered around this small square structure and performed some kind of ritual with the animal clay figurines.

An unbaked clay female figurine was also discovered outside west of the Str. 10 building (Fig. 25). Although small and tiny, it should be noted that four clay figurines have been discovered in association with this building.

It should also be noted that a very good preserved *tannor* (Str. 12) has been detected externally on the west wall of Str. 10. The floor surface of the *tannor* is made of a very beautiful



Fig. 25-1 Clay female figurine discovered west of Str. 10 building.



Fig. 25-2 Clay female figurine.

blackened mud plaster, with a hole laid on the northern side for smoke exhaust or air vents (Fig. 26). Braidwood also discovered a similar structure, and *tannors* of this construction are characteristic of Charmo. At the discovered level, this *tannor* appears to have been attached to the western wall of Str. 10 during Layer 6 lower.

For the northeastern half of J-II central square, almost the entire area had been excavated to Level 6 (our Layer 6) by Braidwood and his team, except along the western wall of the square. Therefore, few remains were detected. However, in the middle of this half, a structure that appears to be pisé walls was found, and it is assumed to be either a remnant of the structures of Level 6 or the topmost surface of the Level 7 structures. We have not excavated these structures this season.

Although a relatively large area was excavated in J-II central square, with the context of cleaning, very few small potsherds were recovered from Layers 5–6 (Table 2). This aspect is similar to Levels 5 and 6 at the time of the Braidwood's excavations, and it is assumed that these layers are already Pre-Pottery Neolithic cultural layers. Dating of carbon samples recovered from these layers is currently underway.

There is almost no pottery found, but a large number of chipped stone tools and animal bones were unearthed. The main materials of chipped stones are chert and obsidian. 321 chert chipped stones and 288 obsidian chipped stones were excavated. Among the former, the main stone implements are blades, including sickle elements, while micro-blades are mainly prominent among the latter. The high percentage of obsidian tools is characteristic of Charmo, but the aspect of the stone implements also indicate that Layers 5–6 belong to the terminal Pre-Pottery Neolithic period.

Instead of pottery vessels, a total of 20 stone vessels were recovered from J-II central. None of the vessels are complete, but include a good marble stone vessel. Many others are made of limestone or sandstone. Fig. 27 shows a sandstone animal figurine from Layer 6. Fig. 28 is a marble ornament also excavated from Layer 6. Other ground stone objects such as hammerstones and grinding stones are also prominent in the excavation.



Fig. 26 *Tannor* (Str. 12) discovered on the western wall of the Str. 10 building.

Table 2 Number of potsherds discovered from J-II central

Layer	Total number of sherds	Number of coarse ware sherds	Number of fine ware sherds
cleaning	12	11	1
Layer 5	4	2	2
Layer 6 upper	0	0	0
Layer 6 lower	2	2	0

(The two pieces from Layer 6 lower may be intrusive because they were discovered during the cleaning of the layer)



Fig. 27 Sandstone animal figurine discovered in Layer 6.



Fig. 28 Marble ornament discovered in Layer 6.

Animal bones are being analyzed by Dr. Hitomi Hongo, who has reported that domesticated sheep and goats dominate the animal bones excavated from the J-II north and south trenches.

(Akira Tsuneki)

4. Measurement and Survey to Evaluate the Erosion Surface around Charmo

4-1. Evaluation of geomorphological features around the Charmo archaeological site

The Charmo archaeological site is cut by a deep valley made by the flow of Cham Gawra, which implies an occurrence of massive erosion since the time of habitation in the Neolithic Period. It is worth reconstructing the paleo topography, which can help in considering the land use and early farming by providing a tangible spatial structure. Reconstruction of past topography is a challenging task that requires various information from different study fields. Geomorphological feature is one of them, which is directly related with the spatial structure and its shape of the terrain surface. Thus, information about the overview of the topographic characteristics, detection of remaining surface, and the strength of on-going erosion/deposition should provide a good starting point for the preliminary reconstruction of the land. An analysis by DEM, observation of the erosion nowadays of the northern cliff of Charmo, and a survey around Charmo were conducted to fulfill this aim.

4-2. Evaluation of the topography and erosion based on Charmo DEM

GIS analysis was employed to evaluate the characteristics of the topography and to roughly estimate the past topography. Generation of a summit level map and ridge map were attempted using AW3D DEM (50 cm resolution). The summit level map was calculated from a contour derived from the equispaced points containing the highest elevation values within certain extent¹⁾. As a result, the calculation will smooth out the topography and fill the small-scale valleys²⁾, which is expected to roughly represent the topography before erosion. Intensity of erosion was indicated by subtracting the summit level map from the original DEM (Fig. 29 left). The ridge detection map, in contrast,

1) Distance (extent) parameter changes the scale of the valley to be smoothed. Thus, the amount of erosion (which is decided by distance parameter) represents the time scale at the same time. In this study, a parameter that smoothed small valleys and left the channel of the Cham Gawra visible, was selected by comparing several results from different parameters.

2) The wider the extent, the smoother the result. Appropriate values for the extent are decided from a graph depicting the relation between the heights from the selected main summits and the distances from the summits.

is expected to extract the remaining surface. The MRVBF module in the QGIS (SAGA plugin) is used to calculate the MRRTF index³⁾. The ridge-shaped surface was extracted by setting a threshold to the calculated indexes (Fig. 29 right).

The result shows that erosion to the north of Charmo is significant, while Charmo itself is characterized by its comparatively connected area of ridges. Actually, there are several areas where ridged areas are connected more widely. These areas tend to be far from the river channels, which is not surprising when considering the process of erosion. However, these areas may not be advantageous for habitation, given their access to water could be more difficult. Thus, a ridged area that is close to the river channel may have priority when conducting a survey.

4-3. 3D measurement of the valley surface of Charmo and detection of the change

A comparison between the 3D measurement results of the northern valley of Charmo in 2019 and 2022 was conducted. The difference within this three years is visualized by subtracting the point clouds of 2019 and 2022 (Fig. 31).

The calculation result shows the erosion in the upper part of the gouged slope, and the deposition in the bottom as a result of the erosion. The slight erosion observed widely in the upper area is due to the different condition of the grass, while the deposition is of the soil dug out in the excavation. The result shows an active erosion deposition process today, which implies the

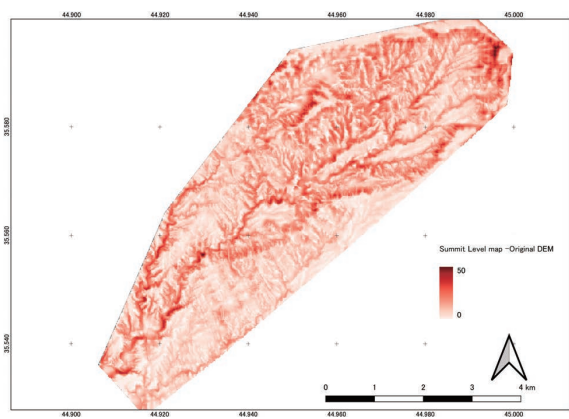


Fig. 29 left: Intensity of the erosion (subtraction of the summit level map from original DEM).

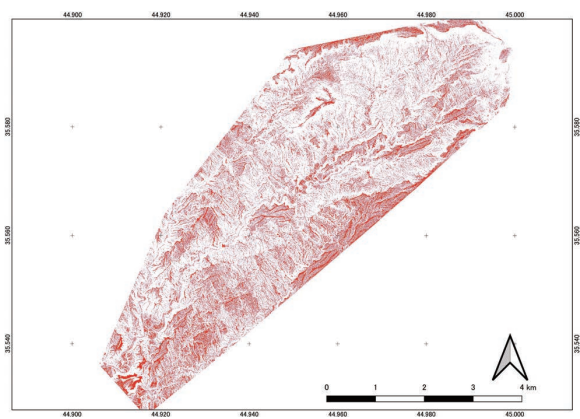


Fig. 29 right: Extracted ridge-shaped terrain based on MRRTF.

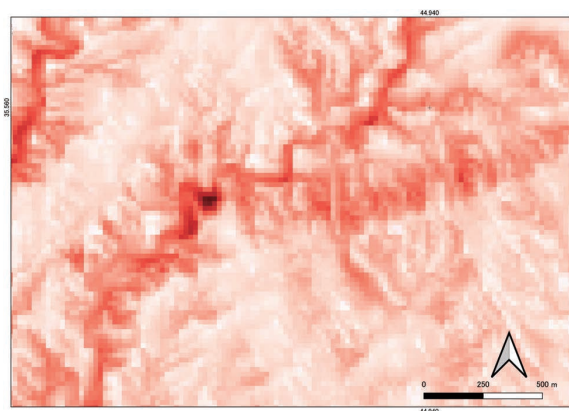


Fig. 30 left: Intensity of the erosion around Charmo.

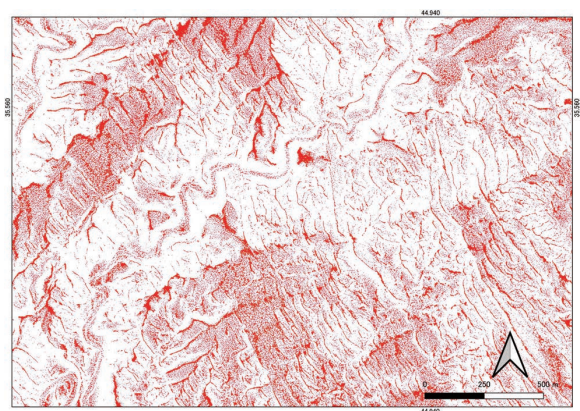


Fig. 30 right: Extracted ridge shape terrain around Charmo.

3) MRVBF (Multi Resolution Valley Bottom Flatness) is a function and index to distinguish a valley bottom from a hillslope, while MRRTF (Multi Resolution Ridge Top Flatness) is used to distinguish the ridge [Gallant and Dowling, 2003].

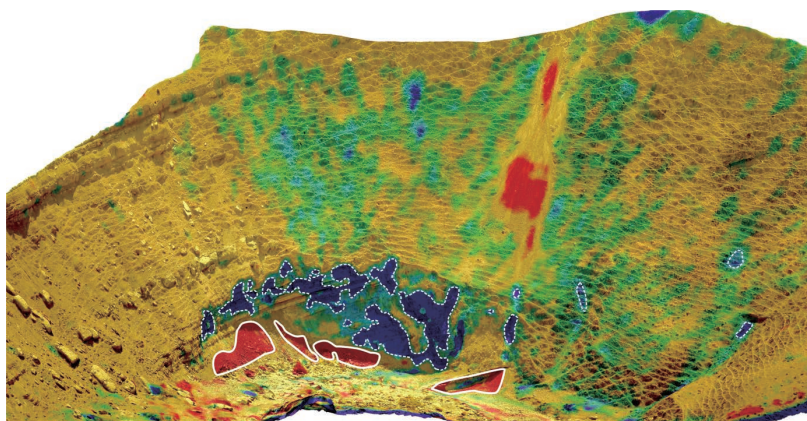


Fig. 31 Difference between 2019 and 2022 (dotted line show eroded area while white line shows deposited area).

occurrence of a significant change in terrain and landscape around Charmo within the past several thousand years.

4-4. Survey around Charmo

The land where archaeological sites are found can be an area with less erosion than others. Thus, grasping the distribution of archaeological sites can be helpful in understanding the erosion and the original landscape at the time. From this perspective, a survey around Charmo was conducted in 2022. A track-log and representative points of artifacts found were recorded by a handheld GPS device. Mapping of both track-log and points will indicate not only the places where artifacts were found but also the places where artifacts were not found⁴⁾ (Fig. 32). It is expected to provide a basic idea of the land surface when it was less eroded. The distribution of stone tools, which is relict from the older time and closer to our interest, was an area of particular focus (Fig. 33).

The result shows a cluster of points with a comparatively large number of stone tools to the northwest of Charmo, while stone tools are almost absent on the southern bank of Charmo (Fig. 33), perhaps due to the comparatively strong erosion that can be observed in Fig. 30 (left). The clustered points in the northwest area imply intense human activity, but the fact that tools made of obsidian can only be found at Charmo makes it difficult to think of these areas and Charmo as forming one united area.

4-5. Attempt at preliminary surface reconstruction

Interpolation using the elevation values of the points where stone tools were found (which we regard as less eroded area) around Charmo was conducted (points within the white box in Fig. 34 were used). This is another preliminary attempt to estimate an old terrain surface, which is a different approach from the summit level map in Section 4-2. This surface is expected to show the highest possible surface around Charmo⁵⁾.

4-6. Summary

The results from the above observations can be summarized as follows: 1) Charmo is located in an area where erosion is comparatively strong within the Cham Gawra Basin, 2) stone tools were

4) Of course, there is a great difference between “surveyed but nothing found” and “not surveyed, so no symbols of artifact area” in the map. Attempt was made to avoid survey bias; by including different landscapes and filling the area as equally as possible, when selecting the survey routes.

5) Further evaluation and screening of the possibility of the artifacts flowing in from other places, and unevenness of habitation should be taken into account.

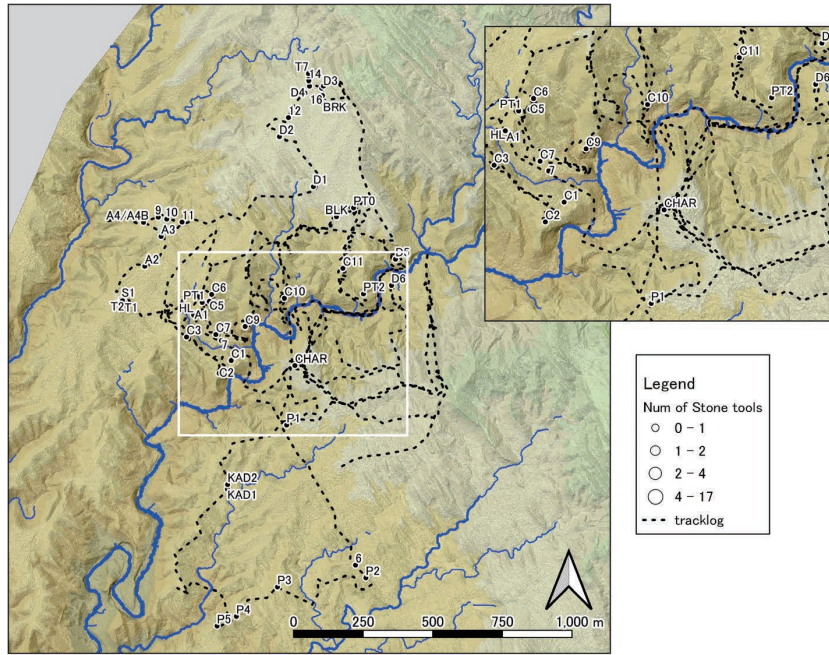


Fig. 32 Sites recorded by the survey in 2022.

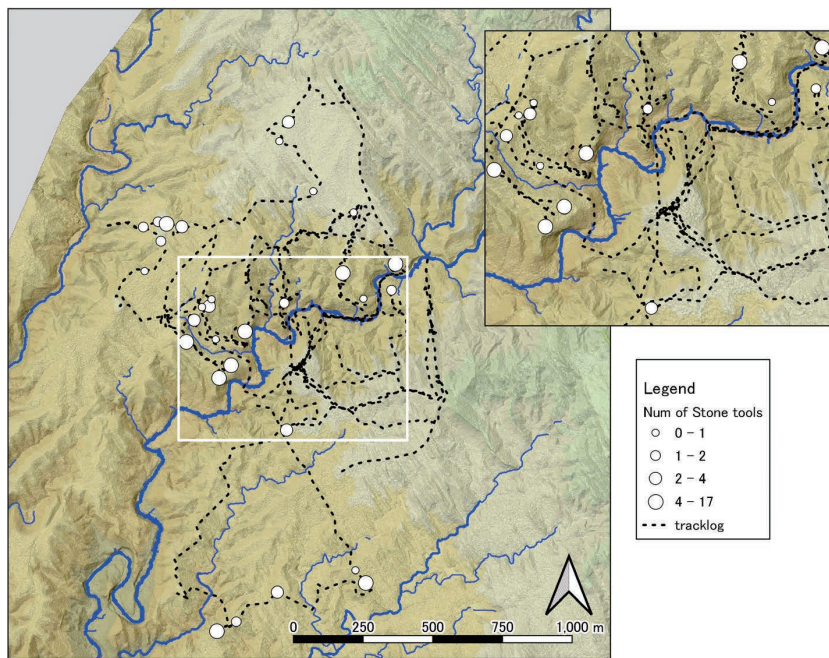


Fig. 33 Numbers of stone tools found.

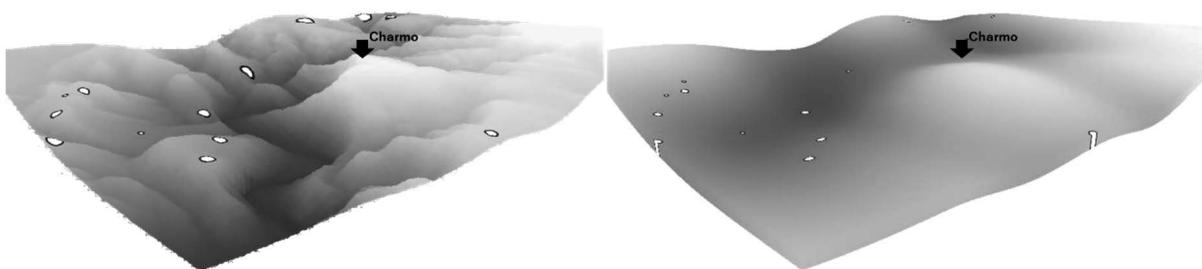


Fig. 34 right: Interpolated DEM from points where stone tools were found.

mainly detected in an area that is ridged and near a river channel, 3) the erosion/deposition process remains active (at least strongly enough to be detectable over a few years) around Charmo, and 4) points where stone tools were found are scattered more to the northwest of Charmo. Preliminary information and visualization were employed as a basis of paleo terrain reconstruction.

(Nobuya Watanabe)

5. Obsidian Stratigraphy of Charmo JT and J-II Central Squares and Stratigraphic Correlations between the Previous Trenches (Figs. 35–39)

Aiming to construct an obsidian stratigraphy of the Charmo site, obsidian tools excavated from JT and J-II central squares in the summer of 2022 were subjected to chemical composition analysis using a portable X-ray fluorescence spectrometer (pXRF). We used an Olympus VANTA VCR-CCC (Rh target, 4W X-ray tube) for the measurements and allocated 30 seconds to Beam 1 (at an accelerating voltage of 40 kV to measure the concentrations of Ti, V, Cr, Mn, and 23 elements heavier than Fe), and 60 seconds to Beam 2 (concentration measurement of Mg, Al, Si, P, S, K, Ca, Ti, and Mn at an acceleration voltage of 10 kV) X-ray irradiations. The reliability of the measurements was evaluated by measuring a set of standard rock-slab samples with known concentrations of each element.

We analyzed 508 obsidian stone tools excavated from JT and J-II central (J-IIC) squares during the 2022 field season. In order to suppress the influence of changes in the analytical values due to surface conditions (surface irregularity, roughness, etc.), the analytical values were evaluated for 368 obsidian pieces where LE (the total amount of elements lighter than Na) fell within the range of $50\% \pm 5\%$. Al, Si, P, K, Ca, Ti, Mn, Fe, Cu, Zn, Rb, Sr, Y, Zr, Pb, and Th concentrations were used for the further analyses, which were determined to be reliable as a result of repeated analysis of the rock-slab standards.

