LA TROBE UNIVERSITY'S 2015 GEOLOGICAL SURVEY AND ARCHAEOLOGICAL EXCAVATION SEASON AT THE NATUFIAN SITE OF WĀDĪ ḤAMMEH 27

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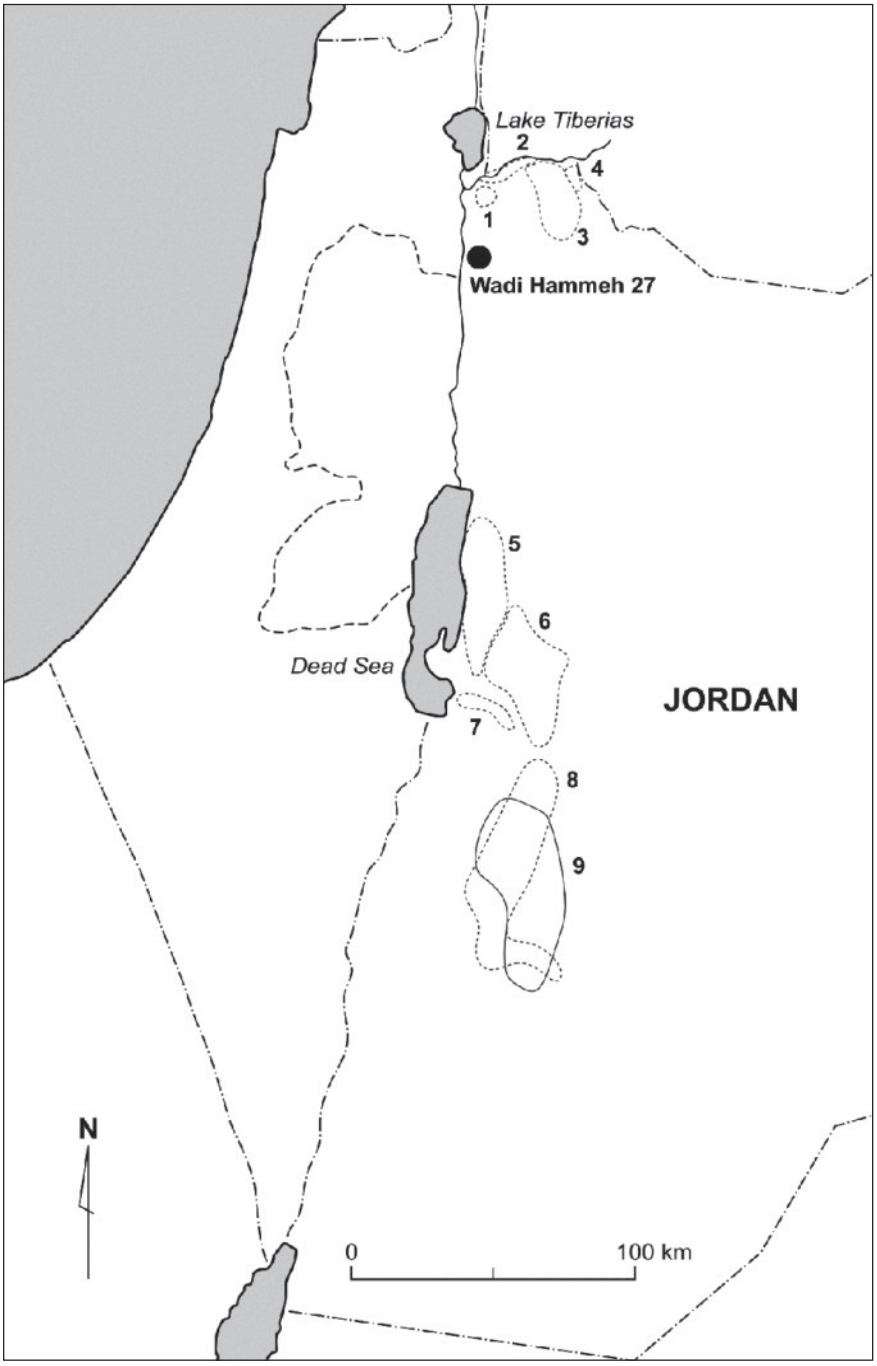
Introduction

The second field season of the 'Ice Age Villagers of the Levant: Sedentism and social connections in the Natufian period' project was undertaken by La Trobe University from November 2 to December 17, 2015[1]. The operations were based on excavations at the Natufian site of Wādī Ḥammeh 27 (**Fig. 1**), near Tabaqat Fahl (Pella). During the first season in 2014 (Edwards *et al*. 2018), a large area of the Phase 2 occupation surface in Plot XX F was revealed. In 2015, the underlying Phase 3 deposits were excavated over the same area, and work was begun on the basal Phase 4. Phase 3 excavations at Wādī Ḥammeh 27 yielded an oval house structure, smaller than houses previously excavated at the site, and two well-defined exterior stone features, in the form of a circular stone ring and a stone-ringed posthole. Key finds in 2015 were a number of bone tools, including points, hafts, and some new types of pendants. Important examples of miniature bowls and plates were also found, along with a number of small items in bone and stone, which were incised with geometric images.

In parallel, survey and sample collection operations away from the main site were continued. The survey of basaltic rock sources in western Jordan, commenced in 2014 by John Webb, was extended further south than previously (at Ḍana and Ṭafilah), and also continued near Umm Qays in the north of the country. Louise Shewan sampled additional areas to those from 2014, thus increasing data for the construction of a map of bio-available strontium. Christophe Delage completed his survey of chert (flint) resources, discovering the origins of all chert types used by the inhabitants of Wādī Ḥammeh 27. Luminescence dating samples were taken from the Natufian sites Wadi Khawwan 1 at Tabaqat Fahl (Edwards *et al*. 1998), and Wādī Ḥisbān 6 (as well as the underlying Epipalaeolithic sites of Wādī Ḥisbān 2 and Wādī Ḥisbān 5, previously excavated by Phillip Edwards between 1988 and 1994 (Edwards *et al*. 1999), in order to ascertain

1. The 2015 fieldwork season at Wādī Ḥammeh 27 and other localities in the Jordan Valley and adjacent areas was undertaken as part of the 'Ice Age Villagers of the Levant: Sedentism and social connections in the Natufian period' project, funded by a three-year, Australian Research Council (ARC) Discovery Project grant (DP140101049). The project is based at the Department of Archaeology and History, La Trobe University, in Melbourne, Australia. The fieldwork was undertaken with the gracious support of Dr. Munther Jamhawi and the assistance of staff from the Department of Antiquities of Jordan, under Excavation Permit 2015/67. In-field Department of Antiquities' staff were representatives Mr Musa Malkawi and Ms Alia Khasawneh. Mr Ehab Jariri and Mr Qutaiba Dasouqi carried out a survey and assembled an aerial photographic mosaic image of the excavations at Wādī Ḥammeh 27. Our team is also grateful for support from the Tabaqat Fahl office departmental inspector, Muhammad Shalabi, and his staff. Jordanian house staff at Tabaqat Fahl was comprised of Alladīn Madi (house manager and logistics), Khalid Jawahiri (chef), Nawal Tawfiq (laundry), Salim Hmid (house