

AL-KHIDR ON FAILAKA ISLAND: PRELIMINARY RESULTS OF THE FIELDWORKS AT A DILMUN CULTURE SETTLEMENT IN KUWAIT

FAILAKA ADASI AL-KHIDR YERLEŞMESİ:
KUVEYT'TE DILMUN KÜLTÜRÜNE AİT
KAZININ İLK SONUÇLARI

Peter BARTA*
Lucia BENEDIKOVÁ **
Mária HAJNALOVÁ***
Zora MIKLÍKOVÁ****
Tereza BELANOVÁ****
A. H. SHEHAB*****

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Bu yazı, Kuveyt Emirlığı, Failaka adasındaki Al-Khidr yerleşmesinde, Kuveyt-Slovak Arkeoloji Grubu'nun (KSAM) üç kazı mevsimi boyunca yürüttüğü çalışmalarını kapsamaktadır. 2004, 2006, 2007 yılları kazı çalışmaları sonucunda İlk ve Orta Dilmun (MÖ 2000-1500) kültürlerine ait çanak-çömlek, Dilmun damga mühürleri, maden eserler, yontma taş ve sürtme taş aletlerden oluşan bir buluntu topluluğunun yanı sıra, zift (bitüm) kullanımını yansıtan bulgular ortaya çıkmıştır. O dönemin doğal çevre ortamını anlamamızı sağlayan hayvan kemikleri, bu bağlamda Kuveyt'ten bilinen en büyük arkeolojik hayvan kemiği koleksiyonunu oluşturmaktadır. Failaka adasının kuzeyinde yer alan KH-1 höyüğü, aynı adanın güneyinde, anıtsal yapıları ile bilinen diğer Dilmun yerleşimlerinden çok farklı, küçük odalı taş mimarisi ile Dilmun kültürüne ilişkin bilgimizin çeşitlenmesini sağlamıştır. Kazı sonuçları üzerinde yaptığımız ilk değerlendirme, buradaki yerleşim sürecinin birbirinin ardılı mevsimlik basit balıkçı konak yerleri ile daha önemli sabit yerleşimlerden oluştuğunu göstermiştir.

*Chronometry Consulting, Dendrochronological Laboratory Bratislava, P.O. Box 83, Karloveská 34, 840 00 Bratislava 4, Slovak Republic. peterbarta@chello.sk

**Archaeological Institute, Slovak Academy of Sciences, Akademická 2, 949 21 Nitra, Slovak Republic. luciabenedikova@yahoo.com

***Department of Archaeology, Faculty of Arts, Constantine the Philosopher University, Štefánikova 67, 949 74 Nitra, Slovak Republic. mhajnalova@ukf.sk

****Archaeological Institute, Slovak Academy of Sciences, Akademická 2, 949 21 Nitra, Slovak Republic. zora.miklikova@gmail.com

****Archaeological Institute, Slovak Academy of Sciences, Akademická 2, 949 21 Nitra, Slovak Republic. tereza.belanova@gmail.com

*****National Council for Culture, Arts and Letters, State of Kuwait, P.O. Box 23996, 13061 State of Kuwait. knm2000@hotmail.com

INTRODUCTION

The Kuwaiti-Slovak Archaeological Mission (KSAM) is a joint project of the National Council of Culture, Arts and Letters, State of Kuwait, and the Institute of Archaeology, Slovak Academy of Sciences. KSAM was established in 2004 and originated from an idea put forward by Shehab A. H. Shehab, Director of the Department of Museums and Antiquities, NCCAL. The main project developed and directed by Lucia Benediková and Peter Barta is an interdisciplinary research endeavor focused on the endangered Dilmun settlement of Al-Khidr on Failaka Island.¹ The site dates to the first half of the 2nd millennium BC. Excavations at Al-Khidr in 2004, 2006, and 2007 have exposed a part of the settlement, with a broad variety of artefacts including 52 Dilmun stamp seals and one cylinder seal of Ur III date.

