HLC PROJECT 2017: PRELIMINARY REPORT ON THE JAGIELLONIAN UNIVERSITY EXCAVATIONS IN SOUTHERN JORDAN

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Introduction

In September 2014 a new Polish research project dedicated to the Early Bronze Age (EB) began. Archaeologists and students from the Institute of Archeology of the Jagiellonian University started exploratory work in southern Jordan. This Heritage-Landscape-Community (HLC) project is headed by Piotr Kołodziejczyk. In cooperation with the Jordanian Department of Antiquities, an area located in the vicinity of the city of aṭ-Ṭafīlah was selected for detailed survey (**Fig. 1**). In the years 2014-16, the project entailed surface survey (Kołodziejczyk *et al*. 2018), while in 2017 excavations at two sites were started. In the years to come new locations will be added to the project. The work is being carried out as part of research project UMO-2016/22/E/HS3/00141, financed by the National Science Center (Poland).

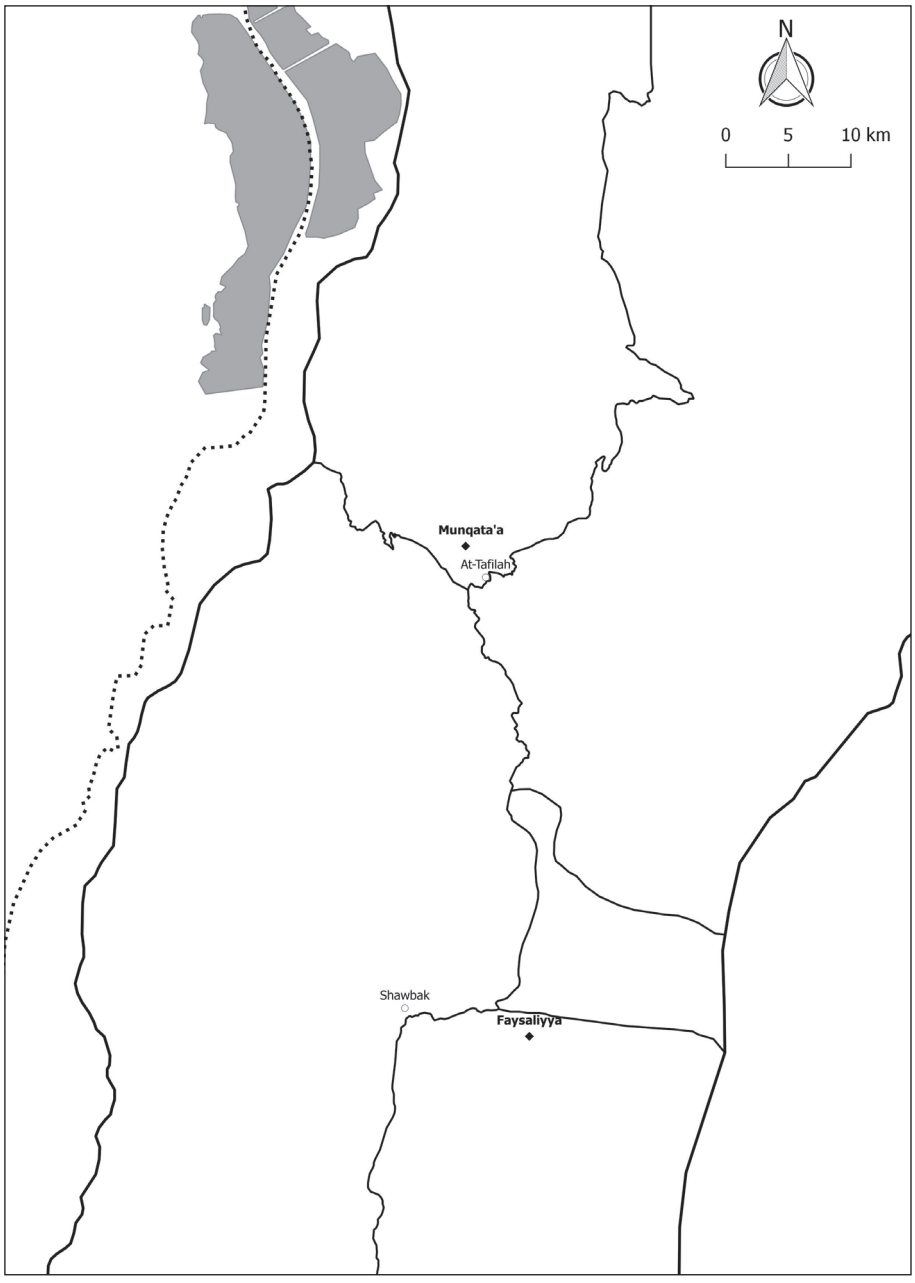
The project represents a comprehensive attempt to establish the functioning and significance of southern Jordan during the EB. Project research focuses on determining the stages and kinds of human activity within the study area at this time, with a case study -the micro-region of aṭ-Ṭafīlah- serving as the source of information. An important role in the project is also played by the neighbouring ash-Shawbak micro-region, which is used as an area of reference.

The key research problems include settlement network and **s**tructure, external relations and influences (including Egypt and the rest of the Levant, both of which witnessed important events at this time), and architectural and funerary traditions visible in the archaeological record. The surface surveys carried out by the project in the vicinity of aṭ-Ṭafīlah since 2014 has demonstrated that this area has great potential for a more complex study. Further excavations, combined with laboratory research and supplementary surface survey, will generate a coherent image of the period of interest and determine the dynamics of change that occurred here at the time. These will be projected against a backdrop of earlier cultural units and phases (Palaeolithic to Chalcolithic) to elucidate the trajectory of prehistoric and early-historic community development in the region.

Fieldwork of the Polish research project in southern Jordan was conducted in August and September 2017. Archaeologists and a geologist from the Institute of Archaeology of the Jagiellonian University in Cracow (Poland) carried out surface survey and test excavation in a desert area in the vicinity of the al-Fayṣaliyyah village (ash-Shawbak directorate), as well as in a mountainous area - al-Munqaṭi‘ah - in the vicinity of aṭ-Ṭafīlah city (at-Tafilah directorate). All work was conducted in co-operation with the Department of Antiquities of the Ministry of Tourism and Antiquities of the Hashemite Kingdom of Jordan [DoA representatives in 2017: Mr. Mohammad Dabain; Mr. Sami Salem al-Rofoa’a].

Location of Excavated Sites and Objectives of the Season

The investigated al-Fayṣaliyyah site is located about 5km south-east of ash-Shawbak city, on a plateau situated *ca* 1,200-1,300m asl in the northern part of the historic and geographical region of Edom, that is to say the Edom Highlands. To the east begins the Arabian desert, to the west the Dead Sea rift and to the north - from Wādī al-Ḥasā - the Moab Highlands. The area is also known as the Eastern Highlands or



1. Map of southern Jordan with sites excavated by HLC Project during 2017 season.

Jabal al-Adhiriyāt. It is actually a complex of prehistoric sites identified in 2016 by the DoA during surface works conducted in connection with the planned construction of a wind farm. During this survey, the DoA team recorded at least two archaeological sites, possibly dating from the Stone Age to the Bronze Age, which were clearly visible on account of a huge amount of chipped stone on the ground surface and some probable architectural remains. These important discoveries by the DoA team are worthy of further investigation. Nonetheless, as archaeological sites in the region are in danger, this needs to be carried out before construction works begin, thereby destroying the heritage of Jordanian history.

The al-Munqaṭi'ah archaeological site is located about 3km north-west of aṭ-Ṭafīlah city, on the northern slope of the canyon directly beneath the city. Branches of the canyon begin in the city itself and head west towards the Dead Sea rift just below the site. The quantity of surface artefacts found in several places during the surveys conducted by the Polish team between 2014 and 2016 was suggestive of developed settlement activities. One such location was an area commonly called 'al-Munqaṭi'ah' by local farmers; it is very difficult to reach as there is

no road leading there. The only way to get to the lower part of the valley is along a small path on the steep slope. The difficulty of accessing the site presents a major logistical problem. Research can be conducted only by setting up a camp. Unfortunately, the activity of robbers is clearly visible on the site in the form of many pits, with the destruction being marked by an abundance of stone and ceramic artefacts from various periods lying on the surface.

The main objective of the work conducted during the 2017 season was to determine the phases and nature of human activity on and around the sites and to prepare a detailed plan for subsequent research, bearing in mind the extant threats to these manifestations of Jordanian heritage.

Geology, Hydrology, Geomorphology and Pedology

al-Fayṣaliyyah

Within the study area, low rolling hills are the dominant element of the landscape. Formed on the Nubo-Arabian Shield tableland (Bandel and Salameh 2013; Bender 1975; Migoń 2009: 250-254), these are cut by episodic river beds forming near-parallel V-shaped valleys. All of them head eastwards - to the desert - and are up to 50km in length. The area under investigation is located in the upper and middle parts of these valleys.

The river channels are 5-10m wide and 1-5m deep. The youngest - Holocene - banks consist of boulder-gravel-sand-silt material. The boulders are up to 1m in diameter, with an average of 0.5-0.6m. The contemporary dynamics of the rivers have caused intensive downward erosion. The river's incision is pronounced and erodes Holocene sediments, Tertiary conglomerates and even Cretaceous marls.

The al-Fayṣaliyyah archaeological site lies on Quaternary sediments which form flat geomorphology. A detailed study of their formation was initiated during the 2017 season. However, in several locations (mostly in the river beds), small outcrops in the form of rock walls (up to 20m) and valley steps allow older geological layers to be described. Beneath the Holocene sediments lie Tertiary and Cretaceous age rocks. They form the upper part of the horizontal, parallel layers of the Nubo-Arabian Shield. The Tertiary sediments are known as the Ḍānā Conglomerate (DC - Oligocene/Pliocene) and the Umm ar-Rijām Chert-Limestone (URC - Paleocene/Eocene). The lowermost formations visible in the outcrops are the Cretaceous rocks of al-Muwaqqar Chalk Marl (MCM - Maastrichtian [see also Barjous 1988; Bandel and Salameh 2013]).

The MCM formation is interbedded with numerous (at least six) chert levels. They form widely extended nodular and tabular deposits of 10-30cm thickness. Several chert outcrops are located in the vicinity of the explored archaeological site. What is most important for their archaeological interpretation is that they are of good to excellent mechanical quality, allowing *in-situ* tool production during human occupation of the area. Large quantities of these cherts are very easily accessible, in both primary and secondary deposits.

The Tertiary URC and DC formations are preserved only partially. The small occurences of URC/DC conglomerate appear in the river-valley slopes as the relics of old (Tertiary) river terraces. They were cut and severely eroded during the Quaternary and form rock walls or steps. These rocks contain several sorts of boulders (up to 60cm in diameter but usually not more than 40cm), sand and silt. The dominant types of primary rock are chert and limestone, with minor admixture of sandstone (the sandstone source area lies further to the west, in the ash-Shawbak area - that is to say the river headwater).

Seasonal rivers are today active between October and March/April, but precipitation does not usually exceed 50mm per month. However, as stated by numerous authors (*e.g.* Rahn 1967 [for a summary see Thomas 2011]) even this low precipitation significantly affects the geomorphology. The region is frequently soaked by torrential rains; these have gained in frequency since the 1990s, but earlier episodes are known too. The sheet floods thus caused have significant influence on the slope morphology and on the character of sediments and soils. Other than rainfall, the area is deprived of permanent water flow or water sources. Contemporary agricultural activity is based on deep-drilled wells.