A principal component analysis was performed using the concentration of elements as variables after applying a centered log-ratio transformation to each concentration [Aitchison 1986; Kucera and Malmgren 1998]. In the case of zero concentration values, we substituted the value with one

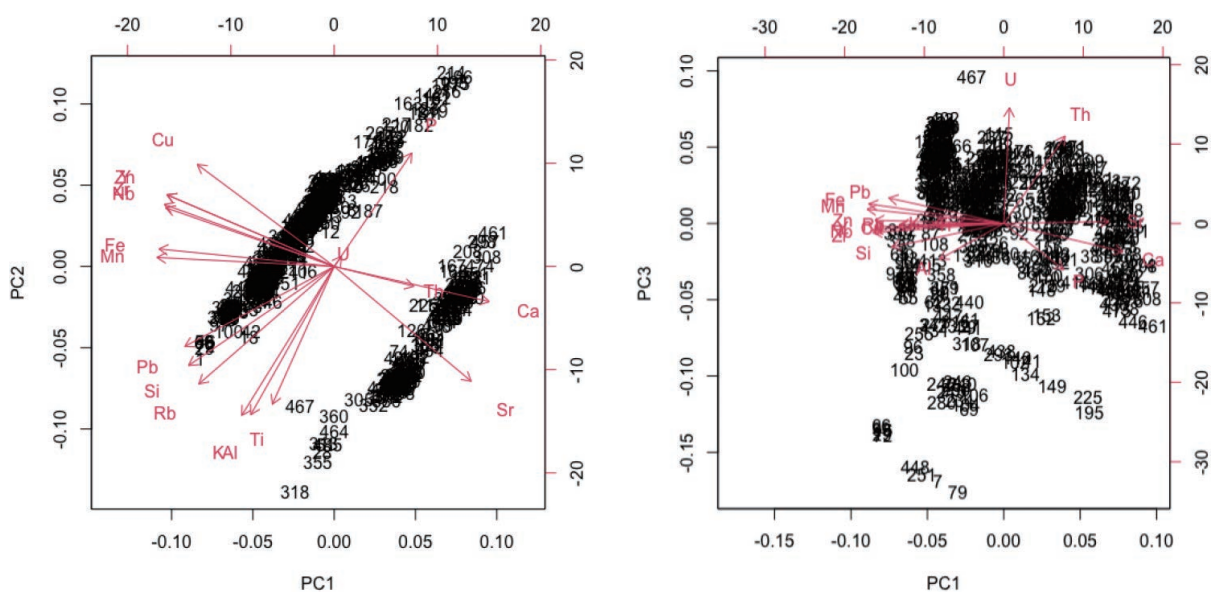


Fig. 35 Results of the principal component analysis for the chemical compositions of the obsidian stone tools excavated from the JT and J-IIC trenches of the Charmo site. By taking PC3 into consideration, the obsidian tools could be further divided into 5 or 6 groups.

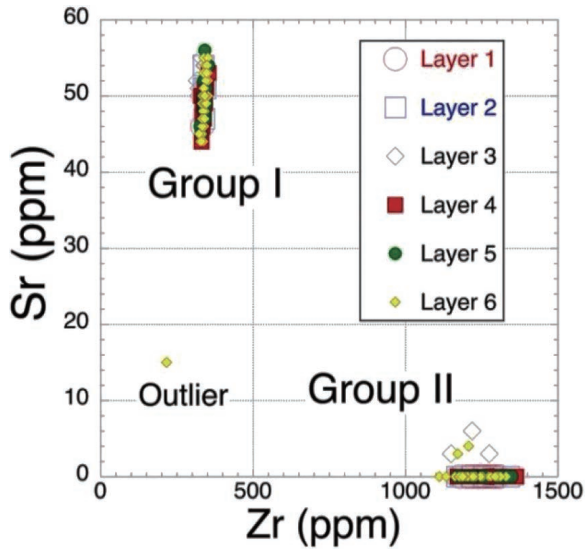


Fig. 36 Sr-Zr plot for the obsidian tools excavated from the JT and J-IIC trenches.

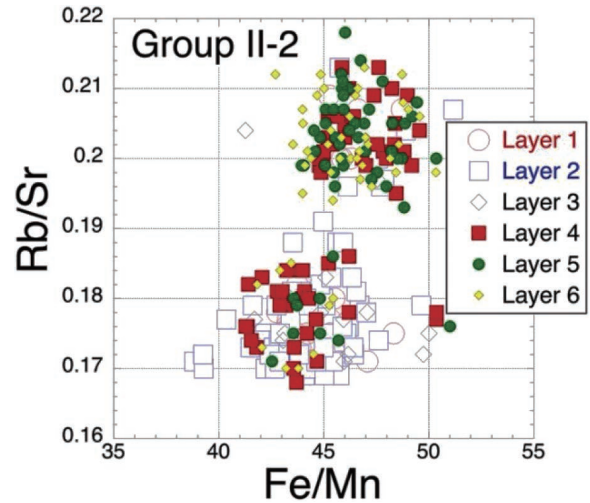


Fig. 37 Rb/Sr-Fe/Mn plot for the obsidian tools excavated from the JT and J-IIC trenches.

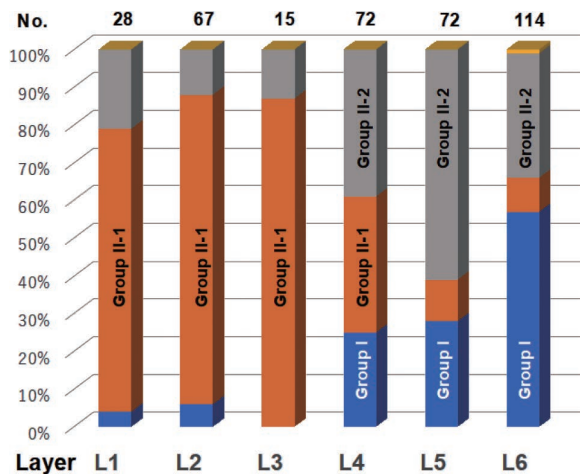


Fig. 38 A standard obsidian stratigraphy of the Charmo site established using the same data set.

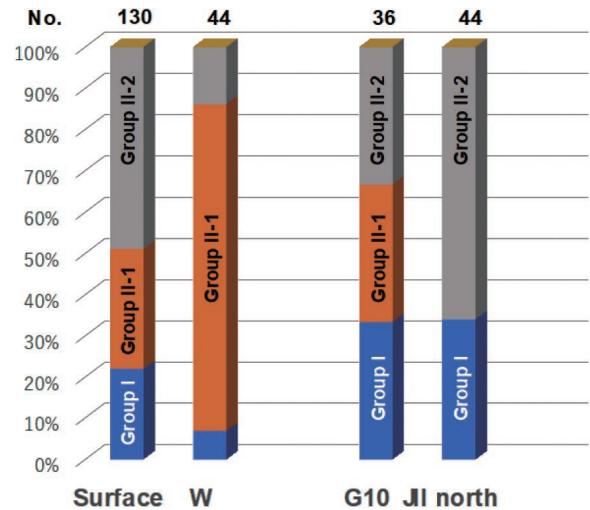


Fig. 39 Stratigraphic correlation with the W, G10, and J-II north trenches.

tenth of the minimum concentration of the corresponding element. As a result, 80% of all data are represented by the first three principal components. Obsidian samples are divided into two clusters by the first principal component (PC1), which has a particularly high contribution (55%). In the Zr and Sr plots, which have large loadings on the PC1, the measured obsidian tools can be broadly divided into two groups: Group I with Zr concentrations of 200 to 300 ppm and Sr concentrations of approximately 50 ppm, and Group II with Zr concentrations of over 1,000 ppm and almost no Sr. Group II obsidians could further be divided into group II-1 with Rb/Sr ratios below 0.19 and group II-2 with Rb/Sr ratios above 0.19 by taking the Rb/Sr and Fe/Mn ratios associated with second principal component (PC2) as axes. Thus, the obsidian excavated from JT and J-IIC squares of Charmo can be divided into three composition groups, except for one outlier excavated from the deepest layer. In comparison with previous studies [Maeda 2009; Frahm 2012; Chataigner and Gratuze 2014a, b; Campbell and Healey 2016], Group I obsidian was most likely sourced at Bingöl B obsidian site, whereas Group II-1 and Group II-2 obsidians can be correlated with the Nemrut

Dağ and Bingöl A obsidian sites, respectively.

To establish a standard obsidian stratigraphy that represents the Charmo site based on the geochemistry of the obsidian tools, frequency of occurrences of these obsidian groups were analyzed for each stratigraphic horizon of JT square, that is, Layer 1 to Layer 5 described in the previous chapters. For this analysis, geochemical data of obsidian tools excavated from the J-II central Layer 6 upper were merged into JT Layer 5 data based on our stratigraphic correlation, and together described as Layer 5 in Fig. 38. Similarly, those of J-II central Layer 5 were merged into JT Layer 4, and together described as Layer 4. Those from the J-II central Layer 6 lower were solely treated as Layer 6. The frequency of the obsidian groups indicates that Group II-1 obsidian was mostly used in upper Layer 1 to Layer 3, while in the lower Layer 5 and Layer 6 horizons, Group I and Group II-2 obsidians were dominant. The large transition occurred during the Layer 4 period. Thus, in the Layer 6 period, which corresponds to Pre-Pottery Neolithic according to field observation, obsidians seemed to have been used from various producers, including an outlier obsidian, but nearly half was provided by Bingöl B (Group I obsidian) producer. As time passed, but still during the PPN period, the Bingöl A (Group II-2 obsidian) producer won the position of the primary producer, but its glory did not last long. Their prominence quickly moved to the Nemrut Dağ (Group II-1 obsidian) producer by the period of Layer 3, that is, the Pottery Neolithic, and it continued until the abandonment of the Charmo site.

The suggested obsidian stratigraphy could be applied to the other trenches of the neighboring areas excavated previously. By comparing the obsidian stratigraphy with the frequency of the obsidian groups, we suggest that obsidian-yielding strata of the J-II north (J-II-N) trench corresponds to Layer 5 (PPN) of the JT square, whereas the obsidian-yielding strata of the G10 trench belong to Layer 4 (PPN/PN transition), and those of the W trench to Layer 2 (Pottery Neolithic).

The obsidian frequency from the surface layer, which is basically debris from the previous excavations, provides an interesting addendum to the suggested obsidian stratigraphy of the Charmo site. Unlike the Layers 1–3 obsidian frequency, the surface layer is rather abundant in Group II-2 obsidian tools and depleted in Group II-1 obsidian tools. Considering Group I and Group II-2 frequency and their ratio, the previous excavation obviously reached to the level of our Layer 5. Depletion of Group II-1 obsidian tools from the surface layer suggests that the pioneering excavators collected the Group II-1 obsidian tools selectively, and removed them from the ground. This hypothesis could easily be tested by measuring the chemical compositions of the obsidian tools from the Charmo site now stored in the museums.

(Ryo Anma and Yu Saitoh)

6. Searching for Charmo's Burials

Investigations in the previous 2018 and 2019 seasons focused on reconstructing the ancient landscape during the time of the Neolithic village and understanding the complex chronology of the site [Tsuneki *et al.* 2019]. Excavation in this season also aimed to gain a further understanding of the chronology of the site, in addition to detecting the ancient village and search for Charmo's burials.

6-1. Neolithic burials in Zagros area

The western wing of the Fertile Crescent (Levant and Anatolia) has long been the focal region for studying Neolithization, and the large number of burials uncovered from various sites provides insights into the Neolithic mortuary variability [Kenyon 1981; Rollefson 2000; Stordeur and Khawam 2007; Goring-Morris and Horwitz 2007; Akkermans 2008; Croucher 2012; Haddow and Knüsel 2017; Tsuneki *et al.* 2022]. The study of the burials helps us understand and estimate funerary practices and compare these results with those for other sites to understand the prevalent regional rituals and

compare them with neighboring regions. Recently, the eastern wing of the Fertile Crescent has become a core area for investigating the Neolithic transition. In Iraqi Kurdistan, excavation of the Charmo site by Braidwood in the 1940s–1950s long dominated the investigation of early farming settlement in the Zagros region. However, recent investigations in a number of sites in the eastern and western ends of the Zagros such as in Iraqi Kurdistan, including at Bestansur, Shahrizor Plain and Charmo [Matthews *et al.* 2019; Tsuneki *et al.* 2019; Odaka *et al.* 2020], and west Iran at Sheikh-e Abad and Jani [Matthews *et al.* 2013], have yielded new insights into the Neolithization and formation of the early villages and architectures in this region.

A large number of burials were uncovered at a number of sites in the western and eastern ends of the Zagros. Excavations at Ganj Dareh in west Iran, revealed remains of 41 individuals from all levels [Smith *et al.* 1972; Smith 1974]. One adolescent burial was adorned with an elaborate necklace of 71 shell and stone beads [Smith 1974]. Genetic evidence from a few individuals revealed that the Ganj Dareh population was more closely connected to hunter-gatherers of the Caucasus region than Anatolian populations, suggesting autonomous expansion of agriculture in the Zagros [Riel-Salvatore *et al.* 2021]. Burials were also uncovered from Ali Kosh [13 burials; Sołtysiak and Darabi 2017] and Sheikh-e Abad [9 burials; Cole 2013]. The burials were in some instances associated with specific areas bearing ritual significance, containing animal skulls and horn cores. These specific evidence were uncovered from other sites in west Iran, such as Sheikh-e Abad, Ganj Dareh, and Ali Kosh [Darabi *et al.* 2017].

The study of Neolithic burial customs in the western Zagros is relatively inadequate. Burials uncovered from this region in the past and from ongoing excavations are limited. However, recent excavations in Bestansur have unearthed a large number of burials that shed light on the complexity of funerary practices in this region. Remains of 67 burials were uncovered from different interment contexts in Bestansur [Walsh 2020]. Many burials were uncovered in so-called Space 50 in building 5 and were accumulated in three phases. It is suggested that this building was used for ritual purposes and treatment of the dead [Richardson *et al.* 2020]. This deposit comprises intact and disarticulated human remains, including detached crania and skulls, demonstrating that the dead were subjected to multi-stage postmortem treatment [Walsh 2020].

The assemblage of burials in building 5 in Bestansur somehow resembles the special purpose and ritually significant buildings that were excavated widely during the Neolithic period in the western wing of the Fertile Crescent. These buildings served various functions, some related to successive ritual practices such as the “Charnel House” at Abu Hureyra [Moore *et al.* 2000], or specifically used for burials, and a large number of individuals were uncovered inside them, such as “House of the Dead” at Dja’de el-Mughara [Coqueugniot 1998]. Several non-residential structures were uncovered in Central and Southeastern Anatolia, such as the storage of human remains at PPNA-PPNB Çayönü “Skull Building” [Özdoğan 1999], the Early MPPNB “temple” of Nevalı Çori [Hauptmann 1993]. Burials were missing from non-domestic buildings, or they were buried after the building lost its original function, such as Tell Qaramel [Mazuroweski *et al.* 2012], Nevalı Çori [Hauptmann 1993], Beidha [Makarewicz and Finlayson 2018], and ‘Ain Ghazal [Rollefson 2000], but present in the domestic buildings. These new pieces of evidence will enrich our understanding of the characteristics, social structure, and common funerary practices of the Neolithic societies during the transition into the settled farming way of life in different regions of the Fertile Crescent.

6-2. Burials at Jarmo

The excavation of Jarmo in the late 1940s and early 1950s by Robert J. Braidwood of the University of Chicago revealed a small number of burials. Despite a sounding pit covering a large area of the site, skeletal remains were scarce. Therefore, it was difficult to understand life in the farming village of Charmo from the perspective of burials and funerary practices.

During Braidwood's excavations, burials from different age groups were uncovered, although the estimated age and sex are not precise (Table 3). In general, there was no clear evidence of grave pits, except for one case (J2–S3); there were no grave preparations or grave goods accompanying the dead; and the burials lacked uniformity. The human remains uncovered at the site were “hardly burials” [Braidwood *et al.* 1983: 427], and failed to provide sufficient information about life and death from the perspective of burials. Given the limited number of burials compared to the large number of test pits covering the surface of the mound, it is suggested that the Charimo people made their burials off-site [Braidwood *et al.* 1983].

Excavations in the Fertile Crescent have so far revealed no off-site cemetery, either in the Early Neolithic period or in the transitional period between the Pre-Pottery Neolithic B (PPNB) and Pottery Neolithic (PN) periods; rather, most of the burials were at the site. Crowded cemeteries located adjacent to the residential area were discovered in the Northern Levant at Tell el-Kerkh and Tell Sabi Abyad [Tsuneki *et al.* 2022; Akkermans 2008]. Though no off-site cemetery was uncovered in the Pottery/ Late Neolithic period, we pondered where the Charimo people buried their dead. Thus, we decided to carry out test excavations at the far edges of the mound, and we started with JW1 square.

Table 3 Excavated burials at Jarmo between 1948 and 1955 [Braidwood *et al.* 1983]

Square	Year	Skeleton no.	Layer/Skeleton location	Age	Sex	Burial type	Position	Body axis direction	Face direction	Remarks
J-I	1948	S1	In cleaning the upper most meter of deposit	Infant			Flexed positions		Facing opposite directions	
		S2								
		S3	Lying upon the third floor in one corner of a portion of <i>tauf</i> walling	Adult?	Neither the sex nor the age (beyond the fact that the individuals were adults) could be ascertained.					Accidental death
		S4								
		S5								
		S6								
J-II	1950	S1	In cleaning the first floor of J-II	Recent skeleton						
		S2	Second floor of J-II	Young adult						Partial and fragmented remains
		S3								Fragments of a right arm, some ribs and a few bits of skull and jaw and partly overlying J2-S4
		S4		Adult	Male		Prone		West	
		S5	In clearing of the second floor in J-II	Teen	Female		Supine flexed			
M20	1955		0.75 m in depth, near one face of the two-meter square M20	Adult						

6-3. JW1 square

JW1 is a 2 × 2 meters square located at the westernmost side of the site along the N2 60-meter line near the end of the slope overlooking the valley of an ancient riverbed. No excavations or survey were carried out in this part of the site. The purpose of excavation at this square is to:

- ① Reveal the distribution of the archaeological features of this part of the mound.
- ② Verify Braidwood's suggestion of the existence of an off-mound cemetery.

In the 2018 and 2019 seasons, geophysical prospecting (GPR and magnetometric surveys) was undertaken on the southwestern slope of the mound (Fig. 10-1). The results indicate that the Neolithic village extended into the southern slope of the mound (Tsuneki *et al.* 2019). In 2019, another magnetometric survey was undertaken on the lower slope of the mound. The survey

results show that there are no magnetic anomalies except for very subtle anomalies caused by the geographical slope. This demonstrates that there are no archaeological features directly beneath the surface such as that identified at the upper slope around W trench [Tatsumi's field report 2019].

JW1 was set up about 25 meters to the west of the 2019 magnetometric survey area. There appear to be fewer archaeological features on the west slope than at the top of the mound, which could be a place for burials adjacent to the Neolithic village (Fig. 10-1). We dug approximately 0.8 m below the surface; however, no remains or objects of any kind were uncovered (Fig. 40). Therefore, excavation was suspended in this square and in this part of the site, and the excavation pit was filled in. We then wondered whether the Charmo people really buried their dead that far away, or even off the mound. The ancient natural landscape in the Chamchamal region could help reveal the answer. Charmo, like other sites in this region, is situated on the top of a hill surrounded by steep slopes formed over thousands of years from intensive erosion by a river. As mentioned above, Watanabe indicated that the relative height from the riverbed to the hilltop was lower 9,000 years ago, and water sources should have been more accessible at that time. Therefore, if the settlement of Charmo was surrounded by rivers, subsidiary rivers, and streams, it would mean that the mound was surrounded by natural terrains that would have made it difficult to transfer a corpse from one site to another, not to mention the difficulty in transferring a corpse off-site during the rainy seasons, when the level of rivers and streams is high. Therefore, it seems that the dead were buried in the village, as commonly known in the Neolithic era, between and beneath the floors of buildings or adjacent to the village.

Meanwhile, excavations were continued in two different parts of the site in JT and J-II central squares, and fragments of human remains have been excavated: one or two in JT and two in J-II central.



Fig. 40 Square JW1.

6-4. Burials at Charmo

SK1

This find comprises fragmented human bones belonging to a young individual discovered at a depth of approximately 3 meters in layer 5 at JT square (Fig. 41). Primary analyses of the bones in situ indicate that they might belong to an infant. This individual is represented partially by a fragment of skull, a few long bones and ribs (Fig. 42). The human bones are dispersed over a space covering about 1.5 meters long, and they do not form a skeleton in its normal anatomical position. The human remains were mixed with animal bones and small stones. Near this accumulation at the corner of the excavation square, a *tannor* like-structure of compact orange-colored soil was discovered. At the same level to the northeast of SK1, animal bones including a large animal



Fig. 41 An overview of the SK1 deposit.