THE GEOGRAPHY AND THE FIELDWORK PROJECT

Failaka Island is the second largest offshore island of Kuwait. It is situated in the north of the Gulf in the entrance of the Kuwait Bay, 12 to 17 km off mainland Kuwait (Ras As-Sabbiya and Ras Al-Ardh in Salmiya) and some 110 km south-southwest of the estuary of Shatt Al-Arab. The northwest-southeast orientated flat island with elevations up to 7.5 m a.s.l. is of elongated shape, approximately 13.8 km long and 1.8 to 6.5 km wide. Geologically, Failaka is an extended bank of Khor As-Sabbiya to the southeast, which is a conglomerate of sand and sandstone of a chalky-lime formation of the Neocene period with secondary pebbles (Pattitucci, Uggeri 1984: 10, 12, 414). In the 1950s and 1960s Failaka used to be supplied with freshwater from its own shallow wells (Bibby 1996, 145). At present, the island has sources of brackish and reportedly also of freshwater.

Al-Khidr is an area in northwestern Failaka,

south of a small promontory where a shrine that gave the area its name stood (Maqam Al-Khidr: Pattitucci, Uggeri 1984, 90; Bibby 1996, 153). The Bronze Age occupation at Al-Khidr has been known since 1958 (Bibby 1996: 154) but until 2004 the site had not been systematically investigated. The Dilmun settlement activity is indicated by three elevated spots, which yielded typical red-ridged Dilmun ware. The mound Al-Khidr 1 (KH-1) runs along the shore, Al-Khidr 2 (KH-2) and Al-Khidr 3 (KH-3) fenced within a recent Islamic cemetery are regularly shaped knolls (Fig. 1). Besides, there are additional locales within the Islamic cemetery that yielded Bronze Age archaeological material.

Archaeological fieldwork at Al-Khidr encompassed an archaeological and a geophysical survey (dipole electromagnetic profiling, DEMP, ground penetrating radar, GPR), soundings, and square exposures in a 10 by 10 m grid system. To investigate the extent of the Bronze Age habitation 15 soundings were opened in KH-1, while the area of the Islamic cemetery with KH-2 and KH-3 was investigated by archaeological and geophysical survey. Hand retrieval, dry sieving and water flotation were employed for the retrieval of the finds. Understandingly, the latter was of vital importance to the recovery of palaeoenvironmental evidence (otoliths, fish bones, pearls, date stones and grave pips) and small-sized artefacts (debitage and metals).

THE GENERAL STRATIGRAPHY AT AL-KHIDR

In general, the sequence at Al-Khidr is comprised of six major deposits:

Anthropogenic strata from the Early to Middle Bronze Age (Early to Middle Dilmun) and recent times (1970s-1980s)

Various loose-sand sediments

Sediment of alternating layers of pure shells and sandy-shelly strata

¹ Study of the palaeoenvironment undertaken by Mária Hajnalová (palaeoethnobotany) and Zora Miklíková (archaeozoology) has been a key element of the project. Mapping, survey, geophysics (Ján Tirpák) and GIS (Martin Bartík), paired with conservation, restoration and mass-tailored IT applications have been widely employed as well.

Hardened calcareous sandy deposit resembling pale grey sandstone. Calcareous sandstone or sand-rich limestone. Groundwater and water-saturated strata. The upper most layer of the stratigraphical sequence starts with cultural strata a top loose sandy sediments, sometimes with thick hardened calcareous sandy deposit, with a series of sand or sand/shell layers. The base of the sequence is characterized either by sandstone, limestone or sterile layers of sand, which continue below the groundwater table. Apart from anthropogenic deposits, Dilmun finds were recovered from also other types of deposits as well. Dilmun pottery, transported by bioturbation, was found in the sterile sand and shell strata, which was especially evident in the easternmost portion of KH-1 because of the impact of tidal movements on the coastline (south of KH-1 a major pottery fragment appeared in the sediment of shells and sand). Gravity and localized movement may explain the discovery of Dilmun sherds beneath the calcareous and sandy deposits west of the cemetery fence bordering the KH-3 mound.

