

| Kuwaiti-Polish Archaeological Research in Northern Kuwait in 2007–2012

Since 2007, the National Museum in Warsaw has been participating in archaeological research in northern Kuwait as part of its cooperation with the Polish Centre of Mediterranean Archaeology of the University of Warsaw.¹ The research takes place in the region of As-Sabbiya, where a large-scale operation involving the construction of a new city is underway. Infrastructural developments, such as the building of new roads, pose considerable threat to archaeological sites in the affected region. Therefore, the research program undertaken by the Department of Antiquities and Museums of the State of Kuwait and the PCMA is, an archaeological rescue project financed by the Kuwaiti side.²

The study area is a desert steppe plain crisscrossed with periodical river valleys (*wadis*). On the west and north it is bordered by the hill range of Jal az-Zor, while on the east and south it reaches the coast of Kuwait Bay. The terrain descends gradually towards the coast in a succession of rocky terraces of sandstone and beach rock, ending in a vast, sandy coastal plain (*sabkha*). The rocks served as building material for the inhabitants of the area (**fig. 1**).³

A characteristic feature of As-Sabbiya landscape is the presence of numerous stone burial mounds, often occurring in concentrations, which may be accompanied by other stone structures in the shape of low platforms. Most of the graves were robbed out some time in the past, so but a few have preserved grave goods that may provide evidence needed to hypothesize on the graves' dating or on the burial rites that may have been performed there. Just a handful of the graves were thus dated to the end of the third and the beginning of the second millennium BC. The harsh climatic conditions and lack of arable land did not encourage settlement in the region, and the only traces of ancient habitation discovered so far date back to the Chalcolithic Ubaid culture (sixth–fifth millennium BC). However, none of the investigated burial mounds could be securely attributed to that period. It should be pointed out that, beginning with the third millennium BC, intensive settlement developed on the island of Failaka in Kuwait Bay, where – conversely – no cemetery of the same period has been found despite intensive research. It is therefore possible that the graves in the As-Sabbiya belonged to the inhabitants of Failaka. Another possibility is their attribution to nomadic tribes inhabiting or occasionally passing through the region.

¹ The present author represents the National Museum in Warsaw in this project.

² The Polish side of the project is directed by Professor Piotr Bieliński, while the Kuwaiti side is represented by the Director of the Department of Antiquities and Museums, Dr Sultan ad-Duweish.

³ Hubert Kiersnowski, "As-Sabbiya, Geological and Geomorphological Report," in *Kuwaiti-Polish Archaeological Investigations in Northern Kuwait. As-Sabbiya 2007–2010*, Łukasz Rutkowski, ed. (Warsaw–Al-Jahra, 2011), pp. 8–9; id., "Geomorphological Survey in the Bahra Area" (unpublished report from the 2010 Autumn season).

Only by studying a larger number of these graves can the answers to at least some of these questions be found.

Of modern date is a complex of well-cisterns, built by nomads grazing their camel herds in this region. The wells could also have been used by caravans travelling north, to Mesopotamia, or to the south of the Arabian Peninsula.

First archaeological surveys of this area were conducted by Kuwaiti archaeologists in 1984 and again in 1997–1998, locating 30 settlements, most of which were dated to the Islamic period, and one – to the Ubaid period (H 3). In 1998–2004, a Kuwaiti-British archaeological expedition worked in the region, conducting excavations at the site of H 3⁴ and surveying the area.⁵ Moreover, in 2004–09 archaeological expeditions from countries united within the Cooperation Council for the Arab States of the Gulf investigated several stone features and burial mounds.⁶

The Kuwaiti-Polish research started in 2007, with both excavations (burial mounds in the Mugheira sub-region of As-Sabbiya) and surveys (registering burial mounds' concentrations and settlement remains in other regions of the As-Sabbiya). In subsequent years, consistent with new proposals from the Kuwaiti hosts, the scope of the work was broadened: in 2008 it involved excavations at the SM 12 site in the Muheita sub-region, and in the following year, also at SMQ 38, a settlement site from the Ubaid period in the Bahra sub-region (**fig. 2**).⁷ This resulted in a decision to divide the expedition into two missions – one that would focus on settlement sites, and the other that would continue surveying the As-Sabbiya, exploring the discovered graves and involve a sub-project for the study of Islamic cistern-wells. The present author supervised excavations of burial mound SMQ 30, stone platform SMQ 37, cistern-well SM 12 and SMQ 38, in the central part of the settlement (square x-i-10 and its surroundings). As these sites give a thorough overview of the archaeological features present in the As-Sabbiya, they will be discussed in detail below.