Fig. 42 SK1 skull and other bone fragments.

horn were found (Fig. 43). Near the horn, other fragments of human bones, probably of a skull that might have belonged to an infant, were discovered (Fig. 44). There is no clear evidence of a grave pit or grave preparation, so it is barely a grave. The discovery of the *tannor* and the human-animal bones in this area may indicate human activities bearing symbolic or ritual significance. Further investigation will be conducted in this area in the following excavation season.

SK2

This is a fragment of a skull discovered in layer 5 in the western wall of J-II central square (Fig. 45). Initially, a portion of the skull was visible in the wall section, and other parts were revealed after removing the upper layers of the wall. It was a fragmented skull that might have belonged to an infant. The skull fragments were solo, and no other skeletal elements were uncovered in situ. The skull was discovered in a thick charred layer of soil that extended over a wide area and continued out of the excavation area. However, the skull fragments show no traces of fire, which indicates that it was not initially buried in this location. Like SK1, there is no clear evidence of a grave pit or grave preparation.

SK3

This is another fragment of a skull discovered on the floor of J-II central pit to the north of a structure building (Str. 10). The skull fragment is small and probably belonged to an infant. There is no clear evidence for a grave pit, and it is difficult to determine how this fragment ended up at

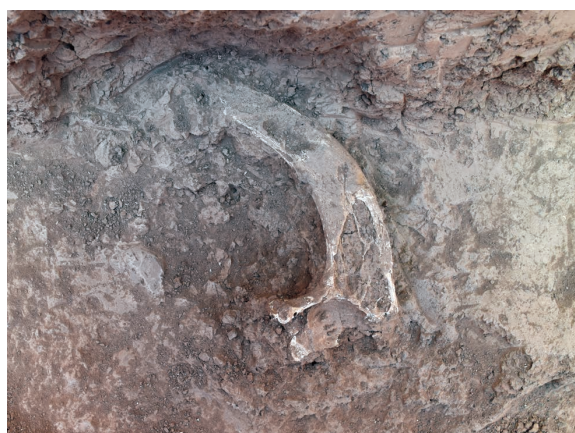


Fig. 43 Animal horn.



Fig. 44 Fragment of a skull of a probable infant near the animal horn.

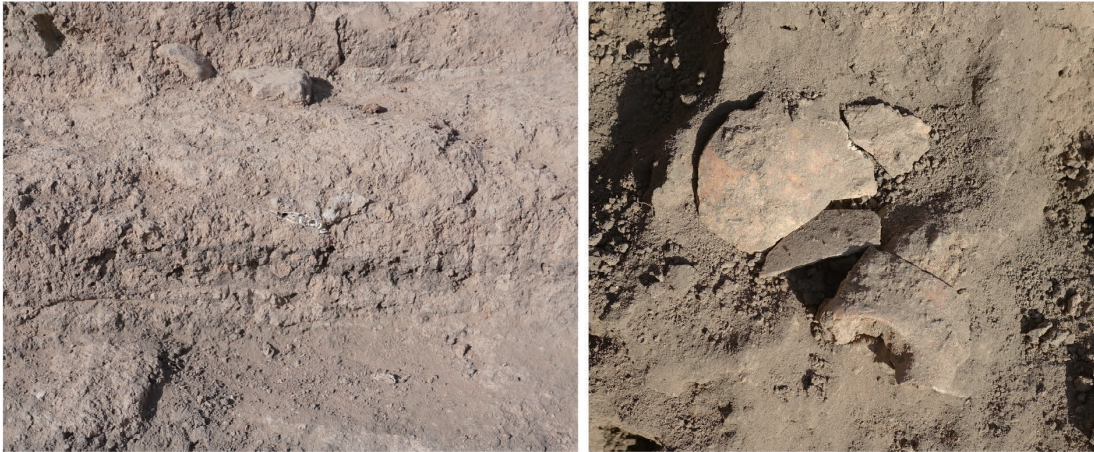


Fig. 45 Fragment of an infant skull from the west wall of J-II Central.

this location and whether it is associated with the structured building.

(Sari Jammo)

7. Conclusion

After a two-season hiatus due to the COVID-19 pandemic, we resumed our investigations at Charmo this season. Through this investigation, we aimed to determine the final date of existence of the Neolithic village at Charmo and to shed some light on the reality of its village life. We slightly expanded the excavation area, which had been limited to a very small trial soundings in former seasons.

For the first objective, i.e., determining the final date of the Neolithic village, a new JT square was established at the highest elevation of the Charmo site. Hence, it is likely that the oldest Pottery Neolithic cultural deposits in Zagros, even older than the Proto-Hassuna period, were the terminal stage of the Neolithic Charmo village. The ^{14}C -dating of the charcoal samples collected this season is underway; however, the dating of most of the samples collected from the J-II south trench, east of JT square excavated in 2019, indicates the beginning of the 7th millennium BC, making it extremely probable that the Neolithic village at Charmo came to an end in the early 7th millennium BC.

Regarding the second objective, i.e., the elucidation of the specific living conditions in Charmo, the excavations in J-II central square yielded several fruitful discoveries. A cache of tools and materials for manufacturing chipped stones and stone vessels, a set of beautiful marble bowl and spoon, and a square planned pisé building with several floors, which were covered with a mat made of woven plant fibers, were discovered. In the building, a small clay platform was placed on the lower floor, surrounded by three broken animal figurines. These findings suggest that ritual practices were frequently performed during everyday life. To understand the realities of Charmo's people, careful excavation will be necessary to recover a more concrete context.

The topography and environment around the Neolithic Charmo village must have been quite different from that of today, which we have been trying to reconstruct. Nobuya Watanabe used the SfM to make 3D measurements of Charmo in 2019 and 2022 to determine the topographic changes over these three years due to erosion. In addition, he surveyed the off-sites around Charmo to determine the distribution of lithics, potsherds, and other artifacts. Based on these data, he reconstructed a preliminary paleo-environment around the Neolithic Charmo village. His reconstruction plan shows a very gently sloping topography with very little erosion around Cham Gawra, which will be very useful data for us to reconstruct the livelihood and social life of the

Charmo people.

Reconstructing the paleo-landscape around the Charmo site, Ryo Amma collected samples for the Terrestrial Cosmogenic Nuclides (TCN) dating on the geomorphological surface around the site. His dating research is currently underway and will soon produce a paleo-environmental reconstruction map of Charmo. In addition, Ryo Amma also conducted chemical composition analyses of 508 obsidian lithic artifacts excavated from JT and J-II central squares, using a portable X-ray fluorescence spectrometer (pXRF) and summarized the characteristics of each layer. Reliable Al, Si, P, K, Ca, Ti, Mn, Fe, Cu, Zn, Rb, Sr, Y, Zr, Pb, and Th concentrations of each element were used in the analysis and it was determined that the obsidian group could be divided into three compositional groups, except for one sample. These were compared to the previous studies. He concluded that Group 1 was Bingöl B, Group II-1 was Nemrut Dağ, and Group II-2 was Bingöl A obsidian. Looking at the usage frequency of these obsidian groups by excavation layers, Group II-1 obsidian was used in the upper Layers 1 to 3, while Group I and Group II-2 obsidian were predominant in the lower Layers 5 and 6. The change of major obsidian resources occurred in Layer 4. Since Layer 4 corresponded to the transition period from PPN to PN, it is highly suggestive that the obsidian origin was changing during this transitional period. Whether similar changes are present in other artifacts is worthy of further studies.

A study of the Charmo villagers must be made from excavated human bones. However, we have not yet encountered good-condition burials at Charmo. Sari Jammo tried to discover the burial field outside the village and made a trial trench at JW 1 square. Unfortunately, he did not find any cultural deposits, including burials. Instead, one or two child burials were found in JT square and two in J-II central square. The condition of these human bones was poor and no definite burial posture or other information was known. At present, it is believed that adults, semi-adults, and juveniles were mainly buried outside the village, and infants and small juveniles were buried near their homes. However, future research may uncover adult burials within the village.

This season's work at Charmo has advanced our understanding of the Charmo Neolithic society. We hope to continue these efforts to further our understanding of the Charmo site, which is of great scholarly and historical importance, and further the study of Neolithization in the eastern wing of the Fertile Crescent.

(Akira Tsuneki and Saber Ahmed Saber)

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**BRONZE AGE HORN-SHAPED CONTAINERS AND COSMETICS:
A NEW IDENTIFICATION FOR A CONICAL STONE OBJECT EXCAVATED
AT PARKHAI-II, SUMBAR VALLEY, SOUTH-WEST TURKMENISTAN**

St John SIMPSON*

This paper re-examines an object found in the 3rd millennium BC cemetery of Parkhai II in the Sumbar valley of south-west Turkmenistan (Fig. 1). This site is one of several near the modern village of Kara-Kala in the Kopet Dagh region, where the Sumbar river rises before flowing to join the Atrek river and draining west into the Caspian, like the Gorgan river to the south (Figs 2–3).

The cemetery of Parkhai-II was discovered in 1977 and excavated up until 1991 by the Sumbar Archaeological Expedition of the Institute of Archaeology (Russian Academy of Sciences) in Leningrad, and directed by the late I.N. Khlopin (1930–1994). The site consists of a natural hill which had been used as an ancient cemetery, with 292 eneolithic burials covering an area of over 4500 sq m, and a small number of later burials added in the early medieval period (Fig. 4). The associated settlement was discovered nearby in 1983 when the surrounding area was bulldozed to make a vineyard, and brief excavations carried out the following year proved it to cover an area of some six hectares and with four metres of accumulated stratigraphy [Khlopin 2002, 10]. In the case of the cemetery, each of the eneolithic tombs had been used repeatedly for successive burials until they became mini-catacombs, presumably restricted to use for family members, with the earlier disarticulated remains carefully moved and re-arranged with subsequent interments. Pottery was the commonest type of grave-good but there were also beads, copper studs found in the mouths, and short pins with double spiral or wing-like heads. Whereas the pottery belongs to a local tradition, the pins have close parallels from further afield, including Tepe Hissar in north-east Iran, and the excavator regularly emphasised that the position and orientation of this micro-region of the Kopet Dagh meant it was culturally closer to Iran than to Central Asia [Khlopin 1997; 2002].

In one case – Grave 19 – an apparently unique object was discovered, which is the subject of this brief paper. It is a hollow truncated cone, described as alabaster, although it is more likely

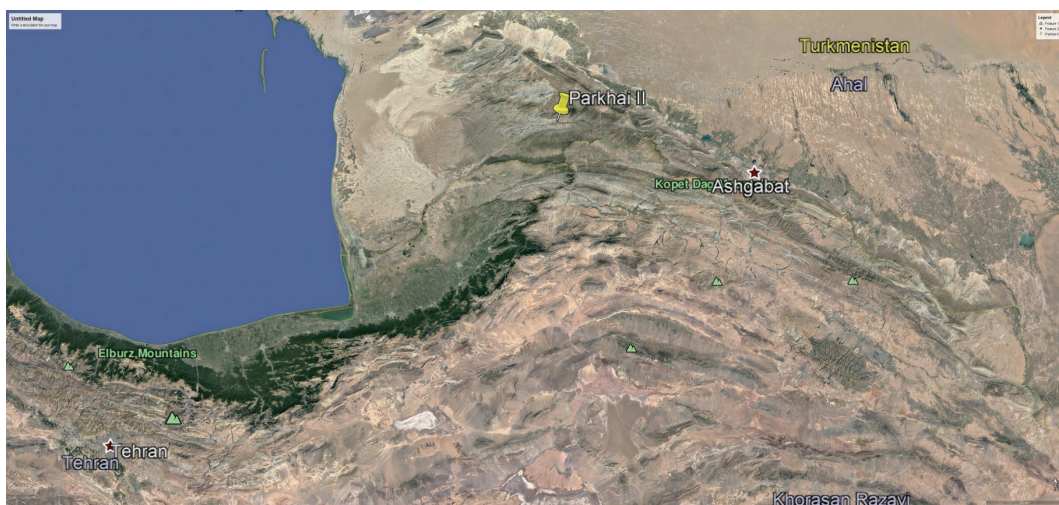


Figure 1. Location of Parkhai-II (based on Google Earth)

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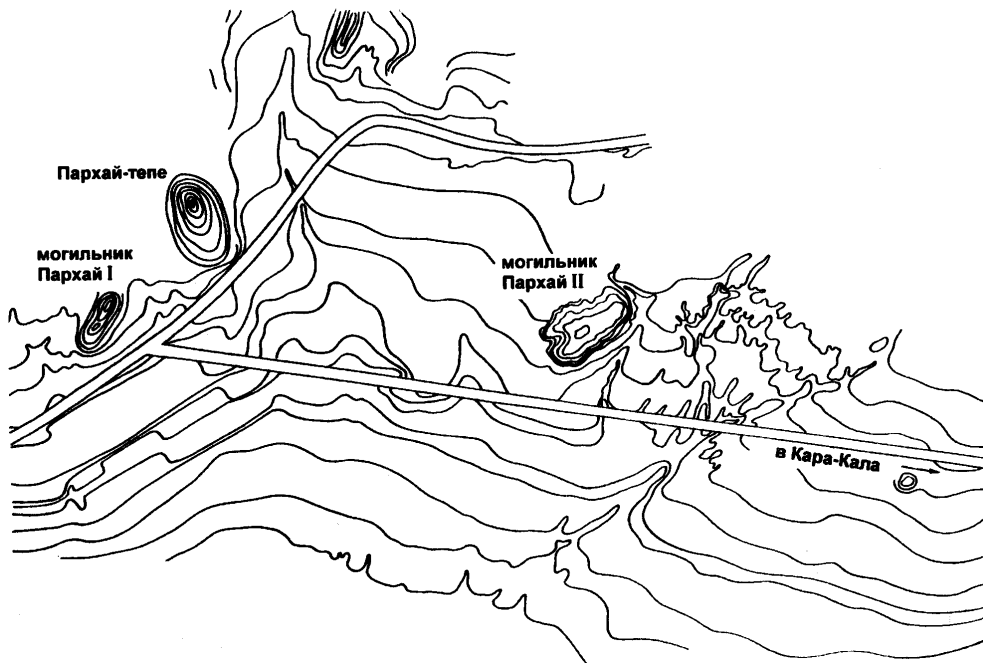


Figure 2. General plan of the site (after Khlopin 1997, 6, fig. 2)



Figure 3. Satellite view of Parkhai-II (based on Google Earth)

gypsum or calcite, and measuring 70 mm high and 32 mm across. It was found near the head of the latest adult to be placed in the tomb, the other grave-goods consisting of a pointed copper pin (or applicator as it is bent and rounded at one end), copper ring, beads, copper studs and pottery (Figs 5–6). Its function was not described in the report [Khlopin 1997, 69–70, 162, pl. 68.2], but its significance has been re-analysed by the author in a paper submitted in honour of the excavator and published in Russian [Simpson 2020], expanded here and published for the first time in English.

This object belongs to a category which, like the pins, has distant connections. Similar objects were excavated at Mundigak in Afghanistan (Fig. 7), where they were interpreted as the handles used to stabilise and hold vertical bow drills used to make beads, while a string wound around the shaft gave the necessary rotation to perforate the beads held securely in wooden tablets [Casal 1961, vol. I, 234, 236, vol. II, figs 134: 25, 135: 11, 11b] (Fig. 8). This interpretation was followed for examples excavated at Shahr-i Sokhta, where some of the wooden bead-making tablets were found, albeit not in association [Tosi 1969, 373, figs 41a–d, r–t, 237, 254–256]. Others have

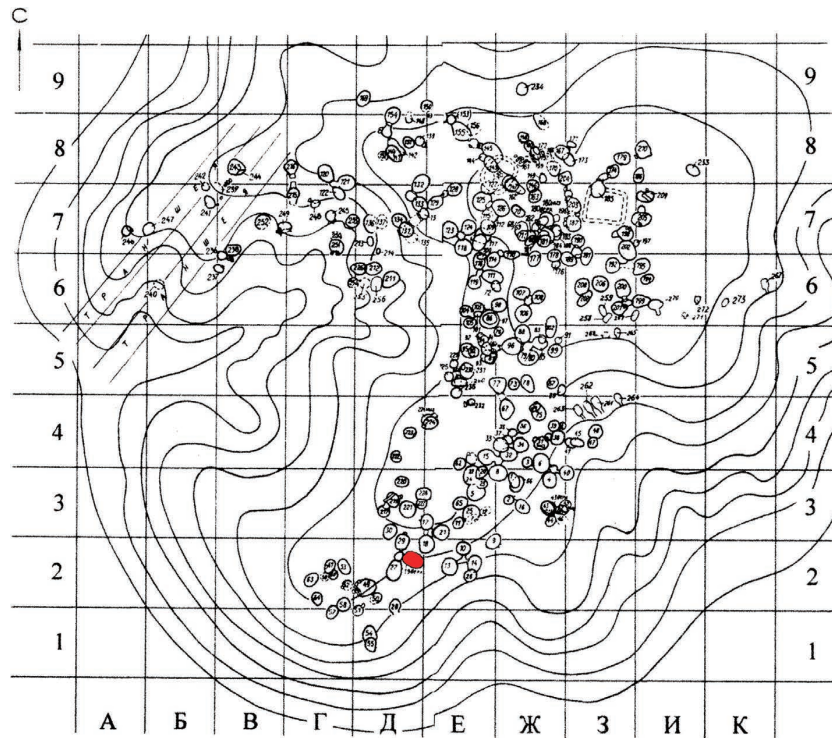


Figure 4. Plan of the eneolithic cemetery of Parkhai-II, marking the position of Grave 19 (after Khlopin 1997, 8–9, figs 3–4)

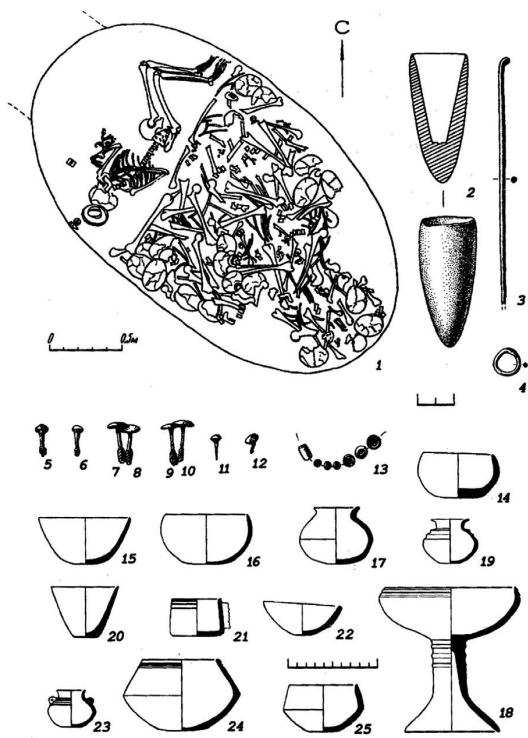


Табл. 68. Камера 19-низ: 1 — план погребения; 2 — алебастровый сосудик; 3-12 — медные изделия; 13 — бусы; 14-25 — сосуды.

Pl. 68. Lower level of Grave 19: 1 — plan of Grave; 2 — alabaster vessel; 3-12 — copper objects; 13 — beads; 14-25 — vessels.