DILMUN OCCUPATION OF KH-1

KH-1 is an inconspicuous, low mound stretching 150 m over a 30-40 m wide strip along the western shore of the same-named shallow bay. Remains of architecture spread across the surface of the flat mound are visible to the naked eye as stone alignments representing over-ground walls or shallow foundations. Prior to excavations in November 2004, the mound, only sparsely vegetated by grasses, was covered by sherds and fragments of stone, soapstone, and metal artefacts. The *in situ* remains of six typical intact Dilmun storage jars were visible on the surface as articulated rings situated in buildings and courtyards (Fig. 2). However, the spot had strong evidence for recent and medieval habitation, as well as evidence for military destruction (foxholes and iron splitters) severely transforming the Bronze Age contexts. The settlement was excavated using a 10 by 10 m grid system with baulks separating the opened squares.

Excavations exposed the northern, central and southern parts of KH-1 leaving the land in between untouched. By 2007, an area of 616 m² in total had been unearthed (Fig. 3).

Stratigraphic evidence based on the stone architecture and associated finds (pottery and stamp seals) suggests that the site has two or three distinct Early to Middle Dilmun occupation horizons. The uppermost horizon is represented by rectangular ground plans (Fig. 4). However, making sense of individual buildings is complicated by the massive rebuilding and refurbishment that the original structures have gone through (Fig. 5). The lowermost horizon is characterised by irregular and oval ground plans well preserved in the south and the north of the mound (Fig. 6, 7). The horizon with oval ground plans is from the uppermost horizon architectures separated by anthropic shell strata (Fig. 8) best preserved in the southern and central part of the mound. Their origin is probably connected to the massive shell processing, representing the middle occupation horizon at the site. The presence of shell deposits at various spots of the mound may also reflect secondary use of the shell-rich material associated with the uppermost horizon of architecture.

As mentioned above, the mound KH-1 yielded two types of Dilmun stone structures. The better retained masonries of the uppermost horizon are preserved up to 80 cm high, which contrasts significantly with the well preserved stonework in the southwest of Failaka (find-spots F3, F6). As seen both in the north and in the central area of KH-1, we are dealing with small rectangular spaces, possibly a part of a larger compound, with storage vessels sunken into the lime-plastered floor, which was preserved fragmentarily along the walls and in corners. The architecture is rich in finds, including substantial fragments of pottery, bitumen objects, metal and stone implements, and stamp seals. The stonework from undressed local lime or sandstone was built using bonding materials based on mixtures of crushed rocks and water, gypsum (Hložek,

Gregerová 2005) and bitumen, but dry stone techniques occur as well.

Refurbishment of interiors and adjacent spaces are well documented in the northern and central area of KH-1. Superimposed lime covered surfaces bordered by masonry were unearthed as well as renewed interior flooring and capstones of earlier storage jars. Excavations yielded an underlying occupational layer from which other storage jars were protruding. A fragment of masonry with a walled-up door opening was also uncovered (Fig. 9)

A good example of the second type of architectural remains (lowermost horizon) is a horse-shoe-shaped structure built using single row of stones organised with their flat surfaces upwards (Fig. 6).

The Dilmun settlement at Al-Khidr yielded a wide range of finds. Apart from the red-ridged ware and other pottery, 52 Dilmun stamp seals and a cylinder seal, metal objects, soapstone vessels fragments, knapped flint debitage and tools, bitumen fragments with basketry and cordage impressions, and some raw materials (e.g., sulphur, hematite) were recorded.

The Dilmun pottery from KH-1 represents a varied assemblage of hand-made and wheel-turned forms. Typical are red-ridged storage jars found *in situ*. Among smaller forms one finds jars, some with sieve-necks, as well as pots, bowls, plates, goblets, spouted pots, round footed plates with finger impressions, and strainers. Earthenware spindle-whorls and lids from sherds occur as well. Pottery, yellow to red in colour, is made from mineral and/or organic tempered paste. Outer surfaces, ridged or smooth, are often coated with red, pale and grey slip although painting occurs as well. Provisionally, the typological structure of the Al-Khidr pottery may be compared with material from find-spots F3 and F6 on Failaka (Højlund 1987), and assigned to the Early Dilmun and Middle Dilmun (Kassite) periods.