A second factor affecting soil formation is intensive aeolian activity. The study area is

covered with a desert pavement consisting mostly of cherts with an admixture of limestones. Intensive aeolian erosion is caused by June-August winds of 20-30km/h (50-80%) and February-June winds of 30-50km/h (10-15%). In this context, the scarcity or absence of varnish and high degree of roundness is interesting. It could be explained by the intensive rains and resultant sheet floods. The factor has a significant erosion-transportation potential.

al-Munqaṭi'ah

The contemporary geomorphology of the site area is very steep and erosional processes are intensive. This is mostly a consequence of winter-spring precipitation and the influence of pastoral activity on the vegetation cover. The V-shaped stream beds are extremely deep and cut through older colluvia. Several rocky shelves formed on harder geological strata are visible in the canyon geomorphology, alternating with cliffs and steep slopes. In the flatter parts of the canyon, screes and alluvial fans have formed. Not only is the local morphology marked by animal paths, it was in fact the paths that determined its formation. To this day, the area is crossed several times a day by herds of sheep and goats. Although potentially insignificant, this influence also produces visible changes in geomorphology.

The upper parts of the canyon (Bandel and Salameh 2013; Tarawneh 1987; Tarawneh 1988) are formed of Cretaceous limestones, sandstones, marls and clays (ASL - 'Ammān Silicified Limestone formation of Campanian age; WUG - Wādī Umm al-Ghudrān of Campanian-Santonian age; WAS - Wādī as-Sīr of Turonian age). There are chert levels in these formations. Beneath the ASL/WUG/WAS, the canyon cuts through limestones and marls of the Cenomanian Shu'ayb-al-Ḥummar-al-Fuḥayṣ and Nā'ūr formations (SHF/N). The profile continues downwards with Early Cretaceous-Late Palaeozoic sandstones (of Kurnub formation). The rock shelves and boulders on the canyon slopes originate from basaltic magma that formed a Pleistocene intrusion cutting across the ASL/WUG/WAS. All the geological layers described above are part of the Nubo-Arabian Shield, with a slight incline to the west in the area analysed. They form a typical cuesta morphology (*e.g.* Migoń 2009: 252) on the eastern border of the Dead Sea rift.

The al-Munqaṭi'ah archaeological site was established on one of the rock shelves around 80-100m above the contemporary river bed, in Kurnub sandstone layers. The shelf is flat or slightly inclined and 200-400m wide. The bedrock is covered with a very thin (0.3-3m) colluvium layer. Today, the location is completely devoid of water (streams or springs). The main water-bearing layer should be identified with the WAS rocks. The water sources in the whole aṭ-Ṭafīlah region are located within the WAS/SHF geological contact zone, with their presence having been documented 100-200m upstream in the canyon. However, water from these sources does not reach the al-Munqaṭi'ah site, at least in summer.

The Holocene stratigraphy of the al-Munqaṭi'ah archaeological site starts with a 0.3-0.5m thick layer of contemporary colluvium. It consists of rock fragments, gravels, sand and silt. Beneath, the archaeological deposits are mixed with colluvial material. The sequence ends with a thick (at least 1.5m) layer of sand with scarce admixture of limestone blocks. The last layer seems to be the regolith level, but solid rock was not reached this excavation season. The soil in the area of excavations is very primitive and could be classified as Lithosols, Regosols and Calcaric Regosols (Mocek 2014: 311).

Excavations in 2017

al-Fayṣaliyyah

During the fieldwork, we divided our team into two groups, each led by a supervisor responsible for documentation of the excavation process. The process of gridding out the al-Fayṣaliyyah site was challenging owing to its impressive size. Archaeological artefacts are visible all over the desert surface, for kilometres. Therefore, before deciding on our 2017 activity area and limiting it to *ca* 3ha, it was necessary to create a virtual grid that could be extended in the event that we were forced to work in other locations. Based on pedestrian-survey observations and a map of potential architectural features that we created beforehand using GPS devices, it was decided to lay out a grid over 50ha. This was divided into two equal

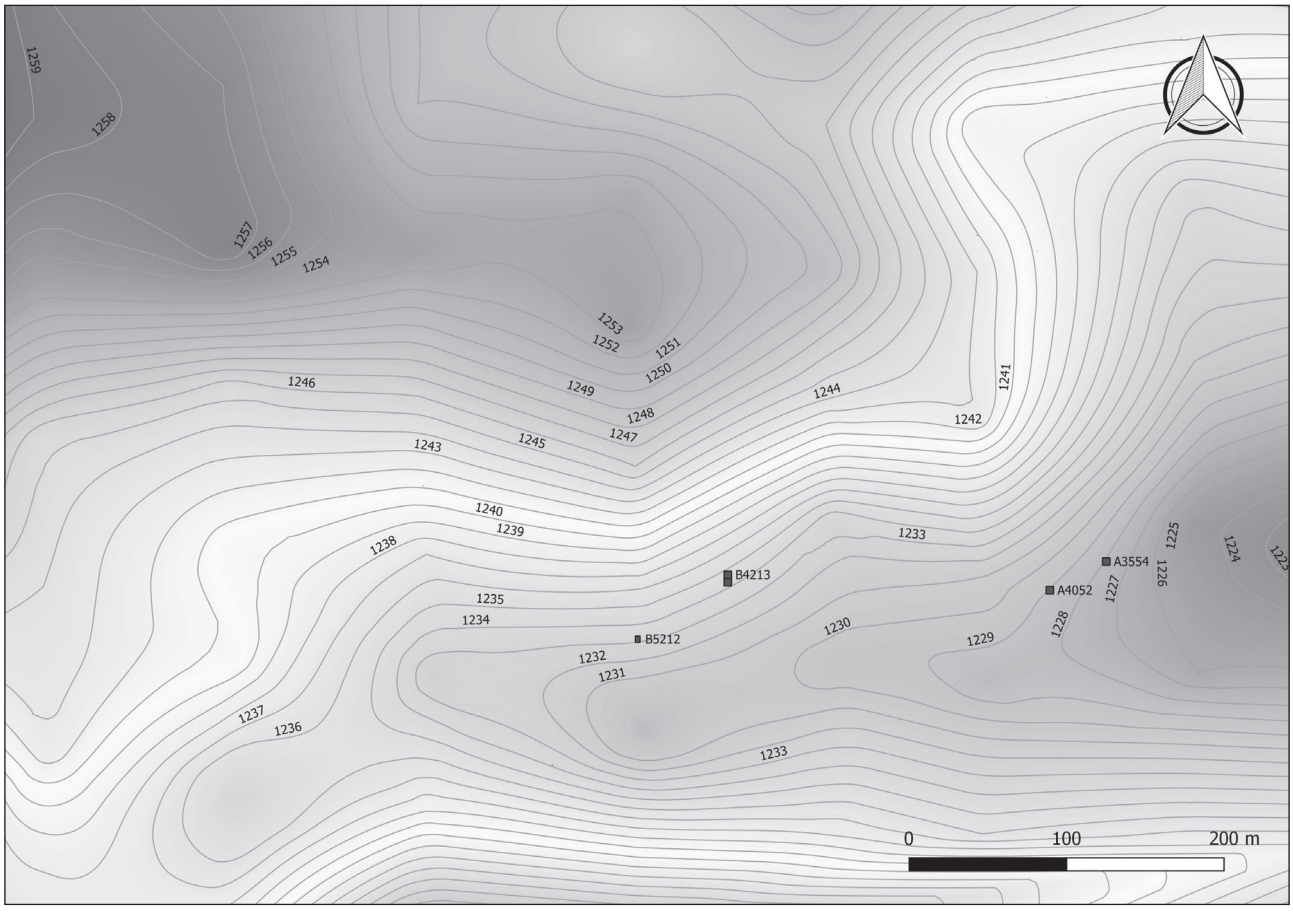
areas: A and B. Area A, located to the east, is characterised by a dense concentration of stone cairns (out of a total of 229 stone cairns identified in the study area during pedestrian survey, 145 were in Area A). Area B, located to the west, is characterised by occasional concentrations of stone architecture, including the remains of walls visible on the ground surface and aggregations of rocks, probably representing rubble from the walls.

During 2017, the team managed to excavate in five squares located in different parts of Areas A and B **(Fig. 2)**. The reason behind choosing trenches located apart from one another was to obtain as much information about the different structures visible on the surface as was possible in the 14 days devoted to field research this season. Two of the squares (A4052; A3554) were located in Area A and were chosen by us for their potential to shed light on the character of the cairns. The remaining three, located in Area B (squares B4213; B4314; B5212), were set up over the stone clusters, as this allowed us to investigate the possible architectural remains located there. As mentioned above, the activity area was limited to *ca* 3ha, with the distance between the two outermost squares excavated in Areas A and B being 300m.

Area A

In Area A, the team excavated two squares 36m apart: A4052 and A3554. Each contained a stone cairn selected for excavation on the basis on previous field observations.

The first and smaller of the two cairns was located in square A4052. In order to investigate the archaeological context of the cairn and thickness of the possible cultural layer located in its vicinity, the collection of surface material was followed by the removal of 15cm of topsoil (L1). Unfortunately, the material revealed no archaeological features and showed no traces of human activity around the cairn. The cairn itself (L2) consisted of medium-sized field stones with average dimensions of 15×10cm; the biggest stone measured *ca* 30×20cm with the smallest being just 2-4cm in diameter. The cairn was of an irregular, oval shape. It



2. Distribiution of trenches on al-Fayṣaliyyah site.

measured 1.56m on its longer axis and 1.31m on its shorter, with a height of 36cm from base to centre top. Although several chert artefacts were found within the cairn mound, the stones were loose and exposed to external factors like erosion, wherefore the structure cannot be said with certainty to have served as their original depositional context. Unfortunately, no archaeological features - specifically the remains of substructures that might have been marked by the cairn - were found beneath the stones either. After archaeological work in square A4052 came to an end, it was chosen for a geological test trench.