Figure 5. Plan of Grave 19 with its finds (after Khlopin 1997, pl. 68)

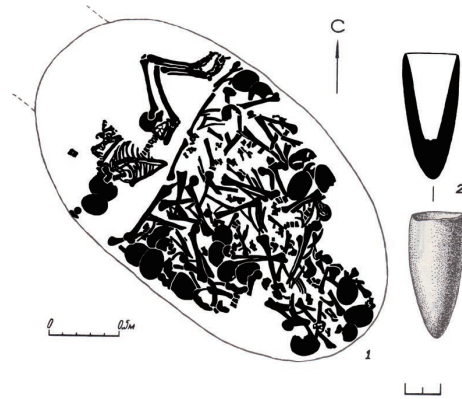


Figure 6. Plan of Grave 19 and the cosmetic container (after Khlopin 1997, pl. 68)

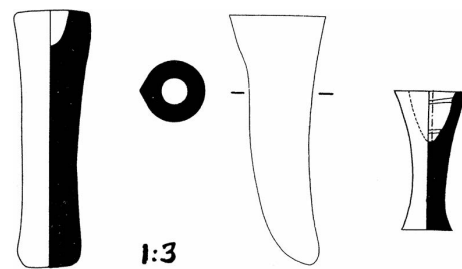


Figure 7. Horn-shaped cosmetic containers from Mundigak (after Casal 1961, vol. II, fig. 135)

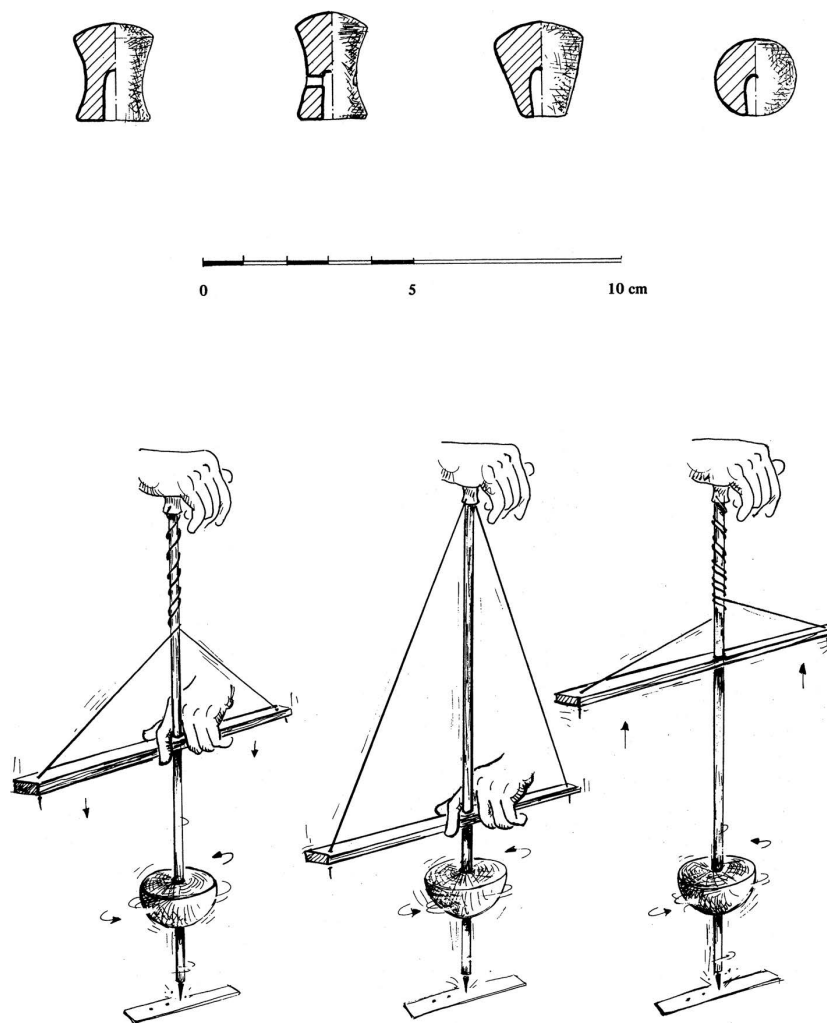


Figure 8. Objects and reconstruction drawings showing drilling (after Pottier 1984, fig. 17)

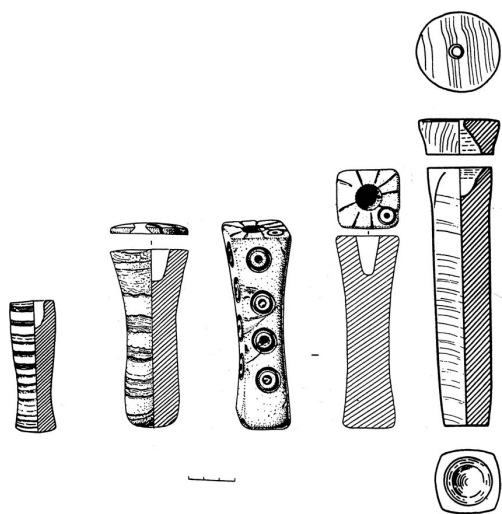


Figure 9. Cosmetic containers from Altyn-depe (after Kircho 1992, fig. 20.1)

been found at Farkhor and Kanturtut-2 in southern Tajikistan [Vinogradova and Kutimov 2018, 113, 122, figs 5.5, 15–16], Altyn depe [Masson 1988, pl. XLI; Kircho 1992, fig. 20.1], Takhirbai 3 [Sarianidi 1990, pl. XXVII.13 = Trench 11] and Gonur depe and Togolok-21, where the excavator described them as phallic symbols [Sarianidi 1990, pls LXXX, LXXXII; 2006: 278, fig. 126]. They are sometimes found in graves, such as burials 728 and 884 in levels 4 and 9 in excavation area 5 at Altyn depe, but others were found in courtyard or other contexts in the same area [Masson 1988] (Fig. 9). At Shahr-i Sokhta they were found in both male and female graves [Sajjadi 2003, 81–85, fig. 40, table 8] (Fig. 10). They have also been reported from looted cemeteries in the Jiroft region of the Halil Rud [Madjidzadeh 2003, 146, 205]. They may be related to a series of copper versions

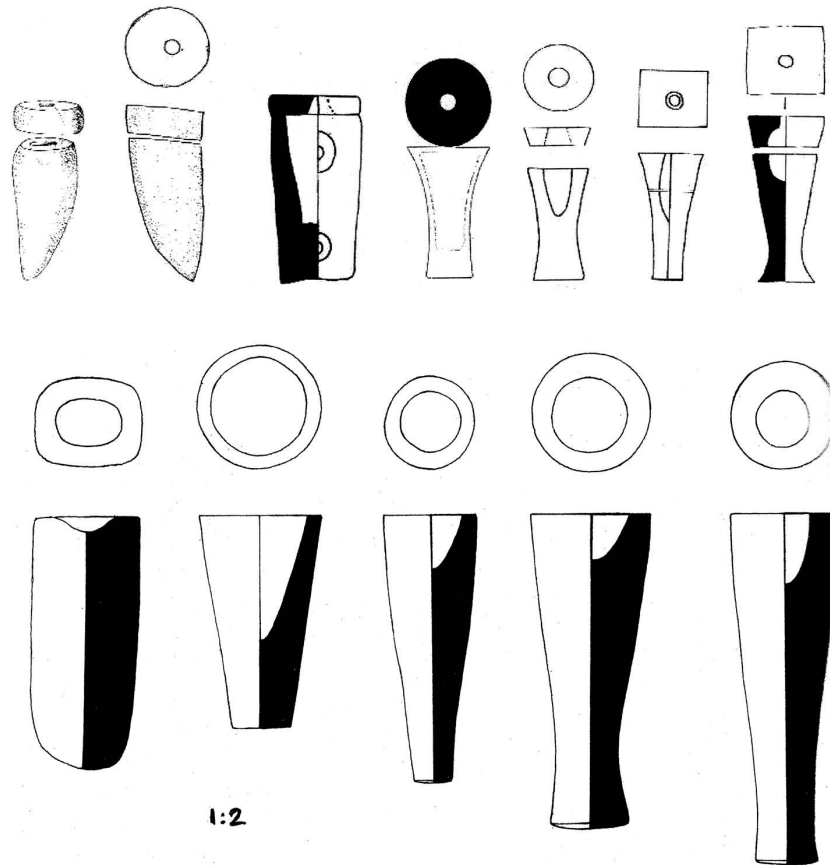


Figure 10. Cosmetic containers from Shah-I Sokhta (after Sajjadi 2003, fig. 40)

excavated at Tepe Hissar, where they were described as ‘odd, thick stemmed ‘nails’ with broad concave heads’ [Schmidt 1933, 377, pl. CIVa]. The discovery of yet another at the 5th millennium BC Iranian site of Tepe Zagheh, and which still contained dark residue in the top, implies that this type has a long history [Gnoli *et al.* 2001, 26, cat. 33].

Their function has led to different hypotheses. Pottier reports seeing four on sale in the Kabul bazaar (Fig. 11), and how all contained a greasy black residue [Pottier 1984, 38–39, 98, fig. 37, pl. XXXI, nos 261–64]. Two were acquired by the Louvre, and the contents described as a fine black powder [Amiet 1977, 99–101, fig. 9]. Similar remains were noted inside examples excavated at Mundigak and Shahr-i Sokhta, and scientific analysis indicated this to be lead-based [Pottier 1984, 39]. However, despite this, they have usually been interpreted as candle-holders, following another suggestion by V.I. Sarianidi who demonstrated how the perforated lids might have held vertical wicks [Sarianidi 1986, pl. 49] (Fig. 12). Moreover, others report that some of the examples excavated at Shahr-i Sokhta even contained ‘the wick ... inside the cavity’, therefore speculated on the role of fire and light in the beliefs of early Iranian populations, and described them as ‘carved in marble, have a cylindrical tapering form with a small cavity

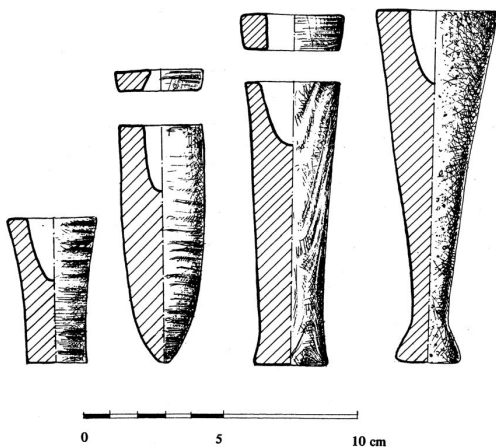


Figure 11. Cosmetic containers from the Afghan art market (after Pottier 1984, fig. 37)



Figure 12. Cosmetic containers with lids interpreted as lamps (after Sarianidi 1986, pl. 49)

for containing oil closed by a perforated lid' (Jarrige and Hassan 1989, 160). However, Franke observed that it 'can be argued, however, that without support they topple easily and that no traces of use and wear are visible on the rim or body' (Franke 2008, 35) (Fig. 13), a feature also true of others seized from the antiquities market and repatriated to the National Museum of Afghanistan in Kabul (Figs 14–15).

These hypotheses can now be dismissed. These objects were simply another form of cosmetic flask used alongside more elaborate copper alloy and decorated chlorite containers found at sites in the same region; the dark residue represents make-up; and the aperture in the lid was to facilitate inserting an applicator. The same conclusion was made in a report on Shahr-i Sokhta where the excavator described them



Figure 13. Cosmetic containers from Herat (after Franke 2008, fig. 65)



Figure 14. Cosmetic containers from Afghanistan, seized in the UK and repatriated to Afghanistan (HMRC 98.1-6)

as ‘flagons’, but concluded that ‘they are too small’ to have served as lamps and instead ‘they certainly served as containers for cosmetic substances’ [Sajjadi 2003, 81]. In short, a wide variety of cast copper, plain calcite and decorated chlorite cosmetic flasks were used across eastern Iran, south-west Central Asia and Afghanistan during the late 3rd and early 2nd millennia BC. Their size, capacity and style vary. Some are plain, others are decorated. Some have close-fitting caps and the aperture in these lids must have been to facilitate inserting an applicator. Those that did not must have had a cap of some sort, otherwise the oils in the pigment would have dried and contracted – like shoe polish left with the lid open – and so those were probably made of horn or contrasting wood which have not survived.

What does this all mean? It is important to remember that people, whether past or present, are essentially the same, regardless of nationality, language or culture, and share the same basic emotions and needs. The use of eye-liner by men and women alike in Central Asia and Near East goes back to the 3rd millennium BC, and cosmetics were also widely used from this period onwards [Simpson 2021]. Yet this is the only evidence for either practice at Parkhai-II where the range of grave-goods was otherwise quite restricted. Was this person, buried near the edge of the cemetery, therefore an outsider? Was he or she someone who engaged directly with distant communities and acquired this through these contacts? Were the inhabitants simply very conservative in what they placed in the grave? Or were objects such as this more commonly made of horn, as the shape suggests, and therefore do not survive?

With these questions in mind, the following modern ethnographic analogy of a horn cosmetic container and applicator from Morocco raises yet another as it demonstrates that not all applicators have swollen ends (Fig. 16a–b). Were this modern analogy found without its container, it would



Figure 15. Cosmetic containers from Afghanistan, seized in the UK and repatriated to Afghanistan (HMRC 150.1-2)



Figure 16. Contemporary horn cosmetic container and applicator from Morocco (private collection)

undoubtedly have been identified as a pin. Its short length recalls metal examples found near the heads of many other skeletons at Parkai-II [e.g., Khlopin 2002, 161; cf. Alyokshin 2020]: were some of these therefore also applicators used with horn containers which did not survive? Rather than being a unique form of cosmetic container, that from Grave 19 may simply be unusual as it was carved from stone, thus survived, whereas those made of horn did not. As ever, our views of the material culture of the past is heavily prejudiced on the basis of what is preserved, and we should be attentive to the clues offered by the shapes and types of objects which are more typical of organic materials [Simpson 2022].

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**THE LOCATION OF THE ANCIENT CITY OF AKKADE:
REVIEW OF PAST THEORIES AND IDENTIFICATION OF ISSUES FOR
FORMULATING A SPECIFIC METHODOLOGY FOR SEARCHING AKKADE**

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Abstract

Around 2300 BCE, the Dynasty of Akkad founded by King Sargon established its hegemony over ancient Mesopotamia and the city of Akkade was founded as its capital. The precise whereabouts of Akkade have been sought by many scholars for over 140 years. Despite these efforts, it has still not been found. In the very early days of Assyriology, at the end of the 19th century, a tentative theory was put forward that for the first time proposed equated the two cities of Akkade and Sippar-ša-Anunītu. In association with this theory Akkade was identified with the site of Tell ed-Dēr. However, another tentative theory was put forward, that Akkade was simply another name for Babylon. From this view, Akkade was identified with Ishan Mizyad. However, various pieces of counter-evidence have emerged that undercut these proposals. Using written sources containing a range of topographical information on Akkade, it was suggested that Akkade may have had a close geographical connection with the Tigris. Three specific regions have been proposed for the location of the ancient city of Akkade, namely, the confluence of the Tigris with the Diyala and the Adheim and the region near the modern town of Samarra. However, no suitable candidate sites for the ancient site of Akkade has been found in these regions. This regrettable outcome may have been caused by the lack of proper and effective use of the topographical information contained in written sources that indicate the regional location of Akkade. This paper proposes a specialized methodology for identifying the ancient site of the ancient city of Akkade.

I. Introduction

From approximately 2300 BCE, the Dynasty of Akkad, founded by King Sargon, had hegemony over ancient Mesopotamia. Arguably it was history's first empire, and its capital, founded by Sargon was the ancient city of Akkade according to the Sumerian King List. This list was probably composed during the following Ur III Dynasty period and thus is the source that is closest in time to the founding. The precise whereabouts of Akkade have been sought by scholars for over 140 years. Various locations have been presented as candidates, several have been definitively refuted, and others have been judged unlikely or to be supported by inconclusive evidence. As a result, Akkade's location has still not been identified, despite the efforts of many scholars. In this article, over 140 years of previous studies on the location of Akkade will be investigated, and then we will attempt to clarify with which specific regions and ancient sites, locations of the ancient city of Akkade have been deduced by previous scholars. We will also identify the nature of various written evidence that scholars used to identify the location of Akkade. We will analyze all relevant past theories one by one to identify problems in them that have led to their failure to identify the location of Akkade to this date. From this work, a new specific methodology for identifying the location of Akkade will be formulated.

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II. Identification of Akkade with Sippar-ša-Anunītu or Tell ed-Dēr¹⁾

During the very early days of Assyriology, M. J. Ménant [1875, 96; 1883, 71–72] first proposed the identification of Akkade with Sippar-ša-Anunītu and was followed by F. Delitzsch [1881, 209–212] and F. Hommel [1926, 400–410]. One factor above all seems to have led them to propose this hypothesis, namely, the presence of the Eulmaš temple in Sippar-ša-Anunītu and the description of such a temple in Akkade. Anunītu (earlier Annunītum) was a Babylonian goddess who shared several attributes with the goddess Inanna/Ištar [Ebeling 1932, 110–111; Black and Green 1992, 34–35]. These scholars deduced that the Eulmaš temple of Anunītu at Sippar-ša-Anunītu and the Eulmaš temple of Ištar at Akkade were identical. Sippar-ša-Anunītu was known from cuneiform sources that were already available at that time but cannot be specified today to be adjacent to Sippar-ša-Šamaš, leading to the conclusion that Akkade was another name for Sippar-ša-Anunītu and was to be found beside Sippar-ša-Šamaš.

However, as E. Unger [1932, 62] noted, in his inscriptions, Nabonidus refers separately to the Eulmaš temple of Ištar at Akkade and the Eulmaš temple of Anunītu at Sippar-ša-Anunītu [Langdon 1912, 246–247]. S. Langdon [1915–1916, 114, fn. 3] also noted that in his inscription, Nabonidus refers to Kassite King Šagaragti-Šuriaš's claim to have restored the Eulmaš temple of Anunītu at Sippar-ša-Anunītu, but his name is absent from the same inscription that gives Nabonidus's list of kings who sought the Eulmaš temple of Ištar at Akkade²⁾. If Sippar-ša-Anunītu and Akkade were identical, Šagaragti-Šuriaš should appear in this list³⁾. These two factors allow us to argue that the Eulmaš temple of Anunītu at Sippar-ša-Anunītu and the Eulmaš temple of Ištar at Akkade were separate entities.

As to why the same name was used for temples of the same goddess at the two locations of Akkade and Sippar-ša-Anunītu, Unger and Langdon indicated different views. Unger [1932, 62] thought that Sippar-ša-Anunītu was built on the ruins of the ancient city of Akkade, and Langdon [1915–1916, 114, fn. 3] thought that the Eulmaš temple of Anunītu at Sippar-ša-Anunītu was built on a new foundation in the vicinity of Sippar-ša-Šamaš (= Abu Habbah) by the Kassite King Šagaragti-Šuriaš, replacing the lost Eulmaš temple of Ištar at Akkade. Langdon noted that unspecified inscriptions indicate that Akkade was located near Sippar-ša-Šamaš (= Abu Habbah). Thus, he proposed that Tell ed-Dēr was Akkade because of its location beside Sippar-ša-Šamaš. Langdon [1924, 7–8, fn. 1] also observed that the impressive structures of Tell ed-Dēr and its advantageous geographical setting would suit a powerful ruler like Sargon as a place to plan a new capital.

The ancient name of Tell ed-Dēr has not yet been definitively determined, although this has been a subject of debate for a long time [Edzard 1970, 18–26; Harris 1975, 11, 14; Groneberg 1980, 208; Black 1987, 18, fn. 1]⁴⁾. Although this paper does not pursue this identification, a crucial fact must be mentioned here. Many excavations have been undertaken at Tell ed-Dēr, of which the first was conducted by H. Rassam and E. A. Wallis Budge [Pallis 1956, 363–364]. Later excavations undertaken by T. Baqir and M. A. Mustafa [1945, 37] produced materials from the Akkadian period, but none of these yielded any evidence that would lead us to assign Akkade's location to Tell

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- 1) The locations of the ancient sites that scholars have proposed as candidates for Akkade and well-known locations of other toponyms referred to in association with these are shown on the maps given as Figs. 1–4.
 - 2) For the content of the relevant royal inscription of Nabonidus, see [Langdon 1912, 242–252; Weiershäuser and Novotny 2020, Nabonidus 27].
 - 3) It is possible that Nabonidus was unaware of this or simply did not know of the inscription of Šagaragti-Šuriaš recording the restoration work at Akkade.
 - 4) J. A. Black identified Tell ed-Dēr with Sippar-Amnānum and disputes that it was Sippar-Yaḥrurum. He stated that this debate would be resolved with a final discussion to be published in a subsequent volume of the journal, *Akkadica*, but this publication has not been traced.

ed-Dēr. More recent efforts to excavate Tell ed-Dēr, such as by a Belgian team headed by L. de Meyer [with Gasche and Paepe, 1971; 1978; 1980; 1984] produced the same result, namely, that no evidence was unearthed that Sargon's capital was recovered from Tell ed-Dēr.