The circular Dilmun stamp seals are the most spectacular artefacts from Al-Khidr. Similar to Early Dilmun seals from Saar on Bahrain (Crawford 2001) or F3 and F6 on Failaka (Kjaerum 1983), the fifty-two stamp seals from Al-Khidr, of which most seem to be made from steatite, are circular in form. The side bearing decoration is flat while the dome-shaped reverse is drilled-through. The reverse is decorated with simple parallel incisions and four dot-and-circle ornaments. The obverse of the Al-Khidr Dilmun seals is engraved with narrative or abstract decoration. Depicted are finds human or divine figures, half-human-half-animal creatures, animal figures (gazelle, bull, scorpion, snake, etc.), and celestial bodies (sun, crescent, star). These figures are organized in scenes rendering, for instance, seated humans drinking or playing a four-string musical instrument, human and half-human figures standing above a podium accompanied with monkeys and birds (Fig. 10). The abstract designs represent simple decoration of parallel lines, cross-shaped linear design, hatched squares, and circular motifs, which appear in circular composition. Apart from the circular Dilmun stamp seals, a single cylinder stamp of Ur III date with inscription (Ab-Gina, sailor from a huge ship, the son of Ur-Abba; reading by Rahman) appeared (Fig. 11).

The metal objects from the Bronze Age deposits at KH-1 were heavily corroded and mostly severely fragmented. The assemblage consists of finished objects but a few incomplete products emerged as well. The Al-Khidr collection of metal objects, the majority of which may well represent copper (Sangmeister 2003; Heskell 2003; Weeks, Collerson 2005), is dominated by implements of thick wire and thin rods, while sheet and cast metal techniques are in minority. Most abundant are fish-hooks and awls. The fish-hooks typically with long shanks made from round or hammered rods are found all across the site. Together with palaeoenvironmental evidence (see *infra*) they are indicative of fishing. Both ends of the awls are usually pointed. A handful of them have retained simple bone han-

dles from bird and mammal bones. Copious amounts of shells at the site pose a question: whether the awls could have served to open the shells and remove the meat of bivalves and gastropods. Other metal artefacts represent two tanged arrowheads, needles, a pair of tweezers, and blades of knives and razors.

The settlement KH-1 has yielded a strong record of soapstone industry. Although steatite vessels occur here in large amounts, only very few survived as complete objects. Besides numerous fragments of globular bowls, few spouts, a cylindrical vessel, a small square bowl, a strainer fragment, and a knobbed lid appeared. Typically, the smooth outer surface of the fragments is decorated with incised rectilinear ornamentation and dot-and-circle motifs common in the Early and Middle Dilmun period (Fig. 12). Some steatite objects clearly suggest secondary utilisation (so-called polishers from steatite sherds). Tiny globular beads and pendants made of steatite were also recovered, while a biconical bead from carnelian and a quartz bead was found.

The chipped stone industry comprises both flint and non-flint artefacts. Intact or crudely shaped flint nodules, which may have been brought from the mainland (Selabikhat), cores with single and multiple platforms, finished tools, debris together with hammer-stones indicate on-site production. The finished knapped flint tools are rare. Preliminary studies indicate that the assemblage contains notches, denticulates, cutting tools, wedges and endscrapers. The non-flint industry is represented by choppers, chopping-tools, crushers and other heavy-duty tools knapped from quartz and quartz-rich rocks (pebbles).

Bitumen finds from Al-Khidr rank among the most abundant group of materials. Bitumen occurs as blackish solid substance of apparently varied nature according to added organic and mineral matters. There are two types of bitumen finds at the site. The first is represented by

portable artefacts, while the second by non-portable finds and bonding materials on stones as well as layers of bituminous matrix in the Dilmun strata. Among portable finds several types of objects occur. This includes, for instance, fragments of bitumen coated baskets, stamp seal impressions (sealings), fragments with impressions of cords and strings, construction coatings (bitumen with impressions of reeds, palm tree leaves and trunks, planks), coatings of house equipment and domestic items (e.g., spindle-whorls), pottery with bitumen coatings, jar stoppers and bungs for pottery repair, personal ornaments such as beads, and various bitumen lumps of unknown purpose (Figs. 13, 14, 15). The immovable bitumen remains are mostly represented by traces of bitumen bonding material in buildings. Furthermore, few bitumen lumps with barnacle encrustation may represent fragments of protection coating of a Dilmun boat (Connan et al. 2005: 21–66). Such interpretation would support hypothesis that the Al-Khidr Bay served as anchorage during the existence of the Dilmun settlement.