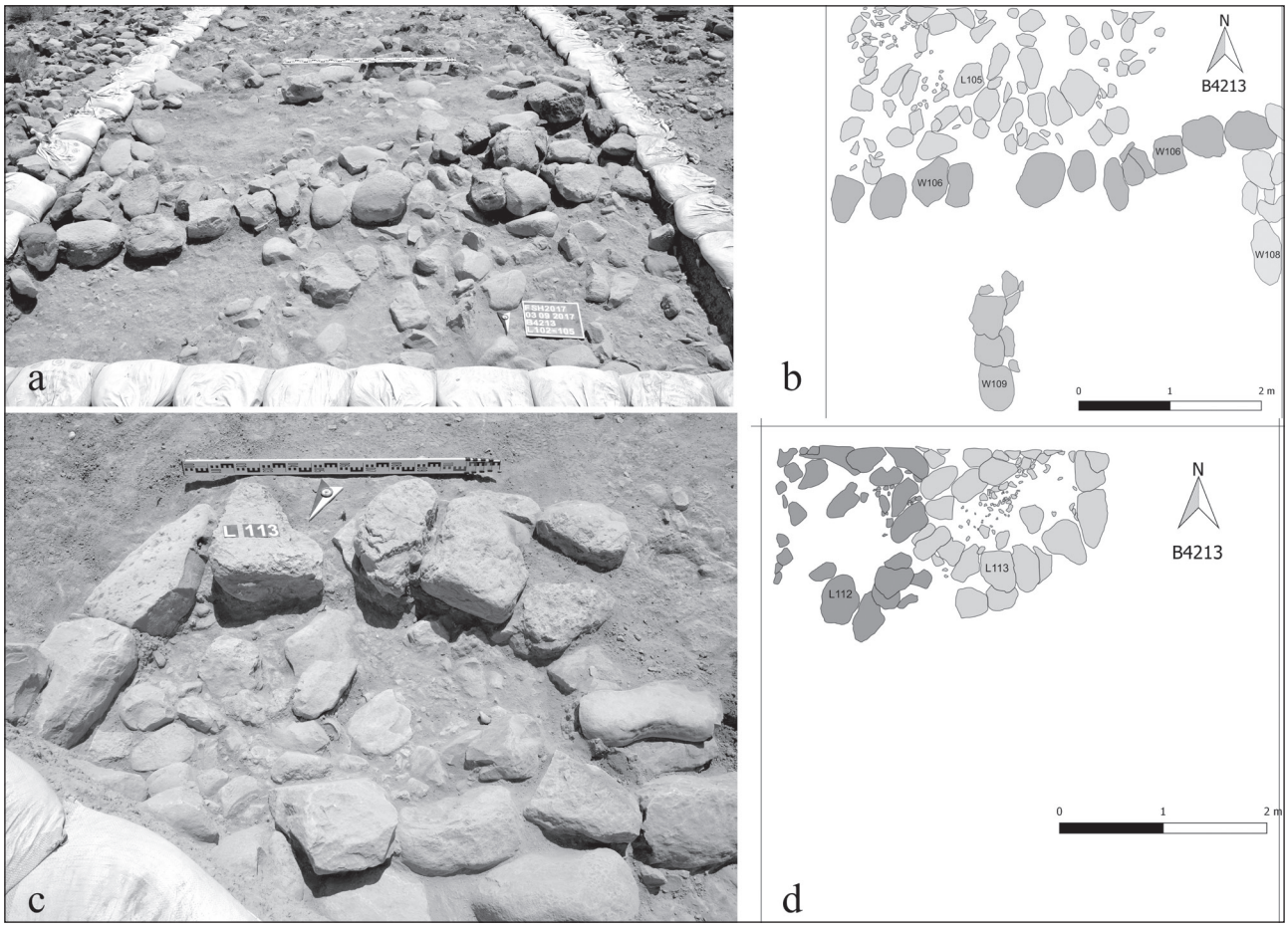
The second cairn (L4) excavated during 2017 was located in square A3554. It was also of irregular oval shape, but bigger in size, measuring 4.90m on the longer axis and 2.48m on the shorter. The height of the structure, measured from centre bottom to top, was 59cm. Both cairns were built mostly of medium-sized field stones (average 15×10cm), with some larger ones (average *ca* 30×20cm; the biggest *ca* 45×30cm). Because of the cairn's dimensions and in order to maintain stratigraphic control, it was decided to divide the stone structure in four and to explore only the south-west quadrant. Once again, this revealed no archaeological features under the excavated quadrant. Some chert artefacts were found amongst the stones of the larger cairn. As work under the stones of the cairn and below the ground surface (L7; L8; L10) continued, the number of chert artefacts declined, thus proving the absence of anthropogenic features.

Area B

In Area B, where several concentrations of rocks -possibly the remains of stone architecture- were located, the team set up three squares selected for excavation: squares B4213 and B4314, which adjoined each other along their southern and northern edges, and square B5212, located 64m to the south-west.

In squares B4213/B4314, located on a slope dipping from north to south (~1m height difference between the northern and southern ends of the trench), a concentration of unevenly spread stones of different sizes was located (L102). Because their original arrangement was unclear, it was decided to remove 5cm of topsoil (L101) around them in order to expose their outlines. It turned out that one of the stones was actually a grinding stone (special find no. 110). Subsequently, the work continued primarily in square B4213, where several walls and different soil compositions were described as different loci. The deepest level (northern part of the trench) was 35cm below the ground surface. As the cairns, loose stones and walls in the aforementioned trenches had been exposed to water and wind erosion, the artefacts found (mainly in the top levels) are most unlikely to constitute a primary archaeological context. The most interesting features were walls W106, W108 and W109, found under the first layer of loose rocks (**Fig. 3a, b**), and two stone circles (L111; L114), found beneath the level of the walls.

Although located at different levels (top elevation W106 = 1234.70; W108 = 1234.50; W109 = 1234.30m asl), the three walls seem to be contemporary with the gradual drop in elevation reflecting the slope on which they were erected (W108 is located northernmost, W109 southernmost). W106 was built of large stones (**Fig. 3a**)**.** It consisted of 11 big rocks of which seven were placed on the eastern and four on the western side of a 60cm wide empty space, possibly an entrance. The stones were of different sizes, with the smallest measuring 23×30×7cm and the biggest 35×47×19cm. Generally speaking the wall ran from east to west, with a slight south-east to south-west curvature, and was 5.12m long. Below the wall there were no further courses of stones, but just randomly distributed rocks of different sizes (L105). All of the exposed wall remnants consisted of just one course of stones. Another wall (W108), running from north to south, abutted W106 from the south at its easternmost side. Its length was 1.54m. W108 consisted of irregularly laid stones of different sizes, with the smallest measuring 30×12×15cm and the biggest 67×28×9cm. The latter, located at the southern end of the wall, was partly covered with compacted soil - which may have been used as mortar (L107). The last wall, W109, was discovered 0.95m south of the empty space between the western and eastern parts of W106. Its length was 1.26m. The wall consisted of three aligned stones measuring respectively 42×36×6cm (the northern one), 27×32×12cm (the central

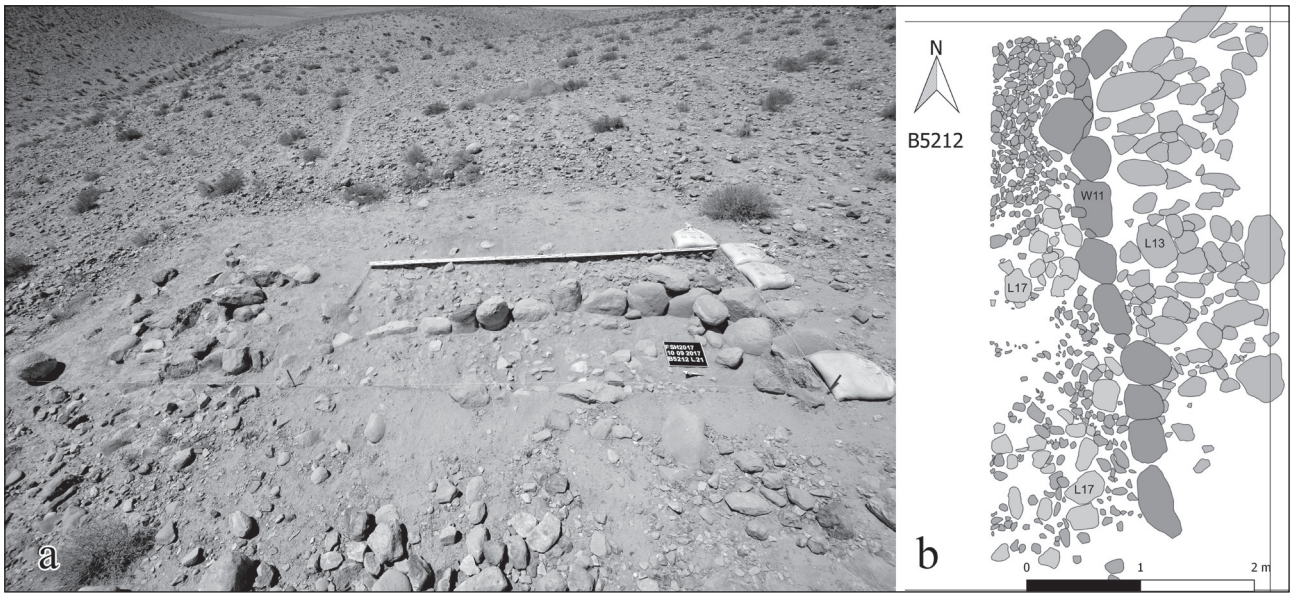


3. |a-d: al-Fayṣaliyyah. Partly excavated stone structure in trench E (Squares 4213 and 4112) (Drawing: B. Witkowska, J. Karmowski).

one) and 45×34×13cm (the southern one). The aforementioned densely compacted soil (L107) was found here and there underneath the walls (or around the rocks). Its texture was significantly harder than the soil around it, although both had a similar pale yellow colour. It might have been used as mortar; *i.e.* dirt mixed with water to stabilise the stones and increase their resistance.

An interesting set of features from the level beneath the walls is represented by two stone circles (L112; L113) in the north-eastern corner of square B4213 and two small pits to their south (**Fig. 3c, d**). The inside of the circles (1234.25m asl) seem contemporary with the pits (1234.19m asl). As in the case of the walls, the slight difference in top elevations can be attributed to the slope. These features seem not to have been disturbed by external factors such as erosion (which probably affected the previously described upper structures). Loci 112 and 113 closely abutted each other, with L112 to the west and L113 to the east. Although both were constructed of medium-sized stones and were of similar ovoid shapes, it's probable that only L113 was exposed in its entireity (axis = 1.88×1.45m). Their internal surfaces measured 0.8m^2 (L112) and 0.7m^2 (L113). The two pits located to the south, *viz.* L114 close to the western circle and L111 close to the eastern, were both of oval shape and had sizes of 0.10m^2 (L111) and 0.11m^2 (L114), with depths of 6cm (L111) and 5cm (L114). Both had a dark (almost grey), comparatively loose fill.

The last trench excavated in 2017, square B5212, revealed an interesting wall construction **(**W11, **Fig. 4**). It separated a concentration of medium- and large-sized stones (L13; L22) in the east,from a gravel layer (L16; L17; L20) in the west (**Fig. 4a, b**). The construction had been partially visible on the surface even before excavation. The bigger stones on the eastern side could be rubble from the wall, but the function of the gravel located to the west needs further investigation. The wall ran from north to south with a slight curve to north-west / south-east.



4. |a, b: al-Fayṣaliyyah. Partly excavated stone structure in trench W (Drawing: B. Witkowska, J. Karmowski).

During season, the team managed to expose *ca* 4.70m of its length, but the possibility cannot be excluded that the wall continues further to the north and/or south. The exposed portion consisted of 13 stones of different sizes, with the biggest measuring 64×25×8cm and the smallest 21×23×16cm. It is not yet known if the wall has more courses than the one exposed thus far. It appears that one of the stones reflects cultural modification in the form of a notch, giving it an 8-shaped appearance. Comparison with other sites in the region (Fujii *et al.* 2017: 571, 572, 575-6) suggests that it may functioned as an anchor for tent guy ropes. Should this be true, we cannot exclude the possibility that the stone was repurposed as a wall stone in W11.

al-Munqaṭi'ah

Based on a reconnaissance visit made in 2015, combined with a survey of hilltops and wadis around aṭ-Ṭafīlah (Karmowski 2017; Kołodziejczyk *et al.* 2018), as well as on observations made before the start of work in 2017, it was decided to set up a trench that would encompass one of the numerous looters' pits found at the site. Unfortunately, despite the fact that site's location is far from accessible, it is frequently visited and damaged by people in search of 'treasures'. One pile of backdirt and a nearby hole in the ground contained significant amounts of ash and pottery fragments, which led us to believe that certain archaeological features could have been distrubed. This observation led to it being chosen as a starting point.