Thus, it has not been proven either that Akkade is Sippar-ša-Anunītu or that the latter was built over Akkade. Langdon's identification of Akkade with Tell ed-Dēr has also not been proven. Even if further excavation is undertaken in this location, it seems unlikely that any new indication of Akkade will be unearthed at Tell ed-Dēr⁵⁾.

III. Akkade is the Cover Name of Babylon

B. Landsberger [1965, 38–57] first proposed that Akkade (written ^{URU}*Ak-kad*) was Babylon, based partly on his study of the archives of Mār-Ištar, who was the ambassador of the Neo-Assyrian King Esarhaddon and partly on his study of the archives of Aqquḷānu, the Assyrian high-astrologer. He argued that the references to Akkade in these archives were to be understood as references to Babylon, stemming from the scribal fantasy of Mār-Ištar and the earlier one of Aqquḷānu. Therefore, he considered Akkade to be only an alternate or cover name for Babylon⁶⁾.

However, Landsberger gave no concrete reasoning or evidence to support his theory, and we cannot reconstruct its development. S. Parpola [1983, XXV, 263] concluded that Landsberger probably proposed his interpretation to account for the fact that several substitute kings were enthroned in Akkade instead of Babylon: Esarhaddon and other Neo-Assyrian kings held the kingship of Babylon, and there was a special rite that was occasioned by eclipses and that required the repetition of the enthronement of substitute kings in Nineveh for Assyria and in Babylon for Babylonia. Landsberger likely sensed a contradiction in the fact that Akkade was treated as the site of this ritual in the archives of Mār-Ištar and Aqquḷānu.

Parpola considered that the repetition of the enthronement of substitute kings was in reality performed in Akkade and that it was not caused by a scribal fantasy of Mār-Ištar and Aqquḷānu. He thought that Babylon had been abandoned from the time of the reign of Esarhaddon, so the repetition of the enthronement of substitute kings could not be performed there. Instead, the ancient imperial capital of the empire of Akkad was chosen as the site worthy for such rites. Additional pieces of evidence discredit Landsberger's equation of Akkade and Babylon. As Parpola [1970a, nos. 280–281; 1983, 263] indicated, Mār-Ištar frequently used the names of Akkade and Babylon together in his letters. Both names also occur together in other contemporaneous documents and in the inscriptions of Aššurbanipal. Furthermore, the name Babylon even appears side-by-side with

5) Although Akkade was not concretely identified with either Sippar-ša-Anunītu or Tell ed-Dēr, W. H. Lane [1923, 83–85] also presumed that Akkade was located near Sippar (= Abu Habbah). Pliny's *Natural History*, Book VI, ch. 30, records this about Mesopotamia; it mentions a very large city called Agranis present at the point where the river that the Assyrians called Narmalcha (= royal river), divides its waters. Lane assumed that Narmalcha is synonymous with the Nahr Malcha. It was known to him that the Nahr Malcha branched off at Hipparenum, which he equated with Sippar (= Abu Habbah), and then flowed eastward toward Seleucia on the Tigris. Accordingly, he assumed that Agranis would form the Greek rendering for the ancient city of Akkade. Thus, it was located at the same point as Hipparenum (= Sippar = Abu Habbah).

Furthermore, the Roman history of Ammianus Marcellinus, Book 24, ch. 2 records that the troops of the Emperor Julian advanced to the village of Macepraeta, where a branch of the river known as Nahamalca (= river of kings) passed by Ctesiphon. Thus, Lane thought that Macepraeta would refer to Sippar. He also argued that Macepraeta could be phonetically identifiable with both Sippar and Akkade, if both names are said together as [Ma]Sippar-Akkade. Thus, he accordingly located Akkade in the vicinity of Sippar (= Abu Habbah).

However, no other evidence supports these name-based theories. Lane also proposed Qadisiyeh as a potential site of Akkade. His alternative theory is discussed in the section V. 3.

6) J. A. Brinkman [1968, 145, fn. 874] also made cautious mention of Landsberger's theory, indicating that if his theory is correct, the Akkade referred to in two *kudurrus* of the Kassite period, BBSt. Nos. 3–4 may have been a synonym for Babylon [McEwan 1982, 12]. As noted below, later H. Weiss [1975, 434–453], partly agreeing with Landsberger's theory, developed his own conception of the location of Akkade.

that of Akkade in the letters AOAT 5/1, 280 and 281 of Mār-Ištar. Thus, it is unlikely that Akkade was considered a synonym for Babylon by Mār-Ištar and Aqqulānu.

In the Neo-Babylonian Chronicle 1, the Esarhaddon Chronicle, and the letter AOAT 5/1, 275 of Mār-Ištar, the city of Akkade was associated with the return of the Ištar of Akkade from Elam. Therefore, G. J. P. McEwan [1982, 12] and Parpola [1970a, no. 275; 1983, 262–263] argued that there would have been, obviously, no need for the writers of the Chronicles and Mār-Ištar to use an alias for Babylon in this case⁷⁾.

Furthermore, McEwan [1982, 12] and Parpola [1983, 263] indicated that a later building inscription of Nabonidus confirmed Esarhaddon's work of restoration on the Eulmaš temple in Akkade, but no temple named Eulmaš has been found in the numerous building inscriptions of Esarhaddon relating to Babylon⁸⁾.

There is evidence that the Ištar of Akkade was worshiped at Babylon in the Emašdari temple, but McEwan [1982, 15, fn. 55] asserted that this could not be taken to support the identification of Akkade as Babylon because it was not unusual for local deities to be worshiped both in the capital and in their own cult centers. This is confirmed by BRM 4, 25 (= SBH VII), which presents a schedule for the worship of various local deities in Babylon. Other texts show that Ištar of Akkade was worshiped in Aššur, Bīt-Bēlti, Bīt-Ḥabban, Mari, and Sippar [McEwan 1982, 15, fn. 56]. Therefore, this cultic connection is not an appropriate foundation for identifying Akkade with Babylon.

Parpola [1970a, no. 278; 1983, 268] advanced another reason for Landsberger's conclusion. In Mār-Ištar's letter, AOAT 5/2, 278, Akkade was mentioned in connection with two well-attested seats of astronomical schools, Borsippa and Nippur, which regularly sent astrological reports to the Sargonid kings. Both of these sites were commonly linked with third major astronomical school, that of Babylon, which is always listed first⁹⁾. Therefore, in this context, we should expect to see Babylon on this list, not Akkade. Parpola argued that this may have been the evidence that led Landsberger to create his theory. However, nothing in this passage suggests that astronomical observations were regularly taken in Akkade, and it may be, according to Parpola, that the city was simply mentioned here because it was where Mār-Ištar himself watched the eclipse. The letters of Mār-Ištar themselves make it clear that he did not spend all of his time in Akkade but was constantly on the move, supervising all of the reconstruction work being done in Babylonia during his time in office¹⁰⁾.

It is clear, therefore, that the references to the city of Akkade found in the archives of Mār-Ištar during the Esarhaddon's time and in the archives of Aqqulānu were to a place quite distinct from Babylon. At this time, furthermore, a city called Akkade really did exist and was separate from the Babylon of the Neo-Assyrian period.

IV. Akkade is Ishan Mizyad

Weiss [1975, 434–453] identified Akkade with Ishan Mizyad. This conclusion was based on three fundamental considerations. The first was his disagreement regarding the identification and location of Akkade with Sippar-ša-Anunītu or Tell ed-Dēr in the vicinity of Sippar-ša-Šamaš. He disagreed with this idea because he believed that the Akkadian capital could not have been located at the

7) For the Neo-Babylonian Chronicle 1 and the Esarhaddon Chronicle, see [Grayson 1975, 84, 126].

8) For the building inscription of Nabonidus, see [Langdon 1912, 246–249; George 1993, 155]. For the inscriptions of Esarhaddon, see [Leichty 2011].

9) With the exception of the report of AOAT 5/2, 278, reports were sent from Babylon, Borsippa, Cutha, Dilbat, and Uruk. Pliny and Strabo also referred to Babylon, Sippar, and Uruk as the seats of astrological schools. Observatories in Babylon, Nippur, Uruk, and Borsippa, were also mentioned, see [Parpola 1983, 268, fn. 481].

10) The archives of Mār-Ištar, see [Parpola 1970a, 218–253].

fringe of the Early Dynastic and Akkadian settlement area but must have been located in the heart of southern Mesopotamia.

The second consideration is related to Landsberger's theory of the Neo-Assyrian equation of Akkade with Babylon. He considered that Neo-Assyrian usage of the word Akkade could involve a type of symbolism, suggesting that the ruins of Akkade were near to Babylon. He seems to have believed that Akkade was no longer permanently occupied in the Neo-Assyrian and Neo-Babylonian periods. He adduced several records from the Neo-Assyrian and Neo-Babylonian excavations that implied that Akkade was abandoned during these periods. For example, the inscriptions of Nabonidus indicate that Kurigalzu, Esarhaddon, Aššurbanipal, and Nebuchadnezzar II performed intensive excavations at Akkade as part of their fruitless search for the *temmēnu* (= foundation document) of earlier kings regarding the Eulmaš temple. Nabonidus's inscriptions further tell that he eventually found the *temmēnu* in a pit that was made by a heavy rain following three years of excavations along the trenches of Nebuchadnezzar II¹¹). The Neo-Babylonian epigrapher-archaeologist Nabu-zer-lišir also left records of excavations at Akkade detailing the discovery of a royal inscription of Šar-kali-šarrī [Weiss 1975, 447, fn. 43]. These records make it obvious that those kings of the Kassite, Neo-Assyrian, and Neo-Babylonian periods shared feelings of awe for the kings of the Dynasty of Akkad. In addition, the records also indicate that Akkade was frequently excavated by the kings of the Kassite, Neo-Assyrian, and Neo-Babylonian periods. Therefore, examining these records in isolation might give the impression that Akkade was already abandoned and completely ruined at the periods in question and was located not far from the royal residence of these kings at Babylon. This may have led Weiss to conclude that the name Akkade was substituted for Babylon in these periods, in a type of figure of speech.

Finally, the third consideration of Weiss's theory was developed from examination of three further written sources: the Neo-Assyrian version of the Omen of Sargon, the Weidner Chronicle, and the Chronicle of Early Kings [Weiss 1975, 447–448]¹²). All of these mention Sargon's construction of the city of Babylon near Akkade. Weiss credited the historicity of these sources, perhaps due to their composition at a time when the location of Akkade was still well known, and reference to it had symbolic and suggestive associations for the Neo-Assyrian and Neo-Babylonian kings.

From the aforementioned three considerations of his theory, Weiss identified the ancient city of Akkade with a relatively large tell called Ishan Mizyad, located 15 km east-northeast of Babylon. However, his identification of Akkade with Ishan Mizyad cannot be supported for the following two reasons. The first reason is that, as referred to in the section III above, both the names Akkade and Babylon occur in the letters of Mār-Ištar, other contemporaneous documents, the inscriptions of Aššurbanipal, the Neo-Babylonian Chronicle 1, and the Esarhaddon Chronicle. Furthermore, in AOAT 5/1, 275 of Mār-Ištar, it is written that Esarhaddon caused Akkade to be inhabited again [Parpola 1970a, no. 275; Frame 1993, 44]. Therefore, at least from the reign of Esarhaddon onward, during the Neo-Assyrian and Neo-Babylonian periods, Akkade was not abandoned and ruined but was occupied. Thus, there would have been no need to adopt any symbolic or suggestive meaning for references to the city of Akkade standing for references to the city of Babylon in these periods.

The second reason that Weiss's identification is not supportable is that there is an obvious risk in crediting accounts of the Neo-Assyrian version of the Omen of Sargon, the Weidner Chronicle,

11) For the inscriptions of Nabonidus, see [Langdon 1912, 246–249; 1915–1916, 114, fn. 3; Goosens 1948, 149–159; Weiershäuser and Novotny 2020, Nabonidus 27]. For the meaning of the Akkadian word *temmēnu*, see [Gelb, Landsberger, and Oppenheim 2006, 337–339].

12) For the Neo-Assyrian version of the Omen of Sargon, see [King 1907, 28: 7–11], for the Weidner Chronicle, see [Grayson 1975, 149: 50–51; Glassner 2004, 266–267], and for the Chronicle of Early Kings, see [Grayson 1975, 153: 18–19; Glassner 2004, 268–271].

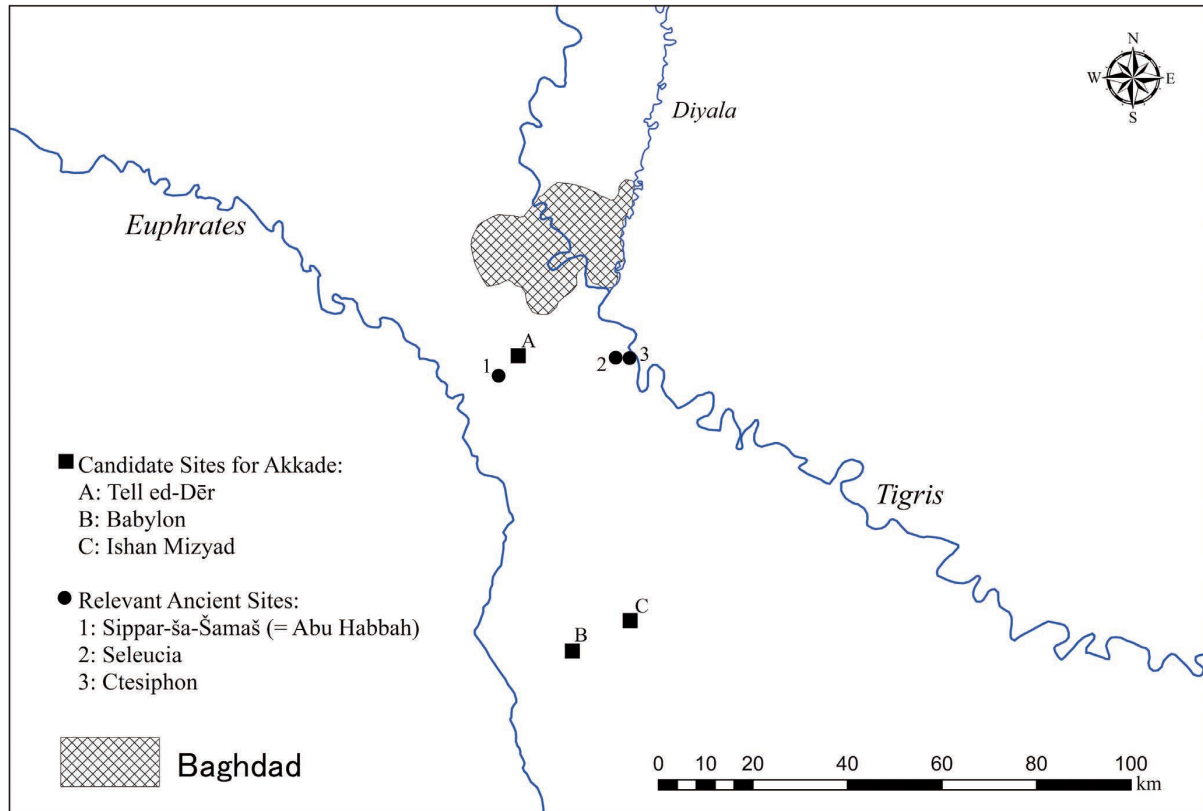


Fig. 1 – Locations of Candidate Sites for Akkade and Relevant Ancient Sites of Chs. II, III, and IV.

and the Chronicle of Early Kings regarding the construction of Babylon near Akkade. There is no evidence from the Sargonic period to indicate that Babylon was near Akkade. Therefore, later accounts alone cannot be treated as sufficiently historical to provide this location for Akkade. The Chronicle of Early Kings refers to the construction of a replica of Babylon near Akkade as sacrilege. From this, Parpola [1983, 516] argued that all three references to the construction of Babylon near Akkade ought to be understood in the same way.

According to B. R. Foster [1993, 172], the Iraqi excavations at Ishan Mizyad that were undertaken in the hope of identifying Akkade only unearthed a few modest remains and a few administrative tablets from the Ur III period. Furthermore, the epigraphic finds here did not include references to the toponym Akkade but instead to Bab-Ea. The Iraqi archaeologists decided that Ishan Mizyad could not be identified with Akkade¹³⁾.

V. Akkade along the Banks of the Tigris in the North of Southern Mesopotamia

V. 1. Akkade near the Confluence of the Tigris with the Diyala

McEwan [1982, 8–15] first argued that Akkade was located near the confluence of the Tigris with the Diyala. He based his analysis on four pieces of written evidence that contained topographical information on Akkade. The first was UET 8, 14, a list of *ensis* from either the Akkadian or Ur III periods, which indicated a close geographical relationship between Akkade and the Tigris. The second written evidence was V R 35, a clay barrel inscription by Cyrus the Great, King of the Achaemenid Persian Empire, enumerating toponyms located east of the Tigris, as seen from

13) For the excavation report, see [Rashid 1983, 183–214].

Babylon. The list includes Akkade. The third written evidence is 4 R 36, a list of toponyms considered to have been located along the Tigris in the Diyala region, among which is Akkade. The last evidence is the Sumerian Temple Hymns composed by Enheduanna, Sargon's daughter. Here, Akkade is registered with a group of toponyms that are considered to have been located near Sippar, along the course of the Tigris. From these four pieces of written evidence, McEwan concluded that Akkade was located in the region around the confluence of the Tigris with the Diyala.

Parpola [1983, 515–516] expressed a similar view. In a royal inscription of the Elamite King Šutruk-Nahhunte, EKI 28C I, six toponyms, including Akkade, are referred to as places where the spoils and tribute were taken. The locations of three of those toponyms, namely, Dūr-Kurigalzu, Sippar, and Ešnunna, are known to us. All three are found within 40 km from the confluence of the Tigris with the Diyala. Thus, Parpola assigned Akkade in the same region.

In addition to this evidence, C. Wall-Romana [1990, 205–245] found more written evidence containing topographical information on the location of Akkade and initiated more detailed study to identify the location of Akkade. Using all available pieces of written evidence from that time containing topographical information on Akkade, he deduced a list of eight possible locations of Akkade as listed below.

The first was based on topographical information contained in following three pieces of written evidence: the aforementioned list of *ensis*, UET 8, 14, the Curse of Akkade written either in the Ur III or Isin-Larsa periods, and a royal inscription of the King of Uruk, Utu-ḫegal, RIME 2, E2.13.6.4 [Wall-Romana 1990, 209–213, fig. 1]. This evidence shows a close geographical relationship between Akkade and the Tigris. Therefore, Wall-Romana concluded that Akkade was located somewhere on the banks of the Tigris.

Wall-Romana [1990, 213–216, fig. 2] proposed a second regional location of Akkade derived from the topographical information contained in the prologue to the Code of Ḫammurapi and two archives of Mār-Ištar, the ambassador of the Neo-Assyrian King Esarhaddon: AOAT 5, 279 (= SAA 10, 351) and 294 (= SAA 10, 361). From these, he tentatively placed Akkade somewhere on a line connecting from Ešnunna to Aššur along the Tigris. In the prologue to the Code of Ḫammurapi, the principal twenty-seven cities of the Old Babylonian period are enumerated, including Akkade. From the known locations of these cities, Akkade's regional location was deduced. AOAT 5, 279 (= SAA 10, 351) records that an itinerary took five days from Nineveh to Akkade. AOAT 294 (= SAA 10, 361) lists three post stations located on an itinerary route that linked Nineveh to Akkade. Thus, from the travel time and assumed locations of the three post stations, Wall-Roman tentatively located Akkade somewhere on a line linking Ešnunna to Aššur along the Tigris¹⁴.