SUBSISTENCE AND ENVIRONMENT

During three excavation seasons of KSAM at KH-1 a large amount of animal remains, i.e. bones, a tooth, otoliths and shells, has been collected (Fig. 16). Despite the lack of detailed analyses some preliminary information relevant to the economy and environment of the Bronze Age settlement of Al-Khidr are already available. Preliminary assessments indicate that food production at the site was strongly dependent on marine resources. A similar subsistence strategy has been observed also at other sites along the Arabian Gulf coast (Beech 2004). The majority of animal bone remains retrieved from Al-Khidr comprised fish bones, clearly demonstrating the importance of fishing for the inhabitants. At least ten families of fishes and twelve species are present including requiem sharks (*Carcharhinidae*), sawfish (*Pristidae*), marine catfish (*Ariidae*), groupers (*Serranidae*), jacks/trevallies

(*Carangidae*), grunts (*Haemulidae*), emperors (*Lethrinidae*), seabream (*Sparidae*), parrotfish (*Scaridae*) and barracudas (*Sphyraenidae*). Large amounts of cormorant bones in some excavation areas indicate that this bird contributed significantly to diet of the inhabitants. The exploitation of sea turtles, swimming crabs and cuttlefish has been also recorded. Marine molluscs which appear in large quantities at the site probably made an important supplementary dietary contribution, as well as provided items such as pearls (Fig. 17) and other raw materials for making artefacts.

Apart from information on species identification, archaeozoological data also produces insights into the daily life of past societies, which could not be otherwise revealed. At Al-Khidr, a number of large fish were caught suggesting that fishing was carried out with a hook and line (Fig. 18). Such a picture is also corroborated by many metal fish-hooks found here. Analyses of otoliths, small calcareous structures inside the ear of fish (Fig. 19), carried out in cooperation with the fisheries biologist Dr Mohsen Al-Husaini from the Kuwaiti Institute for Scientific Research, have provided important information on seasonal activities at the site. Otoliths have an incremental growth structure which can provide important information on seasonality (Fig. 20). This work suggests that fishing took place mainly during the late spring and early summer, from April to June. Regarding terrestrial mammals, domestic species such as sheep (*Ovis aries*), goat (*Capra hircus*) and cattle (*Bos taurus*) occur. Animal husbandry, like nowadays, provided the inhabitants with both primary (meat, fat, bone, hide) and secondary products (milk, draught power). The remains of wild mammals are represented by the single find of a gazelle bone. Together with sporadic finds of gazelle and fox bones from the Dilmun settlement in south-west Failaka, this can suggest that some hunting may have been practiced.

In contrast with the relatively large amounts of animal remains, the plant macroremains collect-

ed from 869 archaeobotanical samples, analysed and studied during 2004-2007 fieldworks, are strikingly sparse. Charred wild plants represent 60 seeds, which due to sample contamination by identified modern intrusions (glass, tin foil) are not necessarily associated with Bronze Age contexts. As for crops, two charred grains of barley (cf. *Hordeum* sp.), and a single charred grain of wild millet (*Panicum turgidum*), the predecessor of broomcorn millet and a common species of present-day coastal habitats of Failaka, were detected. Date palms (*Phoenix dactylifera*) are indicated by charred stones and their impressions in bituminous mixtures and pottery, which also bear evidence of date palm wood and leaves. Similar unidentified species of reeds (*Phragmites* sp. or *Arundo* sp.) have been detected in bituminous material as well.

Like other seashore archaeological sites in the Gulf, conditions for the preservation of plant macroremains at KH-1 on Failaka seem to be very unfavourable. Therefore, the forthcoming results of the phytolith analysis (sampling done in 2006) is hoped to shed some more light on the plant use at this site on Dilmun world's northern fringes.

CONCLUSION AND DISCUSSION

Several questions were posed at the beginning of the research of Al-Khidr on Failaka concerning chronology, extent, sources and function of the site. By now, some of them are partially answered or can be commented on. The forthcoming analyses of acquired evidence will certainly bring new insights and may modify the results presently at hand.