During the 2017 season, the team conducted excavations in the north-eastern part of the site, 10m south of one of the straight edges of the wadi that bound the area to the north. After extension (*i.e.* in its final iteration), the trench located within squares A and B measured 2.5×3.5m. The mountainous area of the site was divided into various sub-areas located on slopes. The test trench was set up on a slope running from north-east to south-west with *ca* 75cm difference in the initial elevations of its north-east and south-west corners. As already noted, square A was laid out to include the looters' pit in its south-east corner. During excavation, while following the boundaries between loci, six different levels were created for better control of stratigraphy, in the form of steps at different elevations. Twelve loci and a wall fragment were discovered altogether within the four stratigraphic units described below.

Stratum 1

The first stratum, located directly below the surface (L1; L2), was most likely formed naturally. It was composed of layers of sand with a dust fraction of sandstone. The stratum contained some archaeological material - mostly chert artefacts - and several limestone rocks. Limestone is not characteristic for this geological level of the valley. It could either have

tumbled from the upper parts of the valley or have been carried down by someone. Later on it transpired that some of the rocks were rubble from the subsequently discovered wall.

Stratum 2

The second stratum to be exposed can be definitely linked to human activity at the site. The main feature visible here was a stone wall (W11) located in the eastern part of the trench (**Fig. 5a**). The need to uncover the eastern face of the wall was the reason why we extended into square B. The wall was quite regular. In 2017 the team managed to uncover 1.52m of its length. Its width varied from 75cm in the north, through 61cm in the centre, to 44cm in the south. Its width in the north is however probably the result of collapse. It looks as though the wall - as exposed - toppled to the west; the stones visible in the north section of the trench may have fallen during this process. The stones used in the construction of the wall were arranged into two faces (each having an additional course beneath). The wall has a central fill of small rocks between its two faces. None of the stones seems to have been worked, but their predominantly rectilinear shape suggests that they were carefully selected. The size of the stones on both faces varies from 24×11×15cm to 41×28×24cm. To the south, the wall is truncated by the looters' pit. Judging by the stones visible in the south section of the trench, the wall probably continues in this direction -as it does to the north- into the unexcavated area. The whole construction was founded on a thin layer of brown soil, spread under the wall in a foundation trench that cut an earlier feature (L8). The height of the uncovered part of W11 is *ca* 40cm.

On both sides of the wall, layers with a significant amount of artefacts were found. L3, a brown and light-brown coloured layer located to the west, contained, in addition to pottery and flint fragments, a grinding stone (special find no. 12) found right next to the wall. On the western side of the wall, there was a clearly visible pit cut (L4) with a dark grey fill of loose soil (perhaps ash). It contained burned sandstone (small-sized rocks) but no artefacts. The size of L4 was 0.044 m^2, with a depth of 15cm.

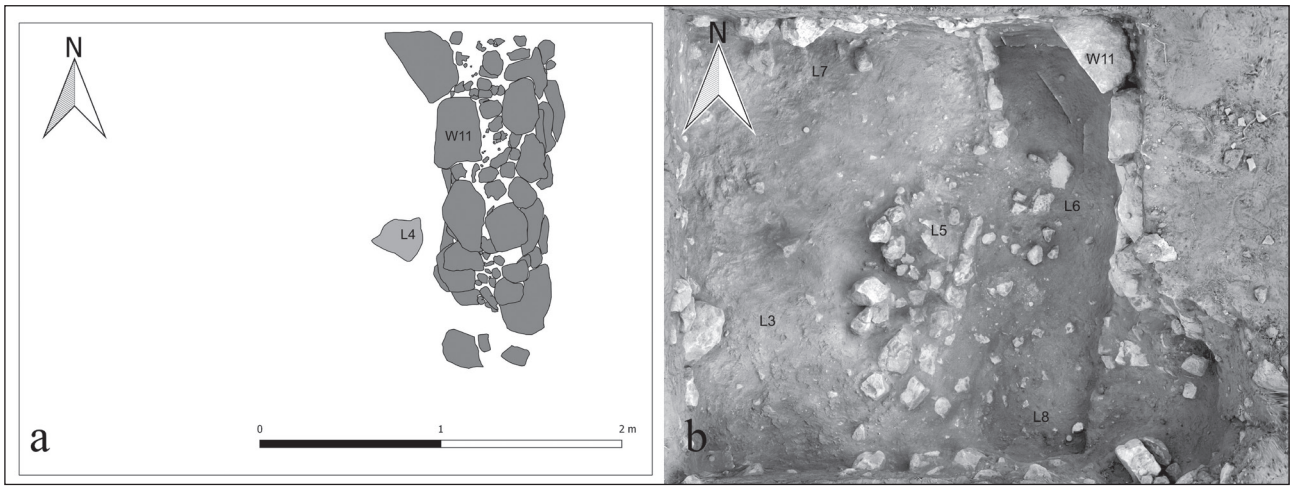
The eastern side of the wall yielded further pottery and chert, found in L12 and L13. The brown colour of these loci was similar to L3, but without the lighter tones of the former.

Stratum 3

The third stratum was exposed only on the western side of the trench (L5; L6; L7; L8; L9) (**Fig. 5b, 6a-b**). In general, these loci can be described as cultural layers with traces of burning (L5; L7) and pits with extremely dark (almost black) fills of ash.

L6, located in the eastern part of square A, was a layer of loose, brown soil with significant amounts of pottery and an *in-situ* spindle whorl (special find no. 19). A lot of the sherds found there fell apart during excavation (as if they were made from poorly fired or unfired clay). L6 also contained charcoal, although the matrix itself did not show traces of burning.

The same cannot, however, be said of L5 and L7. L5, located west of L6, was of almost



5. |a, b: al-Munqaṭi'ah. Neolithic stone wall and associated features in trench E (Drawing: B. Witkowska, J. Karmowski).

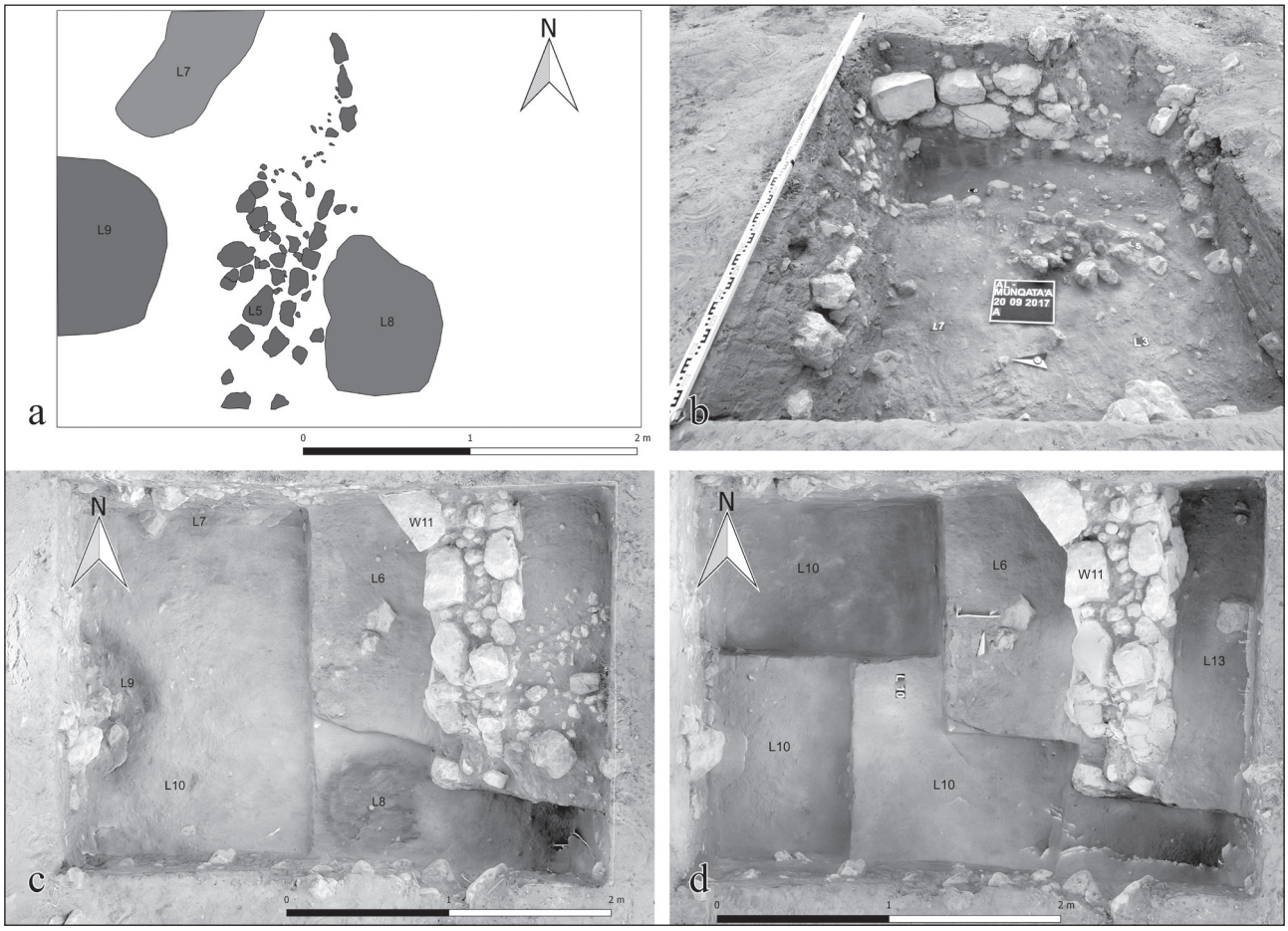
black / dark-grey colour with significant traces of burning. It contained a lot of small- and medium-sized rocks in its middle part and was separated from L6 by an alignment of medium-sized rocks placed in a row. This locus was clearly visible in the north section of the trench. The rocks found here were burned. L5 also contained some pottery fragments and a smaller quantity of chert artefacts.

L7, a layer similar to and located west of L5, might be equivalent thereto, although there was no stratigraphic link between the two within the exposed area. Like L5, L7 was clearly visible in the north section of the trench and contained dark soil with traces of burning, pottery and chert artefacts.

L8 and L9 were pits filled with ash (**Fig. 6c**). The former, located in the south-east corner of square A, was partly destroyed by the aforementioned looters' pit, with some of its fill having found its way on to the looters' backdirt pile. The fill of L8 was of mixed grey, brown and dark-grey colour and contained chert and pottery artefacts. The size of the locus was 0.53m^2, while its depth reached 31cm. The second pit, L9, was located on the westernmost side of the trench. Its fill of very dark (almost black) soil made it clearly visible (both on the surface and in section). This feature could be a hearth or a fire pit. It contained a lot of pottery and chert, as well as burned rocks. During excavation it appeared that in the upper part of the locus, pottery and chert material were more frequent than rocks, which were found mostly in the bottom part. L9 was not fully excavated during the 2017 season, as a large part of it runs into the west section of the trench. The visible, semicircular part was 22cm deep at its central point.