The third region identified by Wall-Roman [1990, 216–217, fig. 3] was drawn from the aforementioned clay barrel inscription of Cyrus. Similar to McEwan, he located Akkade somewhere to the east of the Tigris when seen from Babylon.

The fourth location was to the north of Sippar-ša-Šamaš (= Abu Habbah) drawing on topographical information contained in the Sumerian Temple Hymns of Enheduanna, which, as discussed above, McEwan used to locate Akkade to the north of Sippar along the Tigris, and an unspecified piece of written evidence noted by Unger [1932, 62] in the early days of Assyriology [Wall-Romana 1990, 219, 227–228, fig. 4]. Like McEwan, Wall-Roman considered that Akkade could be placed to the north of Sippar, based on the account of the Sumerian Temple Hymns of Enheduanna. According to Unger, the latter piece of written evidence contained topographical information on a canal called Nār Akkade that separated the city of Sippar-ša-Šamaš from the city

14) L. Marti [2014, 207–209] attempted to deduce the location of Akkade only with topographical information contained in the Neo-Assyrian written sources. Marti found out that AOAT 5, 279 (= SAA 10, 351) is the only written source containing topographical information of Akkade. However, this archive only records that five days were necessary to travel from Nineveh to Akkade. Thus, Marti concluded that it was impossible to locate Akkade using this topographical information alone.

of Sippar-ša-Anunītu. It is known that a canal named Nār Sippar flowed from Sippar to the south. Accordingly, the same logic is applicable for Nār Akkade, flowing southward toward Sippar-ša-Šamaš from the north. Thus, Wall-Romana concluded that Akkade may be located somewhere north of Sippar-ša-Šamaš.

For the fifth regional location, Wall-Romana [1990, 218–221, fig. 5] used topographical information contained in three pieces of written evidence. The first is the aforementioned list of toponyms 4 R 36, which McEwan first drew attention to, as according to it, Akkade can be placed somewhere on the banks of the Tigris in the Diyala region. The second piece is played by the Sumerian Temple Hymns of Enḫeduanna again. The final piece is the aforementioned royal inscription of Šutruk-Naḫḫunte, EKI 28C I, which Parpola first drew attention to as Akkade can be placed together with Dūr-Kurigalzu, Sippar, and Ešnunna within 40 km from the confluence of the Tigris with the Diyala. Wall-Romana analyzed the positional relation of the order of toponyms registered in these three pieces of written evidence and concluded that the location of Akkade could be north of a line drawn between Sippar and Ešnunna.

The topographical information used by Wall-Romana [1990, 221–224, fig. 6] regarding the sixth regional location is contained in the *kudurru* of the Middle Babylonian period, MDP 2, 99–111, in which Akkade appears with a canal named Nār Šarri and two Kassite houses, called Bīt-Piri¹⁾ Amurru and Bīt-Tunamissaḫ. He analyzed the locations of the canal and two houses in relation to the other topographical information contained in three other *kudurrus*, BBSt. no. 4, MDP 6, 39–41, and BBSt. no. 5, and then assumed that Akkade could be placed in a region around the confluence of the Tigris with the Diyala.

The seventh regional location assigned by Wall-Romana [1990, 223–226, fig. 7] was taken from the aforementioned royal inscription of Šutruk-Naḫḫunte, EKI 28C I. The locations of three of the six toponyms are certain, and their order is as follows: Dūr-Kurigalzu (first), Sippar (second), and Ešnunna (sixth). Wall-Romana analyzed the locational relationship of these three toponyms and hypothesized that Šutruk-Naḫḫunte would have traveled among six toponyms in counterclockwise manner. Akkade is registered third, so he deduced that it was located in the region south of Dūr-Kurigalzu, east of Sippar, and west of Ešnunna.

The final, eighth, regional location deduced by Wall-Romana [1990, 228–230, fig. 8] was drawn from the topographical information contained in three pieces of written evidence: the aforementioned royal inscription of Šutruk-Naḫḫunte, EKI 28C I, a fragment of a list of cities, PBS 5, 157, and the aforementioned list of *ensis*, UET 8, 14. In these, Akkade appears with Akšak (= Upi). In EKI 28C I, Akšak (= Upi) appears fourth after Akkade (third). If Šutruk-Naḫḫunte really visited six toponyms in counterclockwise order as discussed above, Akšak (= Upi) can be placed east of Akkade and southwest of Ešnunna. In PBS 5, 157, Adab, Akšak (= Upi), and Akkade appear in this order. In UET 8, 14, Akšak (= Upi) appears before Akkade, and with the latter the Tigris is associated. Wall-Romana deduced that the order of toponyms in PBS 5, 157 would indicate their relative locations, running from south to north, indicating the possibility that Akšak's (= Upi) close locational relation with Akkade would also imply its close geographical relation relative to the Tigris. At that time, Akšak (= Upi) was considered to be identified with one of six ancient sites by R. McC. Adams [1965, 173–174]. Those sites all are located on the eastern bank of the ancient course of the Tigris, which Adams [1965, 152, 156–157, 160, fig. 3] reconstructed as lying to the east of the present course of the Tigris, running from the north of Baghdad as far as the diverting point of the Gharrāf Canal from the present course of the Tigris. These sites, located from north to south, are site nos. 414, 558, 568, 590, 685, and 851. Thus, Wall-Romana deduced that Akkade could be placed somewhere north of the southernmost location of site no. 851, along the ancient course of the Tigris.

Eventually, Wall-Romana [1990, 232–238, figs. 9–12] superimposed the aforementioned

eight regional locations of Akkade and confirmed that the region of their overlap is confined to an area just north of the confluence of the Tigris with the Diyala¹⁵). Using the sizes and dates of ancient sites lying in the confined regional location of Akkade, he reached the conclusion that Tell Mohammad (site no. 414) was the most plausible candidate site for the ancient city of Akkade.

Unfortunately, the identity of this ancient site has not yet been firmly established. Adams [1965, 152] observed that the Akkadian occupied area in Tell Mohammad was very small, less than 4 ha. This is obviously too small for the central city of the Dynasty of Akkad. Moreover, S. Smith [1946, 19–21] and B. Groneberg [1980, 54] earlier identified Tell Mohammad as Diniktu. Adams [1965, 152] argued that the remains of the Akkadian period were found on the remnants of its surface. The Iraqi State Antiquities Organization commenced excavations at the site in 1978, but no material from the Akkadian period was located. The earliest traces found at the site date to the Isin-Larsa period. Excavations thus revealed a substantial Old Babylonian town¹⁶). Clearly, these results do not harmonize with what is known of Akkade's later history [McEwan 1982, 8]. Some economic texts were discovered, but they have not been published. According to G. Frame [1993, 21–22, fn. 3], Iman Yamil Al-Ubaid studied a number of these texts for her unpublished M.A. thesis, but none mentioned Akkade, the Eulmaš temple of Akkade, or Diniktu. Wall-Romana's extensive study of the location of Akkade made a great deal of unknown pieces of written evidence on Akkade's location available for scholars and advanced the state of research on its location. However, due to the results of excavations in Tell Mohammad, we cannot support Wall-Romana's identification of it as the site of Akkade.

Following McEwan, Parpola, and Wall-Roman's theories on the location of Akkade, D. R. Frayne [2004, 103–116] proposed to locate it near the confluence of the Tigris with the Diyala. In particular, he identified Akkade with a specific ancient site named Tell Seraij (site no. 571)¹⁷). Concurring with Wall-Romana's localization of Akkade in the region of the confluence of the Tigris and the Diyala, he identified the locations of toponyms that were registered before a toponym of Entry 92 from the Early Dynastic List of Geographical Names, in the same region. Regarding the registered toponym of Entry 92, he tentatively restored to read a-ṛgada(?)¹.KI and located in the same region as well. Furthermore, he followed the suggestion of Kh. Al-Adami [1982, 122], identifying Dūr-Šarrukīn, which was registered on a Middle Babylonian *kudurru*, IM 90585 of the reign of Marduk-nādin-aḥḥē found in Tulūl Mujaili¹ (site no. 590), with Akkade. Al-Adami

15) Topographical information on the location of Akkade contained in the aforementioned written evidence was used by Wall-Romana to deduce eight possible regional locations of Akkade. In addition to these, he also drew attention to three other pieces of written evidence containing topographical information on the location of Akkade and attempted to deduce its regional locations using them [Wall-Romana 1990, 227–233]. The evidence was drawn from the Babylonian Chronicle 25, an inscription of the Etemenanki cylinder from the Neo-Babylonian King Nebuchadnezzar II, and an Old Akkadian tablet published in 1957 by I. J. Gelb. However, the topographical information contained in these pieces has very high circumstantiality. Therefore, Wall-Roman did not use them to support any of the eight locations discussed above.

V. Scheil [1900, 125] and Langdon [1912, 146] published the inscription of the Etemenanki cylinder. However, the name of a toponym appearing just before Akkade was unclear. Likewise, the name of a toponym following Akkade was damaged and unreadable. Later, R. Da Riva [2008, 12, 19–22] published the Eurmeiminanki cylinder, BM42667 II 10' and collated the Etemenanki cylinder with it to restore these two toponyms. Thus, it is identified that the toponym before Akkade is Dēr, and after Akkade is Dur-Šarrukīn [Pirngruber 2014, 214–215]. Wall-Romana was only able to use Scheil and Langdon's published inscription. Therefore, he wrongly developed his view for a regional location of Akkade using topographical information of this inscription.

Furthermore, Wall-Romana also incorrectly understood and interpreted certain aspects of the Old Akkadian tablet published in 1957 by Gelb. As A. Westenholz [1999, 32, fn. 76] indicated, no topographical information on the location of Akkade is contained in the tablet.

16) For reports of the excavations in Tell Mohammad, see [Wall-Romana 1990, 243–244, fn. 152; Postgate and Watson 1979, 156; Roaf and Postgate 1981, 184; Killick and Roaf 1983, 216; Al-Khayyat 1984, 146–154; Black and Killick 1985, 223; Matab *et al.* 1990, 127–159].

17) The focus of Frayne's argument was especially on pp. 112–113. For the applied site nos. here and below, see [Adams 1965, 135–136].

recalled that Dūr-Šarrukīn means fortress of Sargon, and this toponym cannot be linked to the later Neo-Assyrian capital of the same name that was founded by Sargon II as this *kudurru* predates his reign. Therefore, he argued that Dūr-Šarrukīn could be interpreted to be a later changed name of the city of Akkade and suggested that Dūr-Šarrukīn be equated with Akkade¹⁸⁾. Frayne [2004, 112–113] noted the following to support this equation. In Neo-Assyrian times, this Babylonian Dūr-Šarrukīn is mentioned several times as the capital of an Assyrian province, and its name also appears alongside the province of Laḥīru, thought to be situated in the Diyala region [Brinkman 1968, 178, fn. 1093; Parpola 1970b, 112–14; 1983, 299; Zadok 1985, 208; Parpola and Porter 2001, map 10 D2, 12, Laḥīru (1); Bagg 2017, 360–362]. Moreover, a Neo-Assyrian letter that was found in Kuyunjik reports the location of Dūr-Šarrukīn as being on or near the Turnu (= Diyala) river [Fuchs and Parpola 2001, 106–107, no. 156]. Frayne considered that the name of Tell Seraij, located in the region of the confluence of the Tigris with the Diyala, contained a reflection of the name Dūr-Šarrukīn. Accordingly, he identified the alias name of Dūr-Šarrukīn with Akkade and in turn with Tell Seraij.

Frayne's identification was denied by L. Marti and R. Pirngruber¹⁹⁾. Marti [2014, 208] drew attention to a reference in a letter from the Neo-Assyrian period, SAA 18, 9, which was addressed from Akkade to Esarhaddon. In this letter, Akkade and a toponym written as Dūr-Šarrukku are referred to side-by-side within the very broken context of an itinerary. By itself, this testifies that the two toponyms cannot refer to the same plot. Likewise, Pirngruber [2014, 214] expressed skepticism regarding the possibility of equating Akkade with Dūr-Šarrukīn. He indicated that in the Etemenanki cylinder of Nebuchadnezzar II, Akkade is registered before Dūr-Šarrukīn and along with other toponyms²⁰⁾. This is also strong evidence against Frayne's argument.

A. R. George [2007, 35] used an unpublished Old Babylonian letter, A. 3193, found in Mari, to identify the location of Akkade in a region near to the confluence of the Tigris with the Diyala. This text records an itinerary from Sippar to Ešnunna via Tutub. The name of another toponym is also registered between Sippar and Tuttub (= Khafajah), but the name is partially broken and not clearly readable. George argued that the broken name can be restored to Akkade ([*a-kà*]-*dè*^{ki}). Noting the well-known locations of Sippar and Tutub, he suggested that Akkade could be placed between them, near the confluence of the Tigris with the Diyala.

As George himself noted, D. Charpin [with Joannès, Lackenbacher, and Lafont 1988, 150, fn. 68] had restored the relevant toponym as [*ú*]-*pi*₅^{ki}. However, George considered that Charpin's restoration was orthographically improbable for the given period, during which the toponym Upi (= Greek Opis) was written *ú-pí-(i)*^{ki}. Frame [2011, 133] supported George's restoration. On the other hand, Sommerfeld [2014, 154, fn. 2] and N. Ziegler [2014, 180, fn. 23] indicated that George's restoration rested on a misunderstanding of the unpublished A. 3193, and they supported Charpin's original restoration. Therefore, unfortunately, George's localization of Akkade must be considered inconclusive due to the remaining uncertainty regarding the restoration of the relevant part of the toponym in this letter.

Ziegler [2014, 179 and 185–186, fn. 45] also considered that Akkade was to be sought near the confluence of the Tigris with the Diyala, based on topographical information that is presented in following six pieces of written evidence from the Old Babylonian period. The first piece of this evidence is a letter from Šamši-Adad I, ARM I 36 (= LAPO 14, 447): 4–13 found in the archives

18) Al-Adami also argued that the findspot of this *kudurru*, Tulūl Mujailī¹ can be identified with Dūr-Šarrukīn (= Akkade), although without providing a clear reason.

19) W. Sommerfeld [2011, 90, fn. 17; 2014, 156–157] rejected the possibility that Entry 92 could be read as a-ṛgada(?)¹.KI. He also criticized Frayne's method of equating an ancient toponym with a modern place name based on an apparent similarity of the names. He considered that if a settlement had been abandoned for a long period even before the Sassanid and Islamic periods, it was unlikely that its name would have been preserved to modern times.

20) Regarding the Etemenanki cylinder, see fn. 15 above.

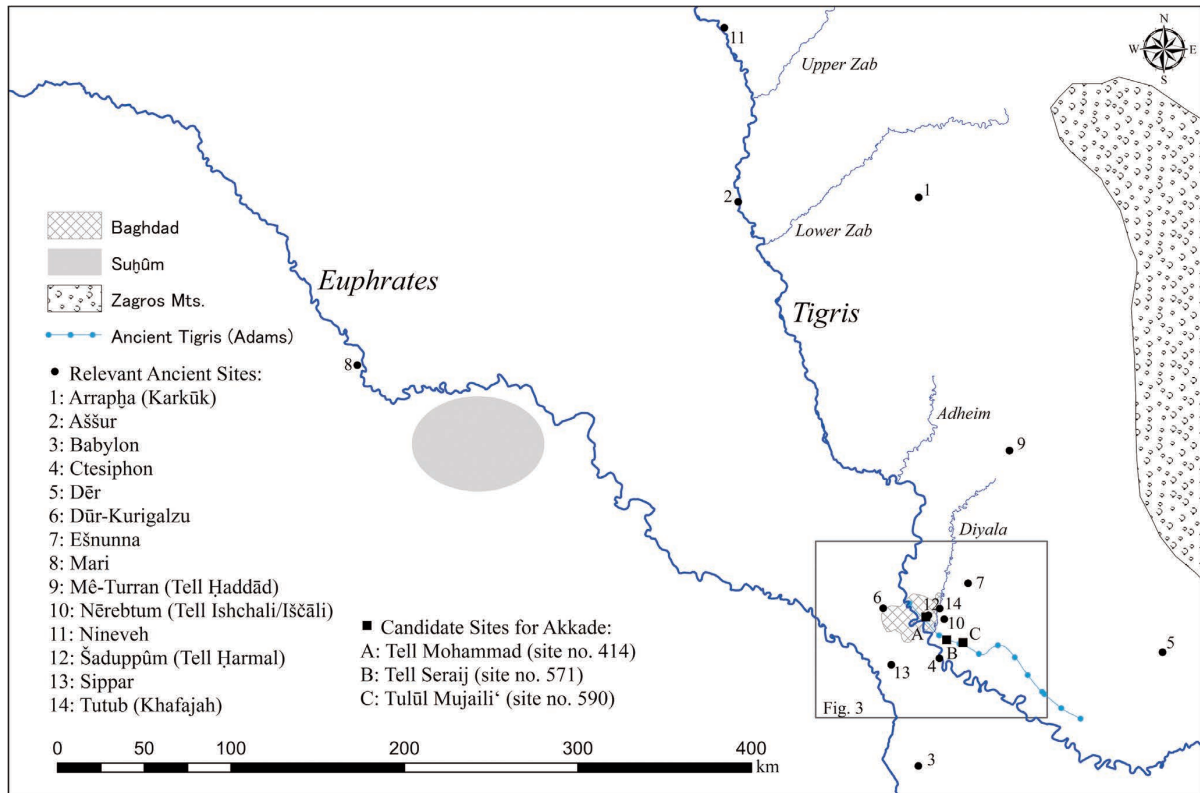


Fig. 2 – Locations of Candidate Sites for Akkade and Relevant Ancient Sites of Section V. 1.

of Mari, sent to his son Yasmah-Addu, the viceroy of Mari. It describes that the planned journey of Šamši-Adad I upriver to return to Aššur from Akkade. The second and third pieces are a text, OBTI 138, found from Nērebtum (= Tell Ishchali/Iščāli), and a text found from Šaduppūm (= Tell Ḥarmal)²¹. Both sites are located near the confluence of the Tigris with the Diyala. These texts refer to the presence of groups of Akkadian people. The fourth piece of written evidence is an archive of Mari, ARM 27, 135 that indicates that Akkade was under the political influence of both Ešnunna and Babylon. The fifth and sixth pieces are two Mari archives, A. 362 and A. 3917 (= FM IX, 71). Both indicate the location of Akkade somewhere west of and not far from Ešnunna and east of Suḥūm. Suḥūm has not been precisely located, but it is almost certainly in the Middle Euphrates region, east of Mari [Groneberg 1980, 210; Nashef 1982, 235–236; Zadok 1985, 274; Marín 2001, 242; Parpola and Porter 2001, map 9, 16, Sūḫu; Beaulieu 2011–2013, 259–260; Bagg 2017, 541–542; Ziegler and Langlois 2017, 310–312]. From topographical information contained in these six pieces of Old Babylonian written evidence, Ziegler inferred that Akkade was located approximately 20 km north of Baghdad on the banks of the ancient course of the Tigris.

Finally, Pirngruber [2014, 211–215] sought to find a clue for the location of Akkade in two written sources from Babylonia dated to the 1st millennium BCE. He reached the same conclusion as other scholars, tentatively locating Akkade near the confluence of the Tigris with the Diyala. The first piece of evidence cited is Nebuchadnezzar II's inscription of the Etemenanki cylinder, where Akkade is referred to together with other toponyms under his rule. Dēr, which is identified with Tell Ḥaqar, is listed before Akkade [Edzard and Farber 1974, 22–23, 30; Edzard, Farbar, and Sollberger 1977, 22, 30; Groneberg 1980, 50, 55; Nashef 1982, 79–80; Zadock 1985, 117–18;

21) The text found from Tell Ḥarmal, see [Ellis 1972, 50]. Regarding the identification of Nērebtum, see [Groneberg 1980, 176–177; Miglus 1998–2001, 211–214]. As for the identification of Šaduppūm, see [Groneberg 1980, 215–216; von Koppen 2006–2008, 488–491; Miglus 2006–2008, 491–495].