The mound Al-Khidr 1 (KH-1) was occupied by two or three subsequent Dilmun settlements during the first half of the second millennium BC. This date is also corroborated by our newly acquired ¹⁴C dates. The earliest of these settlements was probably a seasonal fisherman settlement, which left stone foundations of light structures built on the beach (oval and irregular lay-

outs). Later, the spot may well have been used for shell processing or/and as dumping area evidenced by the massive shell deposits. The latest occupation of the mound, clearly with more subphases, is represented by solid architectures (rectangular layouts) accompanied by rich artifactual assemblage. At the moment, the latter can be viewed as the most important part of Al-Khidr Bronze Age history. The exposed architectural remains do not seem to show the real planning of the site and give an impression of outbuildings rather than regular habitation places. As for amount, the most striking finds from the site are pottery storage jars with large volumes (originally up-to 300 litres), Dilmun seals and soapstone vessels. These facts together with natural anchorage at Al-Khidr and the well-known Dilmun maritime trade may turn to be decisive for further interpretations of function of the site (a redistribution point?).

The mound KH-1 yielded evidence for fishing and shellfish gathering (food?, pearling?) as well as keeping of domestic livestock (sheep, goat, and cattle). Currently questions as to whether crops were locally cultivated or imported and other materials like animal fodder or building

materials were brought from elsewhere must remain open.

When the mound KH-1 in context of the Bronze Age occupation at Al-Khidr is considered, two basic variants of interpretation of the whole settlement area can be offered. It is possible, first of all, that this mound was a part of a larger settlement comprising KH-1, KH-2, and KH-3 and the land between them. Thus, it could represent a large settlement compound on the northwest shore of the island. In this case, all three mounds would in principle be contemporary and might have been organized according to spatial function of individual settlement areas. An alternative interpretation could see KH-1 mound as an independent sequence of settlements not contemporary with KH-2 and KH-3. This would suggest that the shell-rich deposits of KH-1 were contemporary with occupation of deeper inland lying "settlements" at KH-2 or KH-3. However, both interpretation variants, perhaps somewhat speculative, have to be taken hypothetical scenarios. They will be investigated and verified by the detailed studies planned for 2009 and beyond.

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Fig. 1: Al-Khidr, Failaka Island, Kuwait. General view of the site from the north with flat mound KH-1 on the shore and conspicuous KH-2 in Islamic cemetery.



Fig. 2: Al-Khidr, Dilmun mound KH-1. Prior to excavations articulated sherds on the surface of KH-1 indicated Dilmun red-ridged storage jars preserved in situ.