Stratum 4

Only one locus, L10, can be assigned to this stratum (**Fig. 6d**). The layer was characterised by its bright yellow colour and sandy texture, which made it look almost natural.



6. |a-d: al-Munqaṭi'ah. Neolithic layers of stone feature related to Jericho IX horizon in trench W (Drawing: B. Witkowska, J. Karmowski).

Nevertheless, it did contain archaeological artefacts (including chert arrowheads). The locus occurred in the western part of square A, *ca* 1m below the square's initial surface (531.75m asl). The deepest level of L10 reached in 2017 was 1.52m below the surface (531.23m asl). At this depth, there was no archaeological material present. L10 might be the last layer containing traces of human activity between stratum 3 and bedrock, but further investigation is needed to confirm this.

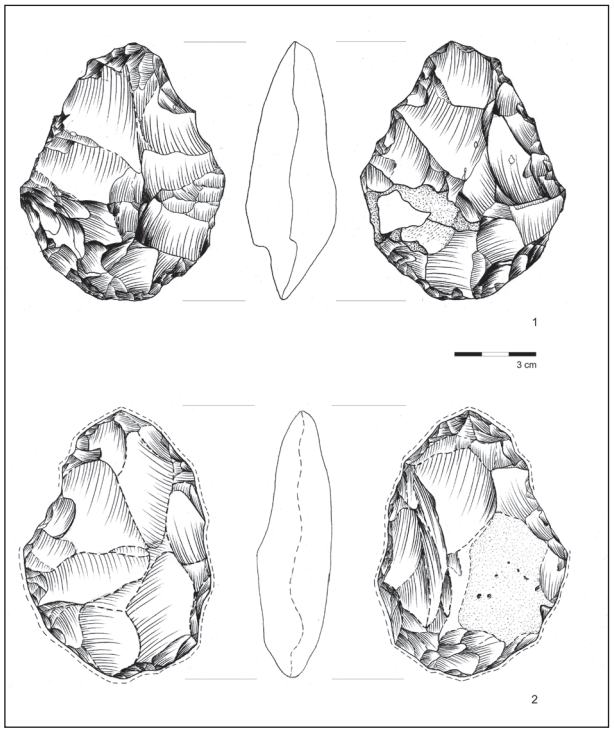
Chert Artefacts

al-Fayṣaliyyah

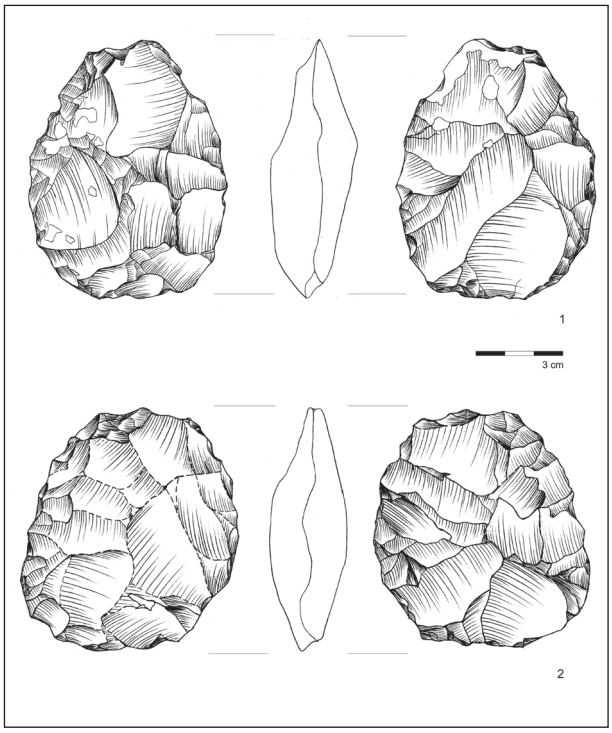
During the 2017 season, a total of over 5,000 stone artefacts were recovered. Approximately 60% of these come from the five excavation units described above, with the remainder having been collected from the ground surface in various parts of the site. The artefacts are made of local raw material, mainly brown-beige coloured chert, but some of a better quality steely grey material. Many have a pronounced white-grey patina. Furthermore, they are characterised by post-depositional battering and edge damage, and also display traces of aeolian abrasion. Initial analysis of the al-Fayṣaliyyah assemblage shows that it contains many pieces that are not very distinctive chronologically and culturally. Amongst them, however, are diagnostic forms that can be attributed to several different chronological horizons.

The earliest finds are Acheulian handaxes (21 pcs). Almost all were collected from the ground surface in the western part of the site. They were classified according to the typology of F. Bordes (1961). Several types were distinguished, *viz*. cordiforms, subcordiforms, amygdaloids (**Fig. 7**:1-2), ovetes (**Fig. 8**:1), discoidal (**Fig. 8**:2) and ficrons (**Fig. 9**:1). They are quite diverse in terms of size, but most don't exceed 10cm in length. Some display traces of the edges having been finished with a soft hammer. In two instances, handaxes were used secondarily as flake cores. It is not possible to determine the exact date of this assemblage, but morphological features indicate that it can be most likely be attributed to either the Middle and Late Acheulean or to the Late Acheulean exclusively (Shea 2013: 73-76). The handaxes from al-Fayṣaliyyah appear similar to collections from other sites in south-western Jordan, such as al-Fujājī and Wādī Kalkhah (al-Nahar and Clark 2009).

The next chronological horizon at the site should be associated with the Middle



7. al-Fayṣaliyyah. Acheulian handaxes (1-2) (Drawing: B. Witkowska).



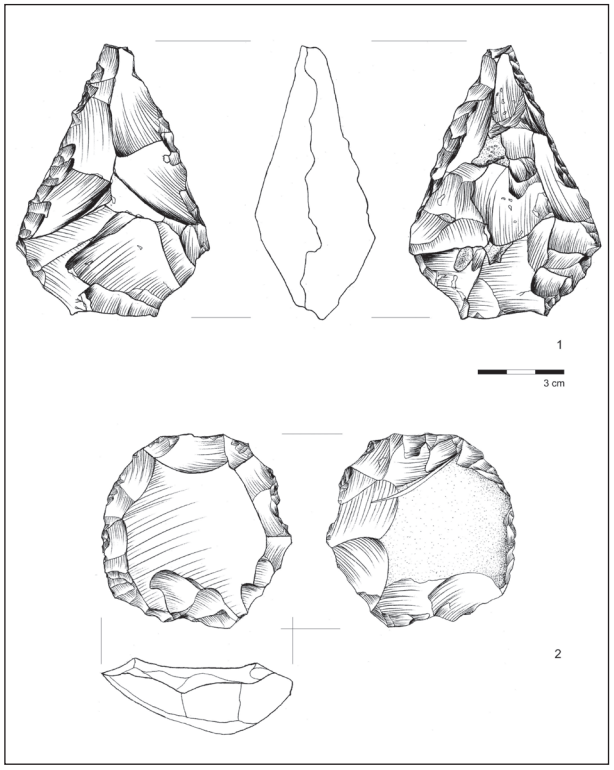
8. al-Fayṣaliyyah. Acheulian handaxes (1-2) (Drawing: B. Witkowska).

Palaeolithic. Across the whole area of the site - but especially in square A4052 - and beyond, numerous artefacts occurred which can be attributed to this period on the basis of characteristic typological or technological features. A distinctive group are the specimens associated with the Levallois technique. The Levallois cores deserve particular attention. Among them are both preferential and recurrent specimens, single-platform and multi-platform ones (**Figs. 9**:2**, 10**). Most of the Levallois cores should be considered flake specimens, although irregular blade examples were also recorded. Levallois debitage is quite abundant, being represented by flakes (**Fig. 11**:1), points (**Fig. 11**:2-3) and trimming elements. The majority of discoidal cores and some flake, single-platform cores should also be dated to the Middle Palaeolithic. In addition, a large number of scrapers were present on the site. These are diverse, but most often they occur as sidescrapers, canted scrapers and convergent scrapers (**Fig. 12**:4-5). Some of the latter may be considered points. Very numerous notched and denticulated tools (**Fig. 11**:4-8) can be attributed to the Middle Palaeolithic component. The co-occurrence of the Levallois technique and discoidal core technique, as well as the presence of tools such as scrapers, points and notched/denticulated specimens, suggests that remains of the Palaeolithic in al-Fayṣaliyyah are associated with the Levantine Mousterian.

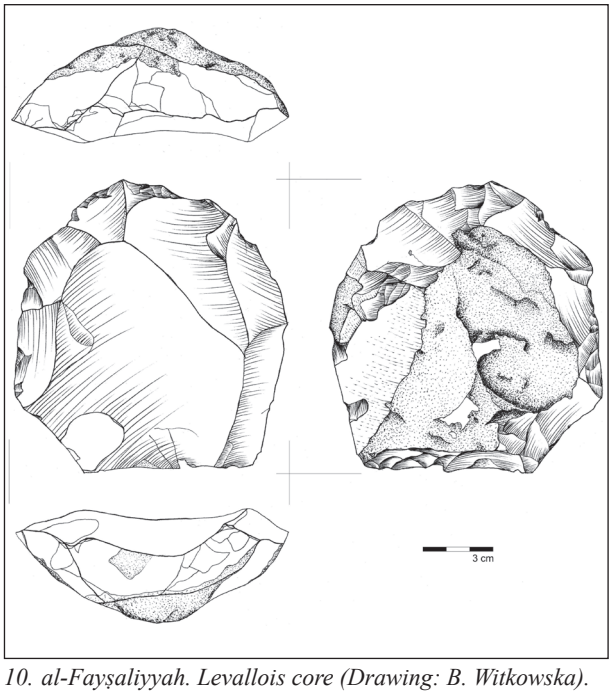
There is also another category of artefact that could be linked to the Middle Palaeolithic (**Fig. 12**:1-3). These were mostly discovered in square A4052 and correspond to the typological characteristics of Tayac points (Debenath and Dibble 1993). It cannot be ruled out, however, that they are older and come from the late phase of the Lower Palaeolithic (Shea 2013: 76).

On the site, lithics were also discovered that can fairly convincingly be dated to the Epipalaeolithic, although at the moment it is difficult to clearly determine their cultural affiliation. They occurred mainly in the western part of the site, on the surface and in squares B4212/4314 and B5212. Among them, single-platform bladelet cores were registered (**Fig. 13**:1-2), some conical, very slender and with careful preparation, and others pyramidal, stocky and with preparation limited only to the striking platform. In addition, a few fragmentary microliths - probably backed bladelets or rectangles - formed with very fine, high, abrupt retouch (**Fig. 14**:11-15), as well as very regular bladelets whose width does not exceed 1cm (**Fig. 14**:9-10), should be mentioned.

The youngest chert artefacts discovered in



9. al-Fayṣaliyyah. Acheulian handaxe (1), Levallois core (2) (Drawing: B. Witkowska).