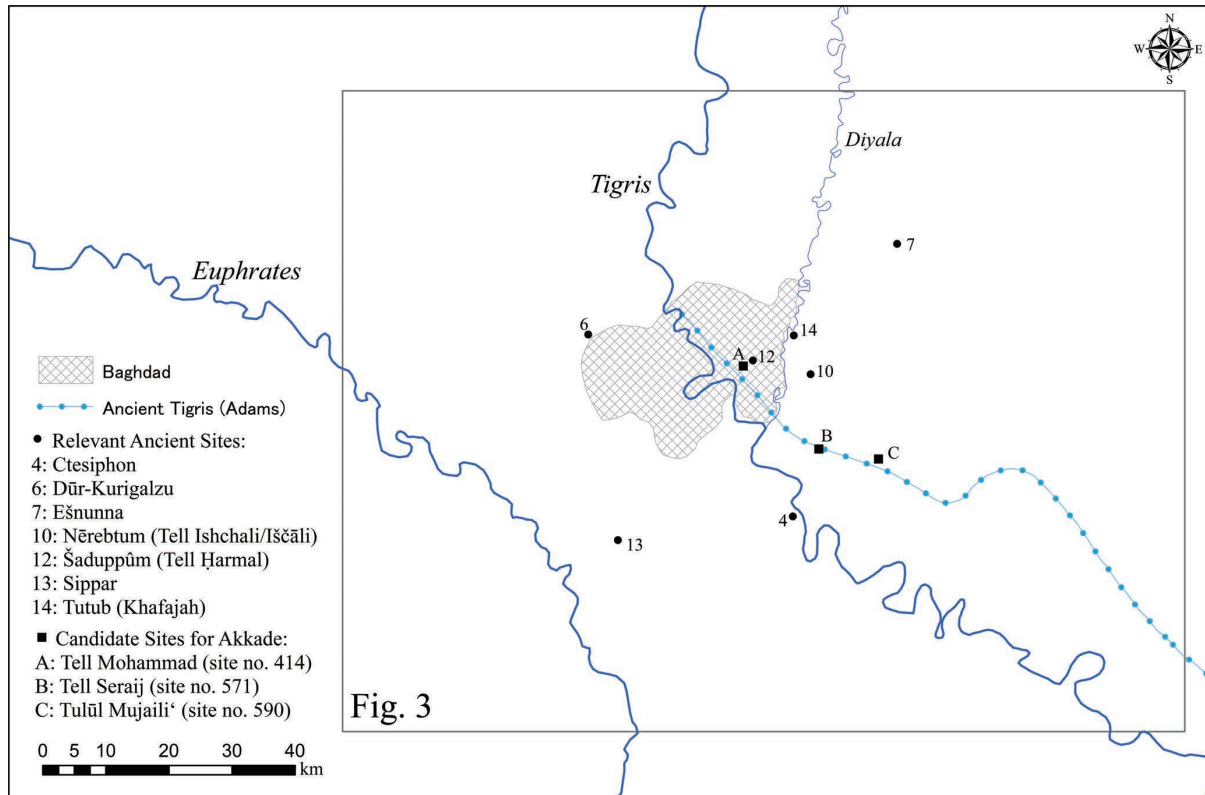


Fig. 3 – Locations of Candidate Sites for Akkade and Relevant Ancient Sites of Section V. 1 around Baghdad.

Parpola and Porter 2001, map 11 A3, 8, Dēru]. After Akkade, Dūr-Šarrukīn appears, but its location is unknown. The following toponym is the land of Arrapha, which has been identified with Karkūk [Edzard and Farber 1974, 16; Groneberg 1980, 21-22; Nashef 1982, 38-39; 1991, 13; Zadok 1985, 29-30; Vallat 1993, 19; Parpola and Porter 2001, map 10 D1, 6, Arrapha; Marín 2001, 36; Bagg 2017, 65-68]. Taking into account the known locations of Dēr and Arrapha, Pirngruber observed that toponyms of the Etemenanki cylinder would have run from south to north. Thus, he tentatively located Akkade near the confluence of the Tigris with the Diyala.

For the second piece of written evidence, like McEwan and Wall-Romana, Pirngruber drew attention to a clay barrel inscription of Cyrus the Great, King of the Achaemenid Persian Empire, V R 35. In this inscription, Akkade is mentioned together with toponyms that were certainly located east of the Tigris when seen from Babylon. In addition, Ešnunna, Zamban, and Mē-Turran are listed after Akkade. Ešnunna's location is certainly to the east of the Diyala. Zamban's location is not certain, but in general, it is located in the same region, near the foothills of the Zagros Mountains [Nashef 1982, 279–280; Zadock 1985, 332; Frayne 2009–2011, 510–511; Anonymous 2016–2018, 202]. Mē-Turran is identified with Tell Ḥaddād, also located to the east of the Diyala as well [Nashef 1982, 195; Zadock 1985, 228; Rollig, 1993–1997, 150; Parpola and Porter 2001, maps 10, D2 and 13, Mēturna]. Akkade is referred to first, before these three toponyms, so Pirngruber argued that this would indicate the location of Akkade nearest to Babylon, at the confluence of the Tigris with the Diyala²²⁾.

22) R. Zadok [2000, 6] suggested that a textual mention of Akkade might be found as written 'kd in the 13th century CE. The text tells that a bishop went from Ctesiphon to 'kd to celebrate a baptism there. Without giving a reason, Zadok tentatively argued that the location of Akkade can be sought in the general region of Baghdad-Ctesiphon, near the confluence of the Tigris with the Diyala.

V. 2. Akkade near the Confluence of the Tigris with the Adheim

Westenholz [1999, 32, fns. 77–78; 2002, 25, fig. 1, 38, 41, fn. 56] reviewed Wall-Romana's proposal. To locate Akkade, he drew on the code of Hammurapi, which Wall-Romana first cited in the process of locating Akkade, considering it to contain the most important topographical information, as it enumerates toponyms in their geographical order and places Akkade somewhere on a line linking between Ešnunna and Aššur²³⁾. Thus, he suggested that Akkade may be among many large tells in the region of the confluence of the Tigris with the Adheim. In particular, he noted that the most likely region for the location of Akkade is the northwest of their present confluence²⁴⁾.

S. Paulus [2014b, 199–206] attempted to deduce the location of Akkade from topographical information contained in a *kudurru* of the Middle Babylonian period, MŠ 1 (= MDP 2, 99–111), which, as shown above, Wall-Romana first drew attention to in locating Akkade²⁵⁾. She considered that the location of Akkade could be deduced in relation to the tentative localization of a canal called Nār Šarri and a Kassite house called Bīt-Piri¹⁾ Amurru, which are referred to together with Akkade in this *kudurru*. She also used topographical information obtained from two other *kudurrus*, MŠ 2 (= BBSt. no. 4) and MAI I 5 (= MDP 6, 39–41), which Wall-Romana first drew attention to, along with two more *kudurrus*, MŠ 5 (= MDP 2, 112) and MAE 1. She analyzed the topographical information of these pieces and concluded that the location of Akkade can be deduced to be somewhere near the confluence of Nār Šarri with the ancient name of the Adheim, Radānu.

In addition to these *kudurrus* of the Middle Babylonian period, Paulus also used the topographical information contained in another *kudurru* from the same period, MAI I 9, which tells that following the victory in a battle in the upper reaches of the Lower Zab, the Kassite King, Marduk-apla-iddina I, received five hundred decapitated heads of enemy soldiers as proof of victory in Akkade. Marduk-apla-iddina I received a report about the results of the battle, not in any of royal palaces present in Nippur, Babylon, or Dūr-Kurigalz, but in Akkade. Therefore, Paulus also considered that Akkade would have been situated somewhere strategically very important for the battle, in the upper reaches of the Lower Zab. She deduced that the site must have been to the east of the Tigris²⁶⁾.

Paulus did not specify any precise location of Akkade, as the location of Nār Šarri was not

23) S. Brumfield [2013, 28–30] particularly concurred with Westenholz's view.

24) Westenholz's view was taken up by W. Sallaberger [2007, 424–425, fn. 43, fig. 1] and with I. Schrakamp [2015, 90, maps], although he placed Akkade to the northeast of the present confluence of the Tigris with the Adheim without stating any reason for this localization.

Westenholz did not refer to a particular ancient site as a likely candidate for the ancient site of Akkade in the region to the northwest of the present confluence of the Tigris with the Adheim. Instead, Ziegler [2014, 149] placed the ancient site of Khara'id Ghđairife within the same area on a map that was used for a supplement to the discussion of the localization of Akkade. The site was at first reported to be from an Islamic period, but it was later claimed that a royal inscription of Maništušu was found at the site in the 1930s. The inscription records the construction of a temple of Ninhursaga in a city whose name is written as 𒀠A.A. Thus, F. N. H. Al-Rawi and Black [1993, 147–148] identified Khara'id Ghđairife with 𒀠A.A. [Frayne 1993, 80–81]. Furthermore, in addition to this site, two other ancient sites, named Tell al-Dhuhūbe and Tell 'Ušaimī, are lain [Directorate General of Antiquities, Republic of Iraq 1976, map 21, site nos. 2–4]. Al-Rawi and Black argued that these sites may be a part of Khara'id Ghđairife and might form one continuous site. This may be a site that Westenholz considered to be a candidate for Akkade.

However, P. Steinkeller [1995, 275–281] later disagreed, doubting the reliability of the provenance of the royal inscription, as he considered that the ancient city of 𒀠A.A. referred to in this inscription could not have been located in this region but could be farther south [Sommerfeld 2014, 155]. If Steinkeller is correct, there would have been no Akkadian occupation at this site.

The exact locations of Khara'id Ghđairife (site no. 2 of map 21), Tell al-Dhuhūbe (site no. 3 of map 21), and Tell 'Ušaimī (site no. 4 of map 21) are indicated on a map shown in Fig. 4. Ziegler placed Khara'id Ghđairife approximately 10 km northwest from the mouth of the Adheim. However, it is in actuality located further north, approximately 17 km north from the mouth of the Adheim on the western bank, with its exact location measured using Geographical Information System. Tell al-Dhuhūbe is located 8 km west from Khara'id Ghđairife. Tell 'Ušaimī is located 4 km southwest from Khara'id Ghđairife on its western bank of the Adheim. The three sites are located relatively far from each other. Therefore, by contrast to Al-Rawi and Black's beliefs, it appears that these sites are not parts of one larger, continuous site.

25) Considering abbreviations, MŠ, MAI I, and MAE, which Paulus used, see [Paulus 2014a].

26) W. G. Lambert [2011, 18] first published the *kudurru*, MAI I 9. However, he did not read a relevant toponym as Akkade. Therefore, it is not certain whether the relevant toponym can be read as Akkade.

known. However, Radānu has been considered as the ancient name of the Adheim. Therefore, she likely considered that Akkade could be circumstantially placed in association with the Adheim, which flows naturally to the east of the Tigris.

G. Giannelli and S. Mazzarino [1962, 469–471], and later A. Cavigneaux [2020, 84] proposed a location of Akkade in the region around the confluence of the Tigris with the Adheim. Book III, 28, of the *Historia Nova* of Zosimus, the Greek historian, written at the beginning of the 6th century CE, refers to an account of the retreat of Roman Emperor Julian's army as it abandoned Ctesiphon, crossed the Diyala, and ascended the eastern bank of the Tigris in 363 CE. During this, the army halted in the town Akkete. This site can be located roughly between Baghdad and Samarra and north of the town Symbra, which has been tentatively equated with Hucumbra from Ammianus Marcellinus's *Roman History* 25: 1, 4, and 'Ukbarā of the later Islamic period [Paschoud 1979, 48 and map 3]. Giannelli and Mazzarino, and Cavigneaux suggested the possibility of equating Akkete with Akkade. It is uncertain whether Hucumbra is the same as 'Ukbarā. The former suggested that Akkade/Akkete was located somewhere along the eastern bank of the Tigris north of Hucumbra, but the latter argued that Akkade/Akkete was located somewhere along the eastern bank of the ancient course of the Tigris, north of 'Ukbarā, in a region around the confluence of the Tigris with the Adheim.

V. 3. Akkade near the Modern Town of Samarra

In addition to his identification of Akkade with Greek Agranis (= Roman Macepracta), Lane [1923, 78–79, 129, map 2] also proposed Qadisiyeh as a potential site, located 13 km south-southeast from the modern town of Samarra. This identification is based on the account of a clay barrel inscription from Cyrus the Great, King of the Achaemenid Persian Empire, V R 35, in which Akkade is mentioned together with Zamban. Accordingly, Lane assumed that Akkade was in fact near Zamban. However, he incorrectly identified Zamban with Samarra and then the latter with Sambana. Thus, he equated Carrhae, described as a camp site that is visited before Sambana while ascending the Tigris by Alexander the Great in Quintus Curtius Rufus's *History of the Life and Reign of Alexander the Great*, vol. 10, ch. 4, with Akkade and then Qadisiyeh located in the lower reaches of Samarra. Zamban (= Simurru) is located in the Diyala region; thus, this identification is inaccurate and cannot be supported [Frayne 2009–2011, 510–511; Anonymous 2016–2018, 202].

J. Reade [2002, 262–269] also considered that the ancient site of Akkade would be found near Qadisiyeh. However, unlike other scholars, he did not rest on the use of topographical information contained in written sources to make this identification. Instead, this claim is based on the discovery of the largest statue of its kind known in Mesopotamia, bearing an Akkadian or post-Akkadian date, in Qadisiyeh. He drew the conclusion that any site that produces a 3rd millennium statue of imported stone and is the largest of this kind found so far in Iraq, merits closer inspection as a candidate for assignment as the ancient site of Akkade. However, it is not yet known whether this statue originated in situ or was brought from somewhere else for secondary use at some later period, and no topographical information has provided to suggest that Akkade had its location near Qadisiyeh. Therefore, this view must be considered circumstantial and inconclusive and cannot be supported.

Sommerfeld [2014, 151–175] identified the location of Akkade in the region around the town currently known as Samarra using written sources from the Akkadian period. Although certain names of Akkade are indeed found in these written sources, they do not contain any geographical information to specify the location of Akkade. He comprehensively analyzed the descriptions of these written sources and speculated that Tutub and Gasur were important strategic cities subordinate to the Dynasty of Akkad that had close ties to the city of Akkade [Sommerfeld 2004, 285–292; 2014, 164–170]. He likewise considered that the geographically most suitable place for governing

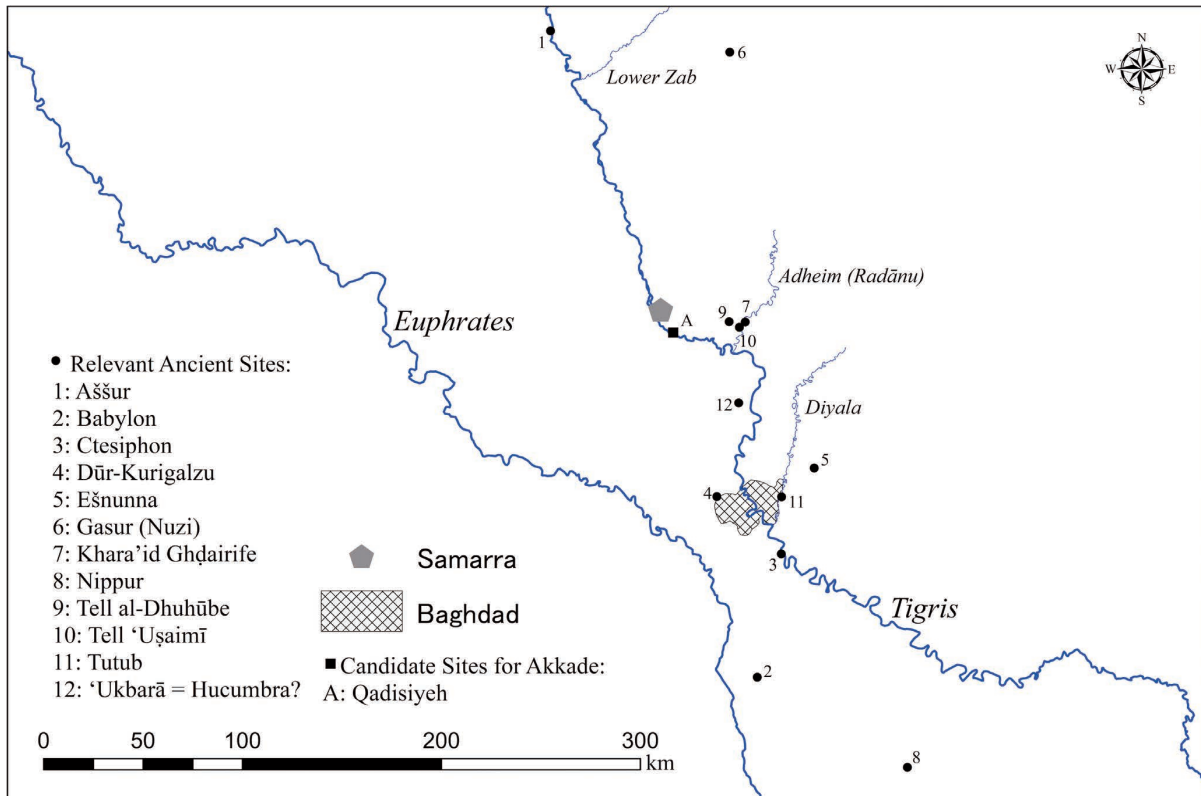


Fig. 4 – Locations of Candidate Sites for Akkade and Relevant Ancient Sites of Sections V. 2 and V. 3.

these two important cities would have been in the Samarra region because it is located halfway between them. Therefore, he deduced that Akkade must have been located in this region. This view, however, was not founded on any concrete geographical information that specifies Akkade's location. Hence, it is circumstantial and cannot easily be supported.

V. 4. Summary

We have discussed various theories for the location of Akkade in the northern part of southern Mesopotamia. First, McEwan first indicated the possibility that Akkade could be located near the confluence of the Tigris with the Diyala. Then, similar views were also indicated by Parpola, Wall-Romana, Frayne, George, Ziegler, and Pirngruber. Only Wall-Romana and Frayne attempted to identify Akkade with specific ancient sites, using textual material. The former concluded that Tell Mohammad was the most plausible ancient site for Akkade. However, excavations that were undertaken before any such proposal of this identification was made did not produce any archaeological or written pieces of evidence to indicate that Tell Mohammad was indeed the ancient city of Akkade. Therefore, taking this into account, it is difficult to support this theory. The latter identified Akkade with Dūr-Šarrukīn and accordingly with Tell Seraij. However, this theory was later refuted by the presence of certain pieces of written evidence. For George's theory, locating Akkade near to the confluence of the Tigris with the Diyala, a registered relevant toponym in a text is damaged. Therefore, it is not certain whether this could really be read as Akkade. For this reason, his theory should be considered inconclusive, and it cannot be supported with certainty. Other scholars only deduced a location for Akkade near the confluence of the Tigris with the Diyala without proposing any identification with a specific ancient site. Ultimately, no location for the ancient city of Akkade has been identified in this region.

Other candidate regions for the location of Akkade have been proposed. Westenholz and Paulus deduced that it was located somewhere near the confluence of the Tigris with the Adheim. Both Giannelli and Mazzarino on the one hand and Cavigneaux on the other also suggested possibility of the equation of Akkete with Akkade and its location somewhere to the north of Hucumbra and ‘Ukbarā, in a region somewhere south of the confluence of the Tigris with the Adheim. These scholars only deduced the region without proposing to identify any specific ancient site. Inevitably the ancient city of Akkade has not yet been located in this region.

Lane, Reade, and Sommerfeld located Akkade in a region near the modern town of Samarra. The former two, in particular, suggested that Akkade could be located in Qadisiyeh. However, Lane’s identification was based on an incorrect identification of Zamban with Samarra. Therefore, we determined that his identification of Akkade is incorrect and could not be supported. Reade’s argument was in fact based only on the discovery of the largest statue of its kind known in Mesopotamia with an Akkadian or post-Akkadian date but without any additional topographical information contained in written sources indicating this site as the location of Akkade. Furthermore, it is not known whether the statue was found in its original siting or had been brought from somewhere else for secondary use at a later time. Thus, it must be concluded that Reade’s view is circumstantial, and it can find little support. Sommerfeld assumed the location of Akkade to be in a region near to the modern town of Samarra. However, again, his assumption was made in the absence of any topographical information contained in written sources that concretely indicated the location of Akkade in this region. Therefore, his argument is circumstantial, and it also cannot be supported.