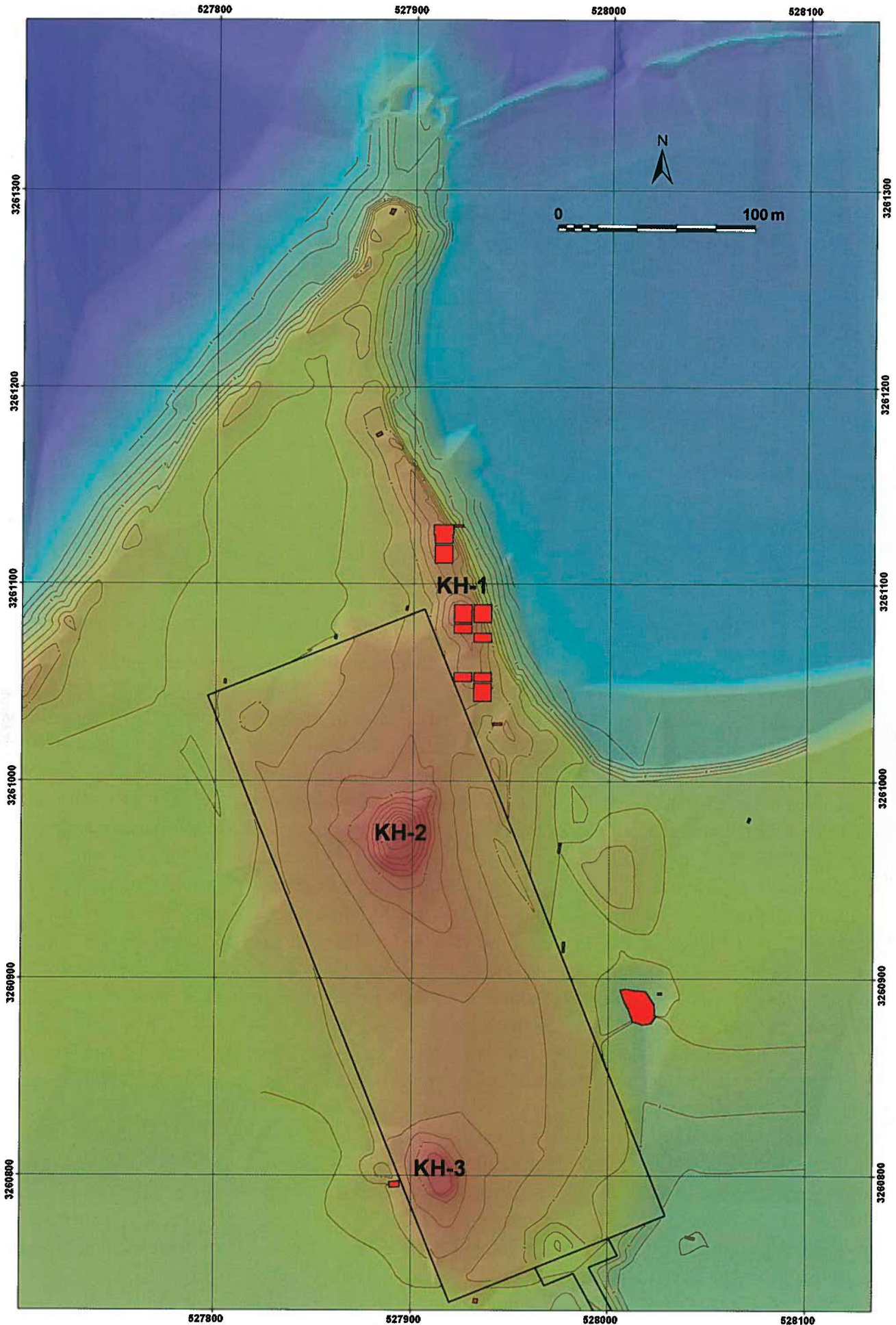


Fig. 3. Al-Khidr, Failaka Island, Kuwait. Mound KH-1 is situated on the shore, KH-2 and KH-3 are fenced within Islamic cemetery. Exposed areas (soundings and squares) and pits dug prior to KSAM fieldworks, which were also inspected, are marked in red.



Fig. 4: Dilmun mound KH-1. Ground plans of rectangular architecture in the uppermost horizon in central part of the mound.



Fig. 5: Dilmun mound KH-1. Superimposed walls and storage jars of architectures documenting rebuilding and refurbishments within the upper horizon occupation, northern part of the mound.



Fig. 6: Dilmun mound KH-1. Oval and irregular ground plans of the lowermost horizon in southern part of the mound.



Fig. 7: Dilmun mound KH-1. Rectangular architecture of the uppermost horizon and oval-like ground plan of the lowermost horizon (upper-right corner of the picture) in northern part of the mound.



Fig. 8: Dilmun mound KH-1. Shell-rich layers underlying stone masonries of the uppermost horizon in central part of the mound.



Fig. 9: Dilmun mound KH-1. A walled-up door opening in stone masonry of the uppermost horizon and storage jar covered by stones in central part of the mound.



Fig. 10: Dilmun stamp seal with its impression from KH-1.



Fig. 11: Impression of Ur III cylinder seal (diameter 1.9 cm, height 3.9 cm) found at KH-1.



Fig. 12: Dot-and-circle and linear decoration of a large steatite bowl found at KH-1 (scale bar = 1 cm).



Fig. 13: Fragment of a bitumen coated vessel, probably a cup, made of plaited palm-leaf strips (base 7 by 7 cm).



Fig. 14: A complete sealing made of bitumen (2.3 by 2.4 cm) with impression of a Dilmun stamp seal found at KH-1.



Fig. 15: Cordage wound around palm wood and lined with bitumen (8 by 9.1 cm) provides evidence of a larger construction.



Fig. 16: Burned and unburned mammal, bird and fish bones retrieved from dry sieving at the site.