Stone Structures in the Mugheira Cemetery

In the sub-region of Mugheira, a number of stone structures were scattered throughout a 1 km long stretch of land at the south-western edge of the second rocky terrace. They included 12 burial mounds and a few elongated, rectangular platforms, all built of local red sandstone.⁸

⁴ Robert H. Carter, Harriet Crawford, *Maritime Interactions in the Arabian Neolithic: The Evidence from H 3, As-Sabiyah, an Ubaid-related Site in Kuwait* (Harvard-Boston, 2010). American School of Prehistoric Research Monographs.

⁵ Robert H. Carter, "Appendix I. Other Fieldwork in As-Sabiyah and Beyond," in Carter, Crawford, *op. cit.*, pp. 211–57.

⁶ Preliminary results of these investigations were published in Arabic: Sultan ad-Duweish, Hamid al-Mutajri, *Nataij al-tankib fi talal Madafin al-Sabiyah* [Results of archaeological excavations of burial mounds in al-Sabiyah] (Kuwait, 2006).

⁷ Both sites were discovered during surveys conducted by Dr Sultan ad-Duweish.

⁸ For a summary description of stone structures from the region of As-Sabbiya-Mugheira, see Łukasz Rutkowski, "Tumuli Graves and Other Stone Structures," in *Kuwaiti-Polish...*, *op. cit.*, pp. 10–17; *id.*, "Archaeological survey in the eastern As-Sabbiya (north coast of Kuwait Bay), seasons 2009–2010," *Polish Archaeology in the Mediterranean (Research 2010)*, 22 (2013), pp. 461–74 and *id.*, "Tumuli graves and desert wells in the As-Sabbiya. Preliminary excavation report on the spring season in 2010," *ibid.*, pp. 475–99.

Stone Burial Mound SMQ 30⁹

Grave SMQ 30 was located in the middle of the above-mentioned line of stone structures. This rather small cairn (c. 70 cm high, with diameter of 6 m) was, for the greater part, an over-ground structure. Most of its structural elements are mirrored in other graves found in the different sub-regions of the As-Sabbiya (fig. 3). In its center, there was an oval grave chamber (measuring 1.2 m on the east–west axis and 1.3 m on the north–south one), built on top of large, stone slabs. The c. 30–40 cm high wall of the chamber was built of irregular, thin sandstone slabs set without mortar. The chamber was surrounded at a distance of c. 40–50 cm by a ring of large stones, with the intervening space closely packed with stones of various sizes. This whole core, including a filled-in grave chamber, was covered with a stone coating, the edge of which reached about 1 m beyond the stone ring.

As most of the graves in the region, SMQ 30 was robbed in the past, but the robbers' shaft disturbed only about 1/3 of the chamber fill, leaving undisturbed deposits in the western and northern part of the chamber. They yielded fragments of human leg and arm bones lying in anatomical order just over the stone paving. The sandy fill of the robbers' shaft contained many small pieces of bone and beads. Anthropological analyses of the human remains indicated that two adult persons had been buried in the grave, of which at least one was a woman.¹⁰ The SMQ 30 grave was unique for the wealth of personal ornaments (mostly beads) it contained. Of the 600 items, 240 were found inside the burial chamber and 360 lay scattered between the stones of the coating (fig. 4). Although the beads were found in situ – in the sandy fill of the undisturbed part of the chamber – they did not form any alignments suggestive of their having been part of necklaces or bracelets, or any sets that may have been sewn to a robe. The documented spatial distribution of the beads was distinctly asymmetrical. Upon analysis, it proved that the beads must have been strewn over the grave before the chamber was filled in by a person, or persons, standing west of it. So far, it is one of just two known examples of such a funerary ceremony.¹¹