The author of this paper likewise sought to deduce the location of Akkade [Kawakami 2004, 37–129]. The author analyzed and verified the accuracy and credibility of every available piece of topographical information to which Wall-Romana drew attention to identify the location of Akkade and then classified them into three categories. It was identified that a total of six pieces of written evidence contain the most reliable and accurate topographical information available that indicate the location of Akkade. These six pieces of written evidence are the following: the prologue to the Code of Ḥammurapi; a clay barrel inscription of Cyrus the Great, King of the Achaemenid Persian Empire, V R 35; the Sumerian Temple Hymns of Enḫeduanna; a list of *ensis* of either the Akkadian or Ur III periods, UET 8, 14; the Curse of Akkade; and royal inscriptions of the Elamite King, Šutruk-Nahḫunte, EKI 22–24b and 28C I. The topographical information contained in these pieces of written evidence were interpreted by the author in an objective way to the maximum extent possible, and it was concluded that Akkade must have been located on either of the banks of the Tigris, running from the confluence of the Tigris with the Diyala toward Aššur. Thus, the author considered that the confluence of the Tigris with the Diyala and the Adheim and a region near the modern town of Samarra are the possible candidate regions for the location of Akkade. However, as yet, Akkade has not been identified with any specific ancient site²⁷⁾.

VI. Conclusion and Formulation of the Specific Methodology for Identifying Akkade

In the early days of Assyriology, Akkade had been identified with Sippar-ša-Anuñitu, Tell ed-Dēr, Greek Agranis (= Roman Macepracta), and Babylon. Later, the identification of Akkade with Ishan Mizyad in a suburb of Babylon, was proposed. However, all of these proposals have either been directly refuted or judged substantially unlikely.

An important common factor can be observed, namely, that following McEwan’s proposal in

27) In addition to the aforementioned scholars, W. Pethe [2014, 191–197] sought a clue to the location of Akkade from Middle Assyrian written sources but concluded that no informative topographical information can be found from this period to help locate Akkade.

1982, all subsequent proposals have concluded that Akkade was most likely located somewhere near the course of the Tigris, and indeed in regions around the confluence of the Tigris with the Diyala and the Adheim, as well as near the modern town of Samarra. However, specific candidate sites for Akkade have not been found by scholars in these regions. Wall-Romana, Frayne, and Lane are the only ones who have proposed specific ancient sites, namely, Tell Mohammad, Tell Seraij, and Qadisiyeh, respectively, for the location of the ancient site of Akkade. However, their proposals have been refuted, judged considerably unlikely, and/or considered inconclusive. Upon reviewing all previous attempts to identify the location of Akkade and verifying the nature of all the topographical information that is contained in the written documents used for building and supporting these tentative identifications, it has become evident that the unfortunate failure to identify the ancient site of Akkade is largely owing to two main factors.

First, with the notable exceptions of Wall-Romana, Ziegler, and Cavigneaux, every scholar to date has overlooked the significant impact of the changing course of the Tigris on locating the ancient site of Akkade; only these three researchers have attempted to locate it in relation to the ancient course of the Tigris. Second, the different types of topographical information that relate to the location of Akkade are contained in written documents that have not been appropriately and effectively utilized. The accuracy and credibility of every piece of topographical information on the location of Akkade are not consistent. Only a few pieces of topographical information give relatively accurate and reliable topographical information, although they are not absolute and do not pinpoint its precise location. Most other pieces of topographical information contain uncertain, circumstantial, and secondary elements for locating Akkade. Some scholars have attempted to develop subjective and hypothetical interpretations from both the accurate and reliable pieces and the uncertain, circumstantial, and secondary pieces of topographical information for locating Akkade. This has ultimately distorted the true nature of the topographical information on the location of Akkade. Other scholars incorporated and gave equal value to every piece of topographical information, including the accurate and reliable; the uncertain, circumstantial, and secondary; and the subjectively and hypothetically interpreted types. This method has also led to misinterpretations of the location of Akkade.

These two factors are clearly the main reasons for the failure to find the location of Akkade. Wall-Romana was the only scholar who classified every available piece of topographical information on the location of Akkade into two types, namely, definite and tentative evidence, to search its location. However, he valued both types of topographical information equally and integrated them to reach a conclusion, thus failing to find an appropriate candidate site for Akkade. To address these issues, we need to determine appropriate logical methods for searching the ancient city of Akkade. The written sources that indicate the regional location of Akkade are of varying types. To harmonize the diversity of written sources indicating different regions for Akkade and to obtain the most accurate and reliable topographical information, the written sources are classified into three types and a separate cartographic analysis is conducted for each type.

The first class of evidence consists of those items that have **Primary Topographical Information**. Such items directly indicate the location of Akkade in an objective way and are thus likely to be reliable. For example, the geographical information contained in a certain written document indicates that Akkade was located adjacent to ancient city A. Then, if ancient city A is already identified with a specific ancient site and its location is known, the regional location of Akkade can be determined with certainty as being in the vicinity or adjacent to ancient city A. We have organized and evaluated all known pieces of written evidence that scholars have hitherto relied upon to identify the location of Akkade. Broadly speaking, four kinds of topographical information deserve the label of Primary Topographical Information.

The second class is **Supportive Secondary Topographical Information**. While this does not

directly indicate the location of Akkade in an objective way and cannot stand alone as evidence for its location, in conjunction with Primary Topographical Information it can circumstantially strengthen the reliability of that information. For example, the geographical information contained in a certain written document indicates that Akkade was in an area located 5 days away from ancient city B. Even if ancient city B is identified with a specific ancient site and its location is known, this information alone is indefinite to presume the regional location of Akkade. However, from the Primary Topographical Information, it is known that Akkade was located adjacent to ancient city A, whose location is well known. Therefore, if ancient city A can be reached from ancient city B in approximately 5 days on horseback, on foot, or by boat, this Supportive Secondary Topographical Information strengthens the reliability of Akkade's location in the area adjacent to ancient city A.

Using these two types of evidence, a **Core Regional Location for Akkade** can be established from the superimposition of all locations relating to the Primary Topographical Information. In this way, every piece of Primary Topographical Information can be harmonized and given appropriate weight.

Subsequently, possible candidate sites for Akkade are investigated within the Core Regional Location for Akkade. Adams's [1972, 182–208, maps 1A-1F; 1965, maps] distribution maps for ancient sites, made in his Akkad and Land Behind Baghdad Surveys, are incorporated into the Core Regional Location for Akkade, and the ancient sites lying in this region are then assessed based on their sizes and dates to select possible candidate sites for Akkade. We believe that one of these selected ancient sites should be identified as the ancient site of Akkade.

The possible candidate sites for Akkade are further assessed in relation to a third class of evidence, namely, **Secondary Topographical Information**. This can indicate a regional location of Akkade but its analysis may lead to erroneous conclusions because such information can only be extracted in secondary, circumstantial, hypothetical, subjective, and/or indirect ways. For example, the geographical information contained in a certain written document indicates that Akkade was located adjacent to ancient city C. However, if the location of ancient city C has not yet been identified with a certain ancient site and its location is unknown, the regional location of Akkade can only be assumed after a tentative identification of the location of ancient city C. Then, the regional location of Akkade can indirectly be assumed to be in the vicinity or adjacent to the assumed location of ancient city C. Alternatively, if the assumed location of ancient city C is incorrect, the assumed location of Akkade is accordingly wrong. Most written sources containing topographical information on the regional location of Akkade should be classified as this type. It was found out that since McEwan's proposal of the location of Akkade, all subsequent proposals have reached the conclusion that Akkade was most likely located near the course of the Tigris. Three pieces of written evidence containing topographical information of this type, pertain to the relationship of Akkade with the course of the Tigris. However, as the course of the river has changed over time, written sources with topographical information on the location of Akkade relative to the Tigris have to be classified as Secondary Topographical Information. If the ancient course of the Tigris is accurately reconstructed and we identify that its ancient course used to flow in the Core Regional Location of Akkade, the location of Akkade can be identified among qualified possible candidate sites for Akkade lying in the Core Regional Location of Akkade. Therefore, the accurate reconstruction of the ancient course of the Tigris is most crucial for identifying the location of Akkade. In addition, all available pieces of Supportive Secondary Topographical Information to this date, pertaining to the relationship of Akkade with the course of the Tigris, have to be also used as they enable us to support and strengthen the reliability of the presence of the close topographical relationship between Akkade and the ancient course of the Tigris.

The author of this paper has put this method into practice in searching the location of Akkade. The author was able to reach a conclusion that was different from those of the aforementioned

previous studies [Kawakami 2022, 101–135]. In that paper, it was concluded that Tell Sinker and perhaps ‘Ukbarā, located halfway between Baghdad and Samarra on the eastern bank of the ancient course of the Tigris, which used to flow west of the present course of the Tigris, are the most plausible candidate sites for the ancient city of Akkade.

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A STUDY OF FROG-SHAPED ARTEFACTS IN MESOPOTAMIA

Mai TSUNEKI*

Introduction

In the ancient Near East, animals are characteristically depicted in reliefs and on pottery. Among them, vultures, foxes and other animal figures were carved in relief on stone columns at Göbekli Tepe in South-East Anatolia from the Neolithic period, while the wall paintings at Çatal Höyük in South Anatolia depicted giant bulls, lions and other animals [Department of Ancient Near Eastern Art in The Metropolitan Museum of Art 2014]. Then, in the Uruk period, lion and bull designs were used as symbols of power [ibid.]. Furthermore, animals were sacrificed and often depicted on temple implements. In particular, during the Hittite period, earthenware and metal vessels began to be made with rhytons in the shape of animals and animal heads, which are believed to have been used in temple rituals [ibid.].

Similarly, many artefacts in the form of small animals such as frogs have been found. Frog-shaped artefacts have been found at the 'Usiyeh in the second millennium BC.¹⁾ However, their use has not yet been determined, as they were either 'weights' or 'amulets'. Examples of frog-shaped artefacts have also been found from Kültepe in Central Anatolia [Kulakoğlu 2017: p. 348]. Thus, frog motifs are frequently used, particularly in Mesopotamia, but why was it necessary for them to be in the shape of a frog? This study therefore considers the meaning of the frog motif and its uses.

Meaning of Frogs

To begin with, frogs were a symbol of life and fertility in the early dynasties of Egypt around 3000 BC, when the flooding of the Nile produced millions of frogs [Cowie 2018]. As a result, in Egyptian mythology, the goddess 'Heket' and the male god 'Kuku' were depicted as frogs [ibid.]. The goddess Heket, who is also the goddess of water and the symbol of the midwife responsible for conception and childbirth, is represented by a frog head [Wanner 1999]. For this reason, Egyptian women often wore metal amulets in the shape of frogs to favor her [Wanner 1999; Page 2018].

In addition, the flooding of the Nile was an important event for agriculture, which supplied water to the fields, and was considered a symbol of abundance, along with the subsequent appearance of frogs in large numbers [Wanner 1999]. Furthermore, the frog became a symbol for the number 'hefnu', meaning '100,000' or 'huge number' [ibid.]. In this regard, Wanner [1999] notes that the amazing fertility of frogs and their association with water, which is so important to human life, may have led humans to view frogs as a powerful and positive symbol.

In ancient Mesopotamia, settlement sites can also be found around the Tigris and Euphrates rivers, where the people living there established a centralised society [Page 2018]. And the people of that time also attached great importance to the rivers here, treating the frogs there as symbols of fertility and life [ibid.]. In the Sumerian poem Inanna and Enki, the first creature that the goddess Inanna tricked the water god Enki into giving the gods an order to send some water creatures for Enki to retrieve it was a frog [Cowie 2018]. Therefore it seems that frogs came to be depicted in reliefs, sculptures and objects as a symbol of life-giving water [Page 2018]. Furthermore,

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1) Similar motifs often unearthed include ducks rarely lion and boar heads in Mesopotamia [Melein 2018: p. 32].

focusing on the life cycle of frogs, they are known to take on a completely different shape when they transform from juvenile to adult. Ancient peoples revered their shape as a symbol of rebirth [Cowie 2018].

However, the frog has not always been interpreted in a positive light as a symbol of fertility. For example, the second plague of Egypt described in Exodus 8:6 was the work of frogs, and in the New Testament, frogs are associated with unclean spirits in Revelation 16:13 [ibid.]. Thus, the social and symbolic importance of frogs has been preserved in many documents since antiquity [Page 2018], and it is clear that frogs were also familiar in ancient Mesopotamia.

Frog-shaped Artefacts

Examples of frog-shaped artefacts from the Mesopotamian region are given from museum sources. One of the examples, the British Museum has a collection of frog-shaped artefacts made of lapis lazuli. Among them are a frog-shaped artefact from Larsa, measuring 2.2×1.2 cm [The British Museum: Museum No. 122106], and a frog-shaped artefact from Ur, measuring 1.67×1.87 cm [The British Museum: Museum No. 120650]. Furthermore, a reddish-brown frog-shaped artefact from Mesopotamia, dating back to the third millennium BC, measures 2.06 cm in length [The Walters Art Museum: Access No. 42.1462]. In the 2nd millennium BC, a hematite frog-shaped artefact ($0.7 \times 0.9 \times 1.3$ cm) has been excavated from 'Usiyeh [Oguchi and Tsuneki 2022: No. 19, List of figs. 1, 2 and 3 on p. 43]. These all have in common that they are made of stone and are 1–2 cm in size.

Other examples may have been used as weights. One frog-shaped artefact in the British Museum, made of striped agate with a hole in the centre to allow it to be threaded onto a cord, dates from the Akkadian, ca 2400 BC to 2200 BC, measuring 2×2.7 cm and weighing 8.761 g [The British Museum: Museum No. 123555]. As one shekel, a unit of weight at the time, is approximately 8.3 g [Dercksen 1996: p. 251], the museum representative is of the opinion that if the artefact had been used as a weight, it would have been used as a unit of one shekel [The British Museum: Museum No. 123555]. The Metropolitan Museum of Art also has a collection of diorite or andesite frog-shaped weights from the Old Babylonian period, dating from around 2000 BC to 1600 BC [The Metropolitan Museum of Art: Accession No. 1988.301]. It measures 12.3×21.8 cm, and on the frog's throat is an Akkadian inscription that reads "a frog [weighing] 10 minas, a legitimate weight of the god Shamash, belonging to Iddin-Nergal, son of Arkat-ili-damqa." [ibid.]. The inscription suggests that the frog weighs about 5 kg, considering that one mina weighs about 500 g [Dercksen 1996: p. 251]. These two examples also correspond to the standards of weight at the time, and it is very likely that they served as weights.

Conclusions

This section discusses the meaning of frogs and their uses. In general, frogs have long been strongly associated with rivers. This is partly because frogs lived in the water as juveniles during their development, and because it was essential for them to live around bodies of water even after they had reached adulthood. Moreover, because frogs were prolific, they were treated as a symbol of fertility and life, and are often mentioned in mythology. The use of relics in the shape of frogs seems to have varied according to the size of the relic. For example, small relics with a diameter of 1–2 cm were used as amulets to be worn. In addition, artefacts excavated from Mesopotamia indicate that some objects larger than 2 cm were evidently used as weights. Thus, it is clear that frogs were a familiar part of people's lives and were closely related to them.

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例）〔松井 1960: 30-135〕
〔大岡 1987: fig. 12; Naharagha 1981: 45ff.〕
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“AL-RĀFIDĀN” EDITORIAL POLICY

This journal is of an annual issue, designed to cover various studies of ancient Western Asia. It is an institute journal, but any external contributor will be welcome. The adoption of article shall be left to the discretion of the editorial board. The deadline for submission is the end of October.

Notes to contributors

1. The papers handled include unpublished theses, reports, book reviews, translations, brief notes, etc. All articles must be written in either Japanese or English in principle.
2. For translated articles, the contributor should make themselves responsible for completing necessary procedures, such as copyright and permission to translate, with the original author before their submission to the editorial board.
3. Contributors should clarify the literature cited in the article.
4. Notes and quotations should be limited to those indispensable to the discussion.
5. Any manuscript, together with photos, maps, figures, etc., submitted to the editorial board shall not be returned.
6. If a resume in any language needs to be printed, please send it with manuscript.
7. Tables of contents will be presented in both Japanese and English. Contributors are required to submit the papers with the title translated into Japanese, otherwise please trust it to the editorial board.
8. No payment shall be made for your manuscript. Two original copies of the journal and a PDF version of an offprint shall be distributed free of charge. In case of a joint article, two original copies, as well as a PDF offprint, shall be distributed to each author.
9. The following is the address of the editorial board for correspondence:

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Guideline to writing

1. The manuscript should be typed on one side only of A-4 size paper. To be accompanied with digital files is strongly preferable.
2. On the front page, to the exclusion of the text, the title of article should be written as well as the name, address and position of author(s).
3. Please be sure to prepare necessary drawings and tables as Digital Files in the computer disc, or on separate papers one by one (less than 23.5×16.0 cm each in size of completion of printing), with explanations and consecutive numbers respectively, and compile them aside from the text. In addition, designate, in the text, where each one should be inserted.
4. The drawings which were inked over should be covered by a tracing paper. Photo typesetting of letters, numbers, etc. in illustrations can be done by the editorial board.
5. As for photograph, digital file is preferable. Positive films and clearly printed photo-papers are acceptable. They shall also require explanations, consecutive numbers, etc. mentioned in item 3.
6. Explanatory notes should be written on separate papers, each with a consecutive number to be given to the relevant sentence in the text.
7. In the text, specify the literature for reference as below; writer's name, publication year, and quoted pages are arranged in order, enclosed in brackets:
[Childe 1956: 30–32]
[Annahar 1943: 123; Agha 1946: pl. 15]
If those of the same writer are published in the same year, classify them by additional alphabet to the publication year.
8. Put all the references that have been quoted in the text and notes, and write them as follows: (1) The writers' names are to be listed in alphabetical order. The names of Japanese, Arabs, etc. must be arranged among the European names based on the supposition of their having been rewritten in Latin. (2) The writer's name, issue year, title, volume name, volume number, issue number and publisher's name (place) are to be filled in the references in regular sequence. The title of journals or independent publications should be specified, in Italic letters.
9. As a rule, the first proofreading shall be done by the original author.

[News]

From April 2022, the Institute for Cultural Studies of Ancient Iraq became an affiliated research institute of the School of Asia 21. The official name of the institute became the “Institute for Cultural Studies of Ancient Iraq in the School of Asia 21, Kokushikan University”. The School of Asia 21 is one of the seven faculties of Kokushikan University and was established in April 2002. The institute was established in 1976 with the late Emeritus Professor Hideo Fujii as its first director, and the 46-year history of the institute came to an end as an independent research institute. Although the institute will start in a new form due to organizational changes, its role as an archaeological institute centered on Iraq and education will not change.

Excavations at Umm Qais began in 2005 as a training site for Iraqi researchers by JICA and for students of Kokushikan University. Although many research results were obtained, due to the absence of the current researcher in charge, the project was forced to be suspended at the end of March 2023.

From 2022, with the cooperation of the Digital Archive Center of Kokushikan University and the Kokushikan Historical Reference Room, plans are underway to digitize the vast amount of photographic films, drawings, etc. of the institute. Some of them will be released in the spring of 2025, so please look forward to it.

Mr. Futoshi Matsumoto, Ambassador of Japan to Iraq, visited our site Kish in February 2023. We hope that the situation will improve and we will be able to excavate again.

[Postscript]

There were four contributions in this issue. The Charmo (Jarmo) excavation report by six authors, including Professor Emeritus Akira Tsuneki of the University of Tsukuba, is extremely interesting because it reveals unique objects that give us an idea of life and religion in the Neolithic period. I think the other three contributions are also appropriate for this journal, *al-Rāfidān*. I would like to thank all the authors. Also, I would like to thank Ms. Ayano Takasaka, who is in charge of Letterpress, who always responds to various requests, and Ms. Tomoe Hazeyama, who supports me with administrative procedures.

(K. Oguchi)

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