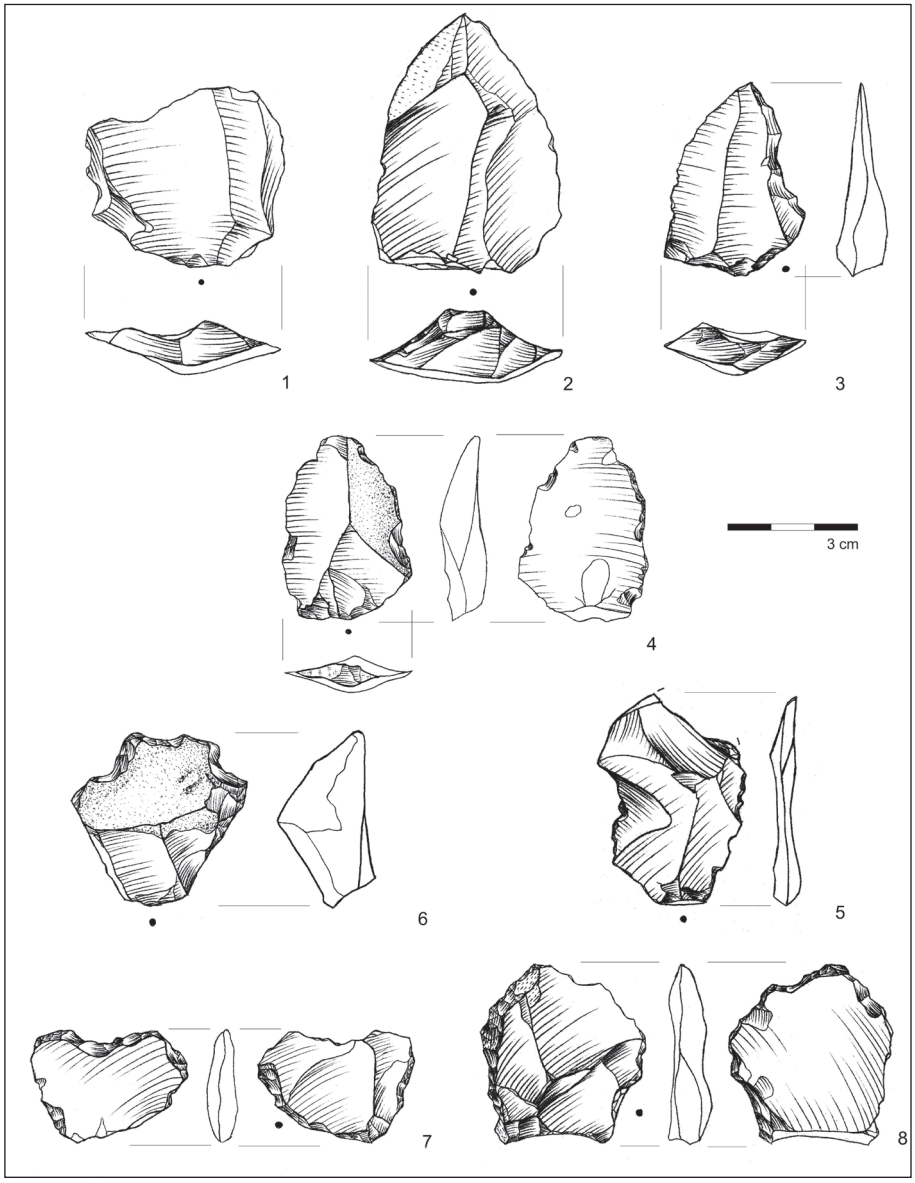
10. al-Fayṣaliyyah. Levallois core (Drawing: B. Witkowska).

2017 are related to the Neolithic and Bronze Age. In comparison with Palaeolithic materials, they are much less numerous. Like the Epipalaeolitic items, they were concentrated in the western part of the site. It seems feasible to attribute part of the tang of blade point to the Neolithic; it was found in square B5212 (**Fig. 14**:8) and was perhaps a part of an irregular blade of medium size. A dozen or so tabular scrapers made of flat cortical flakes (**Fig. 14**:1-3) and a group of standardised flake perforators (**Fig. 14**:4-7) probably date to the Bronze Age (Rosen 1997: 68-69, 71-79).

al-Munqaṭi'ah

During investigations at the al-Munqaṭi'ah site in 2017, a total of 554 chipped lithics were found. About half (282 pcs) were collected on the ground surface, including 18 pcs within the excavation unit and 264 pcs in the neighbouring area. Within L1 and L2, which on the basis of their stratigraphic placement represent the latest stage of the site's development, 81 artefacts were recorded. Their status in terms of homogeneity is analogous to finds from the surface. Loci related to earlier phases yielded a total of 49 artefacts for stratum 2 and 76 for stratum 3. Within the lowest stratigraphic unit investigated in 2017, designated stratum 4 (L10), 66 chipped lithics were discovered.

An important observation that may facilitate interpretation is the lack of pottery in the excavated part of L10, which stands in contrast to higher layers. Thus, the chert assemblage from



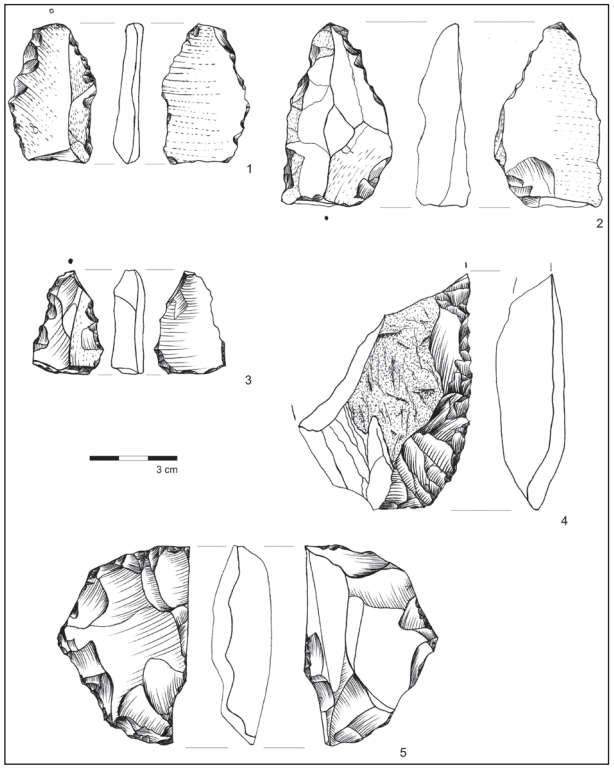
11. al-Fayṣaliyyah. Levallois flake (1), Levallois points (2-4), notches and denticulates (6-8) (Drawing: B. Witkowska).

stratum 4 ought to predate the Pottery Neolithic (PN), making it earlier than the mid 7th millennium BC. Indeed, within this stratum there are artefacts characteristic of the PPNB or PPNC, or - using the terminology proposed by J. Shea (2013) - the Middle Neolithic. These include fragments of two projectile points (**Fig. 15**:2-3; **Fig. 16**) which are considered a subtype of Helwan point (Shea 2013: 244, Figs. 7.12, 7.27). We may add that an intact triangular point with almost identical features was found on the surface of the excavation square (**Fig. 15**:1).

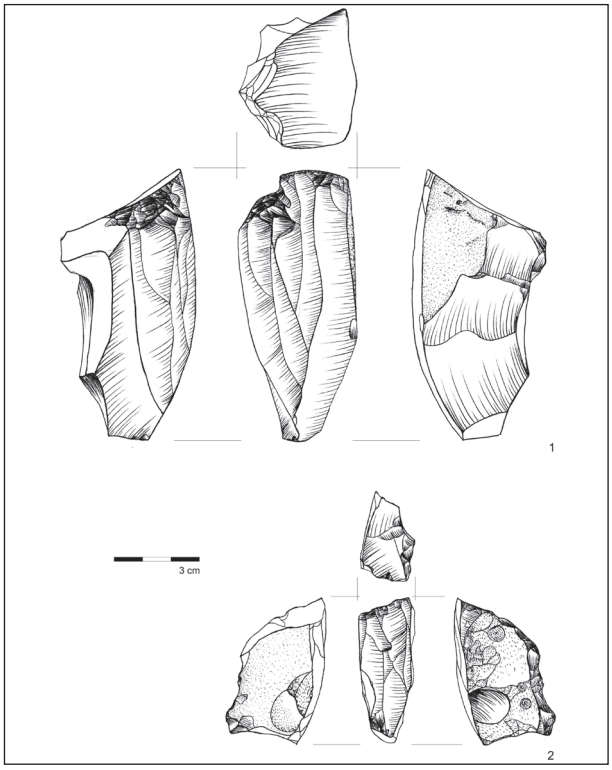
Fragments of regular blades and bladelets, often - presumably - long and narrow, are an important component (30 pcs) of the stratum 4 (L10) assemblage. These have characteristics that are considered typical of the Middle Neolithic (Shea 2013: 223-228).

As discussed, the sediments denoted as L5, L6 and L7 and the pit holes designated L8 and L9 were combined into a single stratigraphic complex called stratum 3. This complex is obviously younger than the underlying one. Consequently, the 76 chert artefacts from stratum 3 should likewise be considered younger than those from stratum 4. Of course, it cannot be ruled out that some artefacts may have moved secondarily from stratum 4 (L10) to stratum 3. In all stratum 3 loci, there is a significant quantity (140 pcs) of ceramic fragments associated with the Late Neolithic Jericho IX culture. This certainly colours our view of the stratum's date and probably that of most of the chert assemblage. Alas, it should be emphasised that - from a chipped-stone perspective - the Jericho IX culture is loosely defined. As J. Shea says "our picture of Jericho IX lithic technology is informed mainly by the Jericho excavations and surface collections/test excavations at sites with Jericho IX pottery" (Shea 2013: 283).

The aforementioned group of 76 lithic artefacts from stratum 3 consists of not-very-regular blades and bladelets, obtained from single-platform cores and irregular flakes, as well as from double-platform and multi-platform flake cores. The material is highly fragmented, hence it is difficult to be precise about the numerical ratio of blades/bladelets to flakes. The former, however, remain a minority; 16 specimens can be clearly classified in this category. Approximately one-third of all artefacts have retouched edges, but in most cases it seems to be the result of utilisation. Perhaps in just one case is there a typological awl, made on a flake (**Fig. 15**:5).



12. al-Fayṣaliyyah. Points (1-3), scrapers (4-5) (Drawing: B. Witkowska).

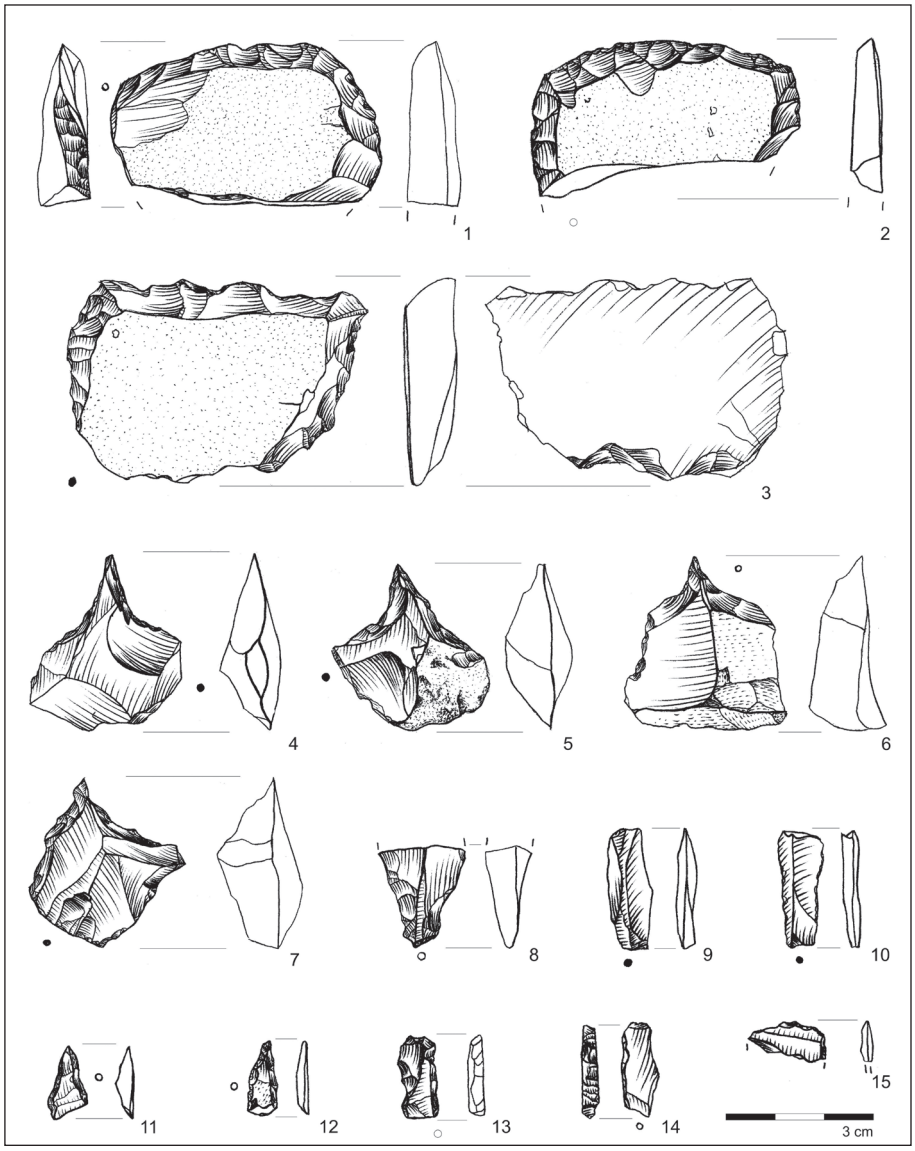


13. al-Fayṣaliyyah. Single-platform bladelet cores (1-2) (Drawing: B. Witkowska).

In addition, there are styloid burin negatives on two flakes and two blades. L7 is the only location where a fragment of a more regular prismatic blade, from a single-platform core, was found. It has a lateral cortical surface, as exploitation of the core led to widening of the flake-release surface. One might wonder if this blade is intrusive or residual from the lower layer (L10). In the same locus, three fragments of more regular bladelets were also found. We might add that the frequency of blades here is highest (nine items out of 21). In the stratum 3 assemblage, there are no extensively retouched projectile points or sickle inserts, which are considered determinants of the Late Neolithic. However, we should note that the further one moves south within the Levant, the fewer such points are found; in complexes such as Qatifian or Besorian - known from Sinai, the Negev and southern Jordan - they are extremely rare. One way or another, an increasingly prominent flake-based industry is a Late Neolithic trait, including excavated assemblages of the Jericho IX culture (Shea 2013: 280-283).

In the sediments belonging to stratum 2, fragments of ceramics characteristic of the Jericho IX culture (81 items) were also discovered. The findings affect the chronology of these layers as well as the chronological and cultural affiliation of the 49 associated chert items, which occurred here in L3, L12 and L13. As before, it is a mixed inventory, consisting of a blade/bladelet group (**Fig. 15**:8) and a group of not-very-regular flakes (**Fig. 15**:6-7,11).

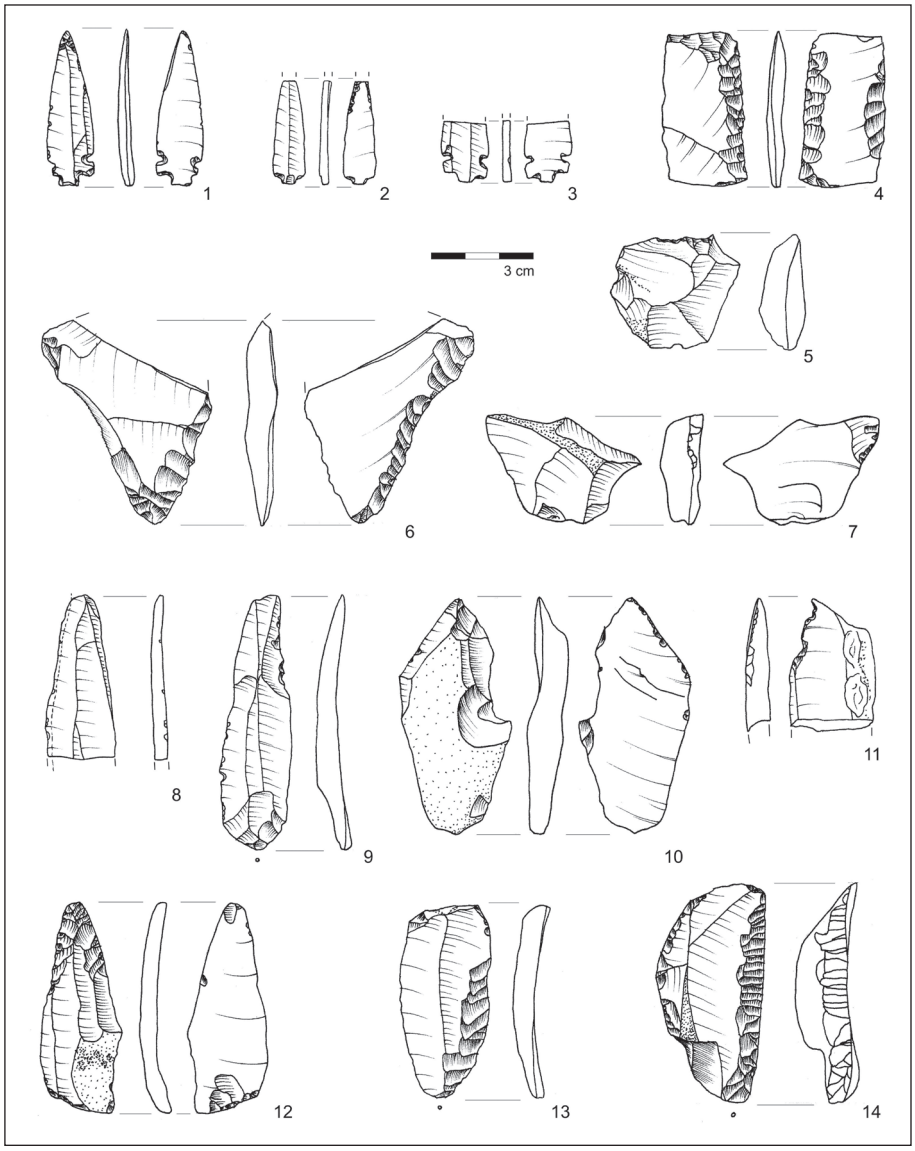
Stratum 1 comprises near-surface sediments, probably non-anthropogenic, associated with



14. al-Fayṣaliyyah. Tabular scrapers (1-3), perforators (4-7), tanged point? (8), bladelets (9-10), microlithics (11-15) (Drawing: B. Witkowska).

local erosion processes. This means that the 81 chipped lithics recorded there most probably constitute a secondary mix-up. This assemblage consists of irregular flakes and chunks, alongside a few not-very-regular blades. Only one specimen is a more regular bladelet (**Fig. 15**:9). One of the cortical flakes can be formally classified as a notched tool (**Fig. 15**:10).

Surface finds constitute the largest group. Their preliminary analysis allows us to distinguish only a few characteristic specimens, in addition to the already mentioned projectile point of Abu Salem type (**Figs. 15**:1**, 16**), which may possibly be associated with specific cultural and chronological units. Several specimens with regular, 'laminar', invasive retouch on the dorsal face should be mentioned in the first instance. The parallel scars of this retouch presumably result from pressure flaking. These specimens may be described as knives (**Fig. 15**:13-14) or perforators (**Fig. 15**:12). The retouch, in turn, although it may have originated in the beginning of the Middle Neolithic, is considered a distinctive feature of the PPNC. The high frequency of such retouch in the Late Neolithic period, including the Jericho IX culture (Shea 2013: 278, 280, 283), represents a continuation of this trend. Several of the specimens are fragments of regular blades -unifacial or bifacial with backed or invasive retouch (**Fig. 15**:4)- that resemble geometric sickle inserts, although no sign of silica gloss was found. One of them is characterised by flat invasive retouch, which may suggest a Late Neolithic provenance (Shea 2013: tab. 7.7, fig. 7.28). However, owing to the specimen's geometrical



15. al-Munqaṭi'ah. Projectile points (1-3), blade with invasive retouch (4), awl? (5), retouched flakes (6, 7, 11), retouched bladelets (8, 9), notched tool (10), perforator (12), knives (13-14) (Drawing: J. Kościuk).

outline (*cf.* Rosen 1997: 55, figs. 3.15-16), a much later chronology cannot be ruled out, perhaps extending from the Middle Bronze Age to the beginning of the Iron Age (Rosen 1997: fig 3.19). Two small, carefully made borers could in turn have Neolithic provenance (Shea 2013: fig. 7.20. k-l). Generally speaking, it seems that the surface material contains components associated with the Neolithic and Bronze Age.

Pottery

al-Fayṣaliyyah

From a chronological point of view, the pottery assemblage can be divided into two separate groups. The first consists of sherds found in the upper layers, *i.e.* on the surface and in topsoil.

Some specimens that can be added to this group, *viz*. very small sherds, were found in lower strata. Their presence can be explained by the phenomenon of bioturbation. The pottery was made from well-developed clay using a potter's wheel. This horizon is associated with later periods, most probably Nabataean/Roman (*cf.* Hendrix 1997: 227-250). However, more precise attributions are impossible owing to a lack of diagnostic fragments.

The other group consists of poorly fired, handmade pottery, with the remains of coiling visible on various fragments. The pottery-surface colours range from dark brown and red-brown to dark grey, very often with dark grey sections. Clay was mixed with fine to coarse mineral temper. No traces of surface treatment were observed. Unfortunately, only one diagnostic sherd was found, *viz*. a rim fragment of a holemouth jar, which substantially limits the scope of our interpretation. Such pottery occurred from the Neolithic onwards, to become a hallmark of the EB. Vessels of this type were used as cooking pots or for storage (Amiran 1969: 55). Although one generic rim is not enough for us to date the whole assemblage, judging by the production technology, temper and absence of surface treatment, the pottery is likely to date back to late prehistoric periods, presumably the EB. This pottery belongs to several (probably four) holemouth cooking pots used for food preparation or storage. This is clear evidence of the settlement practices that probably developed at the site during the EB. The limited range of pottery types may be indicative of temporary occupation of the site (*cf.* Saidel 2011: 67-79), perhaps by a nomadic tribe that used to spend a part of the year in an area that was likely connected with economic or agricultural activities.

16. al-Munqaṭi'ah. Projectile points (1-3) (Photo: P. Kołodziejczyk).

al-Munqaṭi'ah

The pottery at the al-Munqaṭi'ah site was collected from the surface and from two other stratigraphical units. A total of 297 sherds were found. All of them, except for three surface finds, represent the same chronological horizon. The three surface finds are Roman-style pottery fragments that probably washed out from elsewhere, most likely the top of the wadi banks.

During the excavations at al-Munqaṭi'ah, pottery was found in stratum 2 and stratum 3. In the first case, its presence was associated with a stone construction, most probably part of a house or a surrounding stone wall. Part of the structure's western side (W11) was excavated in the eastern part of the probe. During the work, the probe was extended to the east, whereby the posited internal part of the structure (L13) was reached. Pottery was present on both sides of the construction. There is no chronological difference between sherds from the hypothetical inside and outside of the building, but it should be noted that the assemblage is relatively small.

In stratum 3, pottery was found in layers

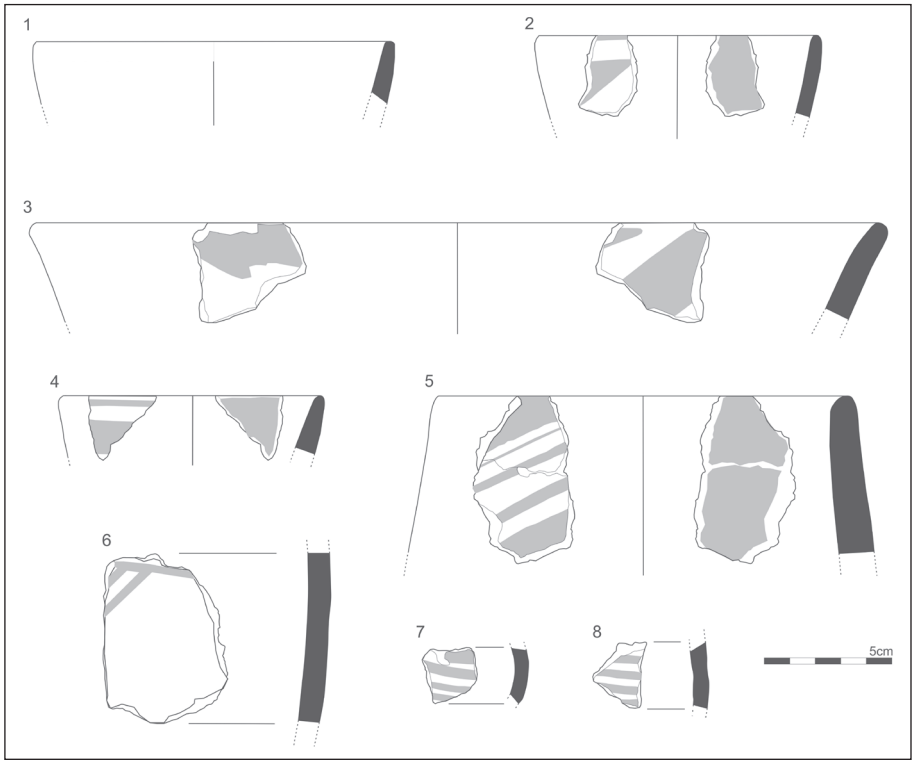
connected with the fire pits (L7; L8; L9) and in the ashy layer covering the area (L6). Pottery from stratum 3 bears the same type of decoration as that from stratum 2.

The most distinctive features of the al-Munqaṭi'ah pottery are poor firing, colour ranging from buff-orange to reddish, mineral temper of different sizes, and smoothed surfaces achieved by using grass or straw. A large number of sherds bear distinctive geometric decoration executed over a light coloured slip. No traces of plastic decoration or incisions were observed in the assemblage (**Fig. 17**).

The quality of production, decoration and surface treatment suggest a rather early origin of the finds (**Fig. 18**). Similar decoration, that is to say thin lines of reddish-brown paint over a pale background, is known from EB1B sites with basketry or Line Group Painted Ware (LGPW) (*cf.* Braun 2012: 13-15, figs. 5-6). A closer examination of the painting shows that the surface covered with colour was later burnished, which is atypical for EB1. Beyond doubt, the pottery excavated at al-Munqaṭi'ah belongs to the PN period, bearing decoration typical of the Jericho IX horizon (*cf.* Garfinkel 1999: 68).

The number of diagnostic fragments is too small to permit the reconstruction of specific types of vessel. There are two main types of pottery in the assemblage. The first group consists of wide, large- or medium-sized bowls with straight walls and a simple rim. Most of the fragments belonging to this category are decorated with painting. In Garfinkel's terminology, they represent Types C1 (*cf.* Garfinkel 1999: fig. 45) and C6 (*cf.* Garfinkel 1999: fig. 48). Additionally, the presence of Type C7 (*cf.* Garfinkel 1999: fig. 49), *viz*. hemispherical bowls, was also noted. We were able to fully reconstruct one of the bowls. It was decorated with thick lines starting a little below the rim and going diagonally towards the base of the vessel. Close analogies are to be found, for example, at Jericho (Kenyon and Holland 1983: fig 5:4). In addition to bowls with thick lines, there are various examples decorated with series of thin parallel lines. Less frequent is geometric, triangular decoration, similar to the example from Ghrubba (Mellaart 1956: fig 5:89).

The second group comprises decorated and undecorated closed vessels. Amongst the sherds, fragments of Jericho IX jars were noted. Other fragments represent necked pithoi (group F4 [*cf.* Garfinkel 1999: fig. 61]) and, probably, holemouth pithoi (group E4 [*cf.* Garfinkel 1999: fig. 52]). Aproximately 20% of sherds were decorated.



17. al-Munqaṭi'ah. Pottery of Jericho IX Horizon (Drawing: B. Klose, J. Ledwoń, B. Witkowska).

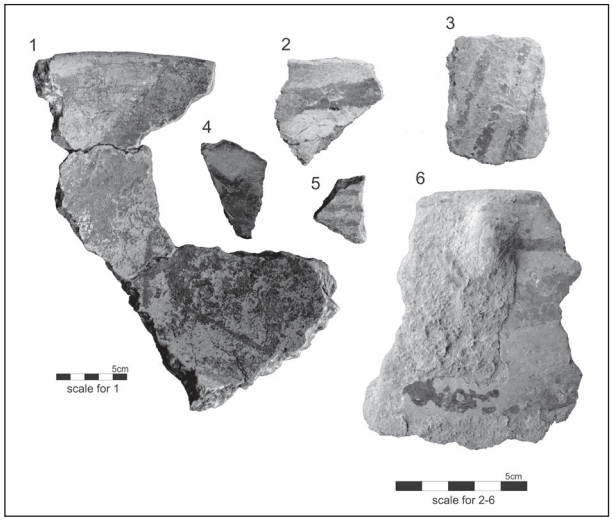
The clay used in production was mixed with mineral inclusions. Medium-sized grits of raw calcite were also observed. The grits have visible fresh breaks and sharp edges. On larger vessels, the clay was tempered with mineral inclusions of different sizes. Between the medium-sized grits, large pieces of calcite are also visible.

The pottery from al-Munqaṭi'ah is representative of the Jericho IX horizon. There is no doubt that the sherds recovered from the probe bear features typical of that culture. The vessels have good analogies at other Jericho IX sites, such as Jericho (*cf.* Kenyon and Holland 1982, 1983), al-Lud (Brink *et al*. 2015: 174-177, figs. 30-31) and Tulaylāt Baṭash (Kaplan 1958). The nearest sites with similar pottery are Khirbat adh-Dharīḥ (Bossut *et al.* 1988) and adh-Dhirā', where it was discovered in the 1970s during testing of the surveyed area (Bennett 1980). In the opinion of the excavators, work carried in the area in the 1990s resulted in the identification of EB1 pottery, but closer examination of published material (*e.g.* Kuijt and Mahasneh 1998: fig. 3) reveals the presence of decorated Jericho IX sherds amongst possible EB forms.

Preliminary Conclusions

During the 2017 prospection on the al-Fayṣaliyyah site, two zones with traces of prehistoric human activity were distinguished. Judging by the distribution of artefacts, and based on comparison of the archaeological evidence with geological observations, it may be concluded that the area was probably used for settlement and farming activities. In several places, traces of stone structures were observed. These were mostly stone walls, stone circles and cairns. Regarding the objects recovered in 2017, it's worth emphasising that the huge number of chert tools detected in the area of investigation - the amount of pottery was less - suggests that the terrain was intensively utilised during prehistory, specifically during the Palaeolithic - Neolithic periods. Other artefacts may be attributed to the Early Bronze Age. The most interesting objects probably relate to the Stone Age (Palaeolithic and Neolithic), which is very commonly represented in the area. Some may be linked to pastoral PPNB - PN cultures represented in the Jafr area (*e.g.* Fujii *et al*. 2017). We are planning wide-ranging studies on this issue in future years. A significantly smaller number of chert tools and pottery fragments can be related to later periods. A number of small finds also indicate the presence of later layers (**Fig. 19**).

As mentioned above, two areas with stone architecture were cleared and partially excavated within the al-Fayṣaliyyah site. The main aim of this activity was to determine the type and purpose of the stone structures discovered there. One of them is particularly interesting, as it contains a carved stone object of a type known from pastoral Neolithic sites (Fujii *et al.* 2017: 571, 572, 575-6). It was used here as part of a wall construction, probably to ensure protection against water activity. This assumption is based



18. al-Munqaṭi'ah. Pottery of Jerycho IX Horizon (Photo: P. Kołodziejczyk).

19. al-Fayṣaliyyah. Stone pendant from trench E.

on analogies to other very similar constructions (*e.g*. Fujii *et al.* 2012: 143, fig. 20) known from Jafr basin sites located about 100km east of al-Fayṣaliyyah. These are often described as barrages, securing important pastoral areas or directing water to other areas (Fujii *et al*. 2012, 2017). The structure may be the harbinger of a whole system of similar structures in this place, because they usually occur in clusters covering a significant area.

Another research question relates to the stone mounds found at the site. Two of these cairns were tested in 2017, but neither yielded information that would allow them to be attributed – even hypothetically - to a specific activity or date. However, similar mounds are present in many places in southern Jordan and wider studies on the phenomenon are necessary.

On the al-Munqaṭi'ah site, two zones with traces of prehistoric human activity were identified and preliminarily investigated in 2017. However, it is necessary to emphasise that the entire valley is distinguished by archaeological material lying on the surface. In the first zone, a small trench was laid out and excavated. It seems very clear that within this trench we encountered the remains of settlement structures that should be examined in future seasons. The artefacts found within these structures indicate that we are dealing with a sequence of Middle to Late Neolithic utilisation of the area. However, other artefacts suggests that the site also includes Chalcolithic, EB and perhaps even later elements. These will require much more work in subsequent seasons. The second zone (S1) was the area within the al-Munqaṭi'ah site where the surface survey was conducted. This yielded around 300 chert artefacts, representing Palaeolithic, Neolithic and later periods. The aforementioned survey area was located 95m north-west of the excavation trench and covered 1,120m². This zone was isolated as an area of reference against which to perform comparative analyses using material recovered from the excavations.

As for the objects recovered at al-Munqaṭi'ah during the 2017 season, both from excavation and survey, it is worth emphasising that the huge quantity of chert tools detected in the survey area and relatively high frequency of pottery (some with traces of decoration), suggest that the landscape was intensively exploited in later prehistory, specifically during the Neolithic period. The most interesting objects (*e.g.* arrowheads; pottery fragments) are probably related to the PN, which is very commonly represented in this area and - in our preliminary opinion - may be linked to the Jericho IX culture. This would make al-Munqaṭi'ah the southernmost known site of this chronological horizon. We are planning broad studies on this issue in future years. There is also no doubt that work on the site should continue in order to protect the area against looting, the traces of which are very clearly visible on the ground surface.

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