Most of the ornaments were beads made of shell and mother-of-pearl. One distinct group consists of whole tusk shells (*Dentalidae*), immature cone snails (*Conidae*) and striped whelks (*Engina Mendicaria*) perforated to obtain a suspension hole. Another group comprised perforated sequins, plaques and pendants trimmed from pieces of various mollusk shells (*Veneridae*, *Spondylus* and *Pinctada*) (fig. 5). Both in form and technique of execution they resemble objects known from the Ubaid-related site of H 3, in Kuwait, and from Neolithic sites in the southern Gulf.¹² Lower whorls from spires of *Conidae* and *Strombidae* shells were used for making rings and small ring beads, while trimmed whorl segments served for the manufacture of tubular

⁹ For an extensive analysis of the grave see Andrzej Reiche, "Tumulus Grave SMQ 30 in As-Sabbiya – Mugheira (northern Kuwait). A report on the 2007–2008 investigations," *Polish Archaeology in the Mediterranean (Research 2010)*, 22 (2013), pp. 510–23.

¹⁰ Arkadiusz Sołtysiak, "Short Fieldwork Report: As-Sabiyah and Al-Khuwaysat (Kuwait), seasons 2007–2008" [online], *Bioarchaeology of the Near East*, 2 (2008), [retrieved: 10 June 2014], p. 104, at: <<http://www.anthropology.uw.edu.pl/02/bne-02-10.pdf>>.

¹¹ The other example, with a slightly less rich assemblage (c. 400 beads), was also found in the As-Sabbiya region, in grave SB 100 (Dr Łukasz Rutkowski, personal communication).

¹² Carter, Crawford, op. cit., pp. 71–77, fig. 43.

beads.¹³ Stone beads were less numerous, with micro-beads of steatite and chlorite being the most abundant. The most valuable ornaments in the assemblage, indicating a high social status of the deceased, were two pierced pearls, five beads of lapis-lazuli, a stone highly prized in antiquity, and a large, round pendant made of mother-of-pearl, decorated with carved single or concentric circles with a central dot (**fig. 6**).

The ornaments discovered in the grave allow for an attempt at establishing the date of the grave's construction. The youngest element in the assemblage is the mother-of-pearl pendant; the motif adorning it appeared in the Gulf region only in the so-called Dilmun period, that is the end of the third millennium BC through mid-second millennium BC. This object sets the date for the erection of the whole grave.¹⁴ Ornaments made of shell and mother-of-pearl as well as the pearls have closest parallels in material dated to the sixth and fifth millennia BC discovered at sites in the As-Sabbiya¹⁵ and in the south-western part of the Arabian Peninsula. This may be proof of a very long-lived tradition of shell ornaments' production in the region, but it is equally possible that these ornaments had been robbed out from older graves.

Stone Platform SMQ 37

Another group of archaeological features are 12 stone structures in the form of long, flat platforms, roughly rectangular in plan but with oval shorter sides. The platforms have various alignments, with most following a northwest-southeast axis and none oriented to the northeast-southwest. Their function and dating remain obscure, but their occurrence in the vicinity of burial mounds hints at their association with some unknown burial rites.¹⁶ One of the best preserved platforms was SMQ 37 (**figs 7-8**), located northeast of burial mound SMQ 35A. It was aligned on a northwest-southeast axis, measured 8 m in length and 2 m in width and reached 40 cm in height, although it protruded only 20 cm above the surrounding ground. About 2/3 of its circumference was faced with rather thick sandstone slabs set vertically and partly sunk into the ground, while the remaining portion (that is the southern part of its eastern wall) was constructed of horizontal slabs. This structural detail seems to suggest the presence of an entrance in the southeastern part, yet this is not consistent with evidence from other investigated platforms. The inside of the platform was filled with two or three layers of irregularly set and variously sized pieces of sandstone.

Cistern-Well SM 12

The site of SM 12, located on the lowest terrace in the Muheita sub-region, about 3 km west of the Mugheira cemetery, was of a completely different character (**fig. 9**). A cistern was discovered

¹³ A workshop producing the tubular beads was discovered nearby, in an Ubaid-period settlement at the site of Bahra 1 (see below), but it must be kept in mind that a vast assemblage of identical beads was also found in Hasanlu, in Iran, in level IIB dated to the first half of the first millennium BC (David S. Reese, "Treasures from the Sea. Shells and Shell Ornaments from Hasanlu IVB," *Expedition*, 31/2-3 (1989), p. 84).

¹⁴ Reiche, "Tumulus Grave..." op. cit., p. 538.

¹⁵ Perforated pearls are known in the region beginning with the Ubaid period, as attested by a pearl found in a workshop at the site of H 3 (Carter, Crawford, op. cit., p. 76, fig. 4.16). Also plaques with two holes trimmed from bicolored *Spondylus* shell are known mainly from Ubaid-period sites in Kuwait (ibid., pp. 75-76, figs 4.3; 30-33; Andrzej Reiche, "Small Finds from Bahra 1, an Ubaid-Period Settlement," in *Kuwaiti-Polish...*, op. cit., p. 48, fig. on top).

¹⁶ Rutkowski, "Tumuli Graves and..." op. cit., pp. 16-17; id., "Archaeological survey..." op. cit., pp. 469-71.

there in a shallow depression within an irregular oval surrounded by a low and narrow (c. 30 × 40 cm) sandstone wall, which served as footing for clay superstructure. The base of the wall lay c. 50 cm above the top of the cistern's steening. Approach to the cistern, flanked with two pillars of sandstone blocks, was probably located in the northeastern part of the perimeter wall, as indicated by a stone tumble discovered there. In the southern part of the perimeter wall, a 4 m long and 60 cm wide bench covered in red clay was built against its inner face. Three stone steps led up to it from the steening of the cistern-well, which was 3.30 m deep and had an inner diameter of 3.20 m at the top and just 1.35 m by the bottom, because its wall, made of closely-fitted, large stone blocks, tapered downwards.

The cistern had at least two periods of use. The first may have ended due to the drowning of a dog, the skeleton of which was found in a layer of damp mud overlying the bedrock bottom of the cistern.¹⁷ The mud was superimposed by a layer of large stones covering most of the cistern's bottom. The stones, in turn, were covered by a thin layer of wind-blown silt and sand, pointing to a short period of abandonment. Before renewed use, the shaft had been filled with a 80 cm thick layer of sandstone detritus (**fig. 10**). Remains of the second usage phase took on the form of a c. 1 cm thick layer of firm, compacted mud. Above it, about 2 m over the bottom of the well, an irregular, slanting stone tumble rested against the southeastern part of the wall. It was overlain by several dozens of undisturbed layers of silt and windblown sand interspersed with thin deposits of compacted mud. The character of these accumulations proves that after the second phase of the cistern's use no attempt was made to make it functional again. Finds that would allow to set a date to the cistern's use are lacking. Similarly constructed cisterns investigated in the Dubai sub-region of the As-Sabbiya were dated to the Sassanian or Early Islamic period based on technological features.¹⁸

Bahra 1 – an Ubaid-Period Settlement¹⁹

The settlement of Bahra 1, consisting of two sectors designated as SBH 38 and SBH 35, is located on the second terrace, about 7 km north of a small Ubaid-period settlement at the site of H 3. The latter lies on a low rocky outcrop approximately 3 km from the present northern coast of Kuwait Bay. However, in the Ubaid period H 3 was located on an island and the reconstructed shoreline of that age stretched just about three or four kilometers from Bahra 1.

The architectural remains of the Bahra 1 settlement rest at the foot of a low sandstone ridge and extend over the distance of c. 170 m (**fig. 11**). Its western part, that is sector SBH 38, occupies a patch of flat land gently sloping to the south and stretching in a c. 25 m wide band from the northwest to the southeast at the foot of the ridge. The eastern part of the settlement, sector SBH 35, hugs the southeastern part of the ridge, partly climbing on top of a solid-rock outcrop. Although there are some differences in the character of the architecture in the two sectors, both date to the same phase of the Ubaid period, identified based on the collected pottery as Ubaid 2/3 (end of the sixth – beginning of the fifth millennium BC).²⁰

¹⁷ Analysis of the faunal remains was made by Katarzyna Hryniewiecka (unpublished report from the 2010 Spring season).

¹⁸ Franciszek Pawlicki, "Desert Wells and Water Cisterns," in *Kuwaiti-Polish...*, op. cit., pp. 24–31. Rutkowski, "Tumuli graves and desert wells..." op. cit., pp. 495–97.

¹⁹ Piotr Bieliński, "Bahra 1: A Prehistoric Settlement," in *Kuwaiti-Polish...*, op. cit., pp. 32–37.

²⁰ Anna Smogorzewska, "Pottery from the Settlement Bahra 1," in *Kuwaiti-Polish...*, op. cit., p. 38.

It should be stressed here, that the Chalcolithic Ubaid culture played an important role in the final stages of Mesopotamian prehistory. It was shaped in southern Mesopotamia (Iraq) at the end of the sixth millennium BC, and by the fifth millennium BC it encompassed not only all of Mesopotamia, but also neighboring regions, i.a., the shores of the Arabian Peninsula along the Gulf. Its most characteristic feature is its distinctive pottery, made on a tournette (slow potter's wheel) and decorated with simple compositions of geometric motifs painted with a iron oxide paint, which, upon firing, produced brown through black patterns against a light-buff or greenish-buff background of the clay. The term "Ubaid pottery" derives from the name of a site in southern Iraq, Tell al-Ubaid, where it was first discovered in 1919.²¹ It was believed to have been connected with an unknown ethnic element inhabiting southern Mesopotamia, so the term "Ubaid" came to be used not only with reference to the specific painted pottery ware but also to an archaeological culture and a period in Mesopotamian chronology. In 1960, a division of the Ubaid period into four phases was proposed, based on pottery analyses.²² Later research led to complementing the original divisions with additional phases; Ubaid 0 (beginning of the sixth millennium BC)²³ and Ubaid 5 (beginning of the fifth millennium BC).²⁴ Apart from the painted pottery, there are some other features characteristic for the Ubaid material culture, i.a., small bowls on a cone-shaped handle and clay body ornaments shaped as pegs or flanged discs (labrets). There are also houses built of mud bricks on a tripartite rectangular plan, with a central courtyard. Civilization advancements related to the Ubaid culture, such as irrigation, construction of large settlements with special cult buildings as well as smelting and casting of copper, were adapted and creatively developed by the Sumerians who arrived in southern Mesopotamia in the fourth millennium BC. Presently, the term "Ubaid" is used to refer to a number of cultural developments common for a vast area of the ancient Near East, from the west coast of the Gulf to southern Anatolia, in the sixth and fifth millennium BC, emphasizing their local characteristics.²⁵

Investigations in the Bahra 1 settlement started in the most exposed part of SBH 38, at a spot where long stone alignments were visible on the surface. A 300 m² trench was set up within four are squares of a previously laid out topographic grid. When the surface had been cleaned of windswept sand, two architectural units, each consisting of a number of rooms, could be discerned. The larger one was designated as House 1, with House 2 neighboring it on the north. However, the apparent building by agglutination and lack of clear passages between rooms make this division tentative. In 2011, the surface of the site west of the main trench was cleaned over a considerable area, revealing more architectural units. They are of

²¹ Henry R. Hall, C. Leonard Woolley, *Al-'Ubaid* (Oxford, 1927). *Ur Excavations*, 1.

²² Joan Oates, "Ur and Eridu, the Prehistory," *Iraq*, 22 (1960), pp. 32-50.

²³ Marc Lebeau, "Aperçu de la céramique de la phase 'Oueil (Obeid 0)," in *Larsa (10^e campagne, 1983) et 'Oueili (4^e campagne, 1983) : rapport préliminaire*, Jean-Luc Huot, ed. (Paris, 1987), pp. 95-120. *Recherche sur les grandes civilisations*, Mémoire 73.

²⁴ Joan Oates, "Ubaid Mesopotamia Reconsidered," in *The Hilly Flanks and Beyond: Essays on the Prehistory of Southwestern Asia presented to Robert J. Braidwood*, T. Cuyler Young, Jr., Philip E.L. Smith and Peder Mortensen, eds (Chicago, 1983), p. 263. *Studies in Ancient Oriental Civilization*, 36.

²⁵ The problem was discussed during an international conference "The Ubaid Expansion? Cultural Meaning, Identity and Lead-up to Urbanism," see *Beyond the Ubaid: Transformation and Integration in the Late Prehistoric Societies of the Middle East. Papers from the International Workshop held at Grey College, University of Durham, 20-22 April 2006*, Robert A. Carter, Graham Philip, eds (Chicago, 2010). *Studies in Ancient Oriental Civilization*, 63.

much less regular plans and less densely spaced than Houses 1 and 2, but seem also to have been built by agglutination. Of special interest was a concentration of hearths at the western limit of the site, as it may point to functional differentiation of various parts of the settlement. In 2012, regular exploration began in sector SBH 35, in the eastern part of the site. Still, at the present state of research, the fullest set of data is available for House 1.

House 1

In the development of House 1, two main phases could be distinguished, each further divided into a few stages (**fig. 12**). In the first phase, the unit consisted of three rectangular rooms, two of which were small (3×2.6 m and 0.9×2.5 m) and a one larger (5.8×3.1 m). Wall bases of the first two rooms were built of a single row of vertically set sandstone slabs, sunk into the ground by c. 20–25 cm. A large, long room, rectangular in plan, was added to the eastern wall of the second small room, its walls founded flush with the older room's usage level. The long room's wall bases consisted of four courses of broken sandstones set in a single row. The room had two entrances, one by the western end of the southern wall, the other in the middle of the wall connecting it with the smaller room, the inside of which (in its phase 1 form), has not been excavated yet. In a second stage of the same phase, the room's floor was fully covered with large, irregular sandstone slabs. In the middle of the floor, two regular sandstone slabs were set, with closely fitting shorter sides and leveled tops. They formed a low podium measuring c. 100×40 cm, and c. 20 cm high (**fig. 13**). Numerous ground and pecked stone tools, mostly flint or chert drills, and vast quantities of failed tubular beads made of *Strombus* shells discarded at various production stages,²⁶ provide direct evidence that the room functioned as a workshop. In this context, the stone platform may be interpreted as a working table. The present stage of research and poor state of preservation of the southern part of House 1 do not allow for valid conclusions regarding the presence of the oldest architectural phase further south.

The second phase brought about substantial change in the functioning and inner divisions of House 1. On the west and south, the house was enlarged by the addition of several rectangular rooms. After that, House 1 consisted of at least 13 rooms, arranged in three parallel rows, and reached 11.5 m in length and 8.5 m in width. The plan came to resemble, to a certain extent, the so-called tripartite plan typical for Ubaid architecture in Mesopotamia. At this point, the large workshop room was divided into two even parts. However, the two newly-created rooms had smaller surface area than their predecessor, because they received new northern walls, which ran c. 40 cm south of the phase 1 workshop wall.

The eastern room was paved with another layer of stone slabs, but it no longer had access to the working table, the eastern part of which was incorporated into the wall dividing the two new rooms. A clay spindle whorl was found in this room, indicating that a weaving workshop may have been located there.

The western room was not paved anew, but had a floor of beaten, sandy earth. The accessible half of the working table was heightened by the addition of another stone slab, and the room retained its workshop function, as indicated by the discovery of further failed tubular shell beads and flint or chert drills.

²⁶ The finds from the room included over 100 drills and several dozens of failed tubular shell beads, amounting to almost half of all such discards found at the site.

The extension of the house in this phase involved not only the building of new rooms but also laying out of new stone wall bases on top of the walls of the older phase. This may indicate that the operation was connected with rebuilding of the settlement, partly on a new, plan, after a time of abandonment of unknown duration. Traces of similar reconstructions were observed also in a few places in House 2.

The last modification within House 1 involved reducing the size of the bead workshop almost by half, by moving its southern wall to the north, up to the edge of the working table, thus creating a large, almost square room with a stone-paved floor south of it.

In the western part of the house, which was also added in the second phase, a group of four large storage vessels was brought to light. The three jars and a bowl were imports from Mesopotamia. In a narrow room just east of the space with the vessels, a large, square ceramic basin of the same origin was found in pieces. The vessels belonged to the youngest usage phase of the settlement. Unfortunately, no remains were preserved that might indicate their function, but they can be assumed to have been used for storing food.

In a large, rectangular room uncovered in the southeastern part of House 1, just the southern part of the floor was paved with stone slabs. An oval stone-lined hearth by the pavement's northern edge might be a clue indicating a residential character of this part of the house.

Finds from the Bahra 1 Settlement

The settlement yielded large quantities of pottery fragments, both decorated and plain²⁷ (fig. 14). Among the attested forms, various types of bowls and plates were the most frequent, but cups and jars were also present, as were fragments of storage vessels. The painted decoration adorning many of the potsherds with motifs of triangles, rhombi, dense oblique grid, and straight or wavy lines set into bands, is typical of early Ubaid period (Ubaid 2/3; late sixth – early fifth millennium BC). The firing process gave the paint various shades of brown which contrasted against the light (greenish to buff) background. These vessels were imported from Mesopotamia. In the discovered assemblage there are also vessels made of red clay, most of them fragments of pots or bowls, which are regarded as kitchen ware, used for the preparation of food. They were fired at low temperatures, as attested by the black core visible in their sections. Vessels of this type are believed to be local products, typical for the Arabian Peninsula since the late Neolithic period. Many have imprints of plaited mats upon which they were standing during forming on the bottom of their base.

Among the numerous small finds,²⁸ special attention should be drawn to fragments of small bowls set on a vertical, conical handle, made of red, poorly-fired clay (fig. 15). Although such objects are characteristic for Ubaid sites, their function escapes identification. A unique find is a large decorated spindle whorl made of greenish clay, typical for imports from Mesopotamia (fig. 16). Among the most common objects, found throughout the whole site, are small and light conical rings made of local clay, which come in a large variety of sizes (fig. 17). Also in this case, the purpose of the objects is, so far, unknown. Among other finds, there was a fair number of locally-made objects, interpreted as lip and ear ornaments – shaped as conical pegs or flanged discs, made of fired clay – which have also been attested at most

²⁷ Smogorzewska, "Pottery from...", op. cit., pp. 38–45; ead., "Pottery from Bahra 1 (Kuwait). New evidence for the presence of Ubaid culture in the Gulf," *Polish Archaeology in the Mediterranean (Research 2010)*, 22 (2013), pp. 555–68.

²⁸ Reiche, "Small Finds...", op. cit., pp. 46–49.

Ubaid sites (**fig. 18**). By far the most common finds were shells of two marine snail species: *Strombus persicus* (known also as *Conomurex persicus*) and *Lunella coronata*, along with bivalve shells (*Veneridae*), which had been brought to the settlement as food. However, the *Strombus* and *Veneridae* shells could also have been used for making beads and other ornaments.

The inhabitants of Bahra 1 specialized in the production of tubular shell beads made of *Strombus persicus* shells, as attested by the discovery in House 1 of a workshop of this kind of beads, as well as by numerous failed beads (**fig. 19**), stone drills and shell wastes from fabrication found in both houses. The bead's manufacture required much skill and had a high failure rate. As a semi-product for a tubular shell bead was used a curved segment cut-out from the lower whorl of the spire. After a preliminary faceting of the surface, the segment was perforated along its longitudinal axis from both ends with flint or chert drills (**fig. 20**). This was one of the riskiest phases of the work, resulting in the largest number of damaged examples. Next, the segment was abraded in order to achieve a straight tube, and then the bead was "calibrated" on a sandstone plate with 5–6 mm wide grooves (**fig. 21**). Eventually, the bead was polished.

To date, about a hundred failed tubular shell beads, discarded at various production stages, have been found in the settlement, which allowed for the reconstruction of the production process. It is the first identified Ubaid-period workshop specialized in the production of tubular beads from *Strombus* shells.²⁹

A considerable number of ground and pecked stone tools was also discovered in the settlement; most of them were associated with bead production. Notable among them is the assemblage of over 100 drills (both whole and fragmentarily preserved) found in the tubular beads-producing workshop. What is remarkable about the whole tools' collection is an almost complete lack of tools used for the preparation of food.³⁰ This raises the question, if this anomaly could be connected with the special character of Houses 1 and 2 or if there is another reason behind it.

Further research at the Bahra 1 site will aim at elucidating the spatial and functional organization of the site, i.e., by uncovering architectural remains in other parts of the site. Palaeoenvironmental studies may help to clarify some crucial issues, such as the sources of fresh water for the settlement. An attempt must be made at explaining the role of the settlement in the Ubaid period, and at understanding the link between its inhabitants and southern Mesopotamia as well as finding the reason for the site's abandonment.

Translated by Agnieszka Szymczak

²⁹ Similar tubular beads were produced in the fifth millennium BC on the Akab Island in the United Arab Emirates, but they were made of the columella of *Murcidae* shells see Vincent Charpentier, Sophie Méry, "A Neolithic settlement near the Strait of Hormuz: Akab Island, United Arab Emirates," *Proceedings of the Seminar for Arabian Studies*, 38 (2008), p. 130.

³⁰ Professor Stefan K. Kozłowski, personal communication.