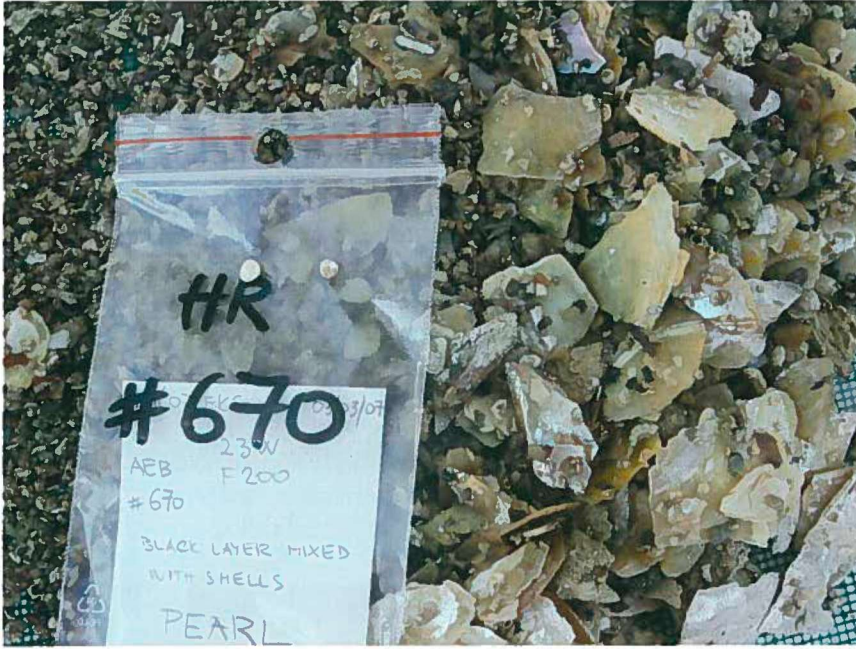


Fig. 17: Beautiful specimens of pearls were found in water flotation heavy residue fractions.

Fig. 18: Large shark vertebrae (scale bar = 1 cm).

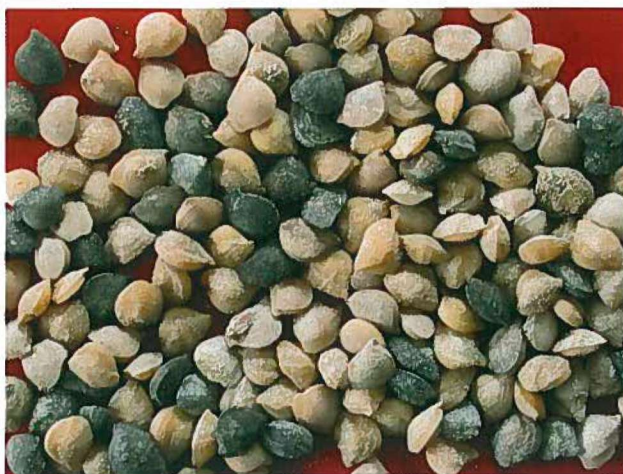


Fig. 19: Otoliths of marine catfish (*Arius sp.*) selected for analysis (scale bar = 1cm).

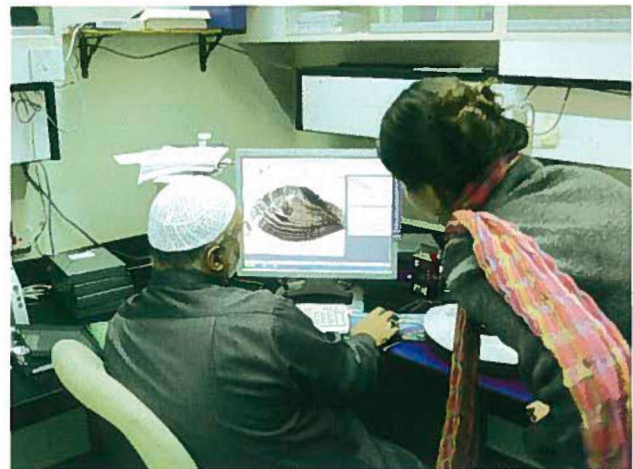


Fig. 20: Reading the thin-sections of otoliths from KH-1 in the Kuwaiti Institute for Scientific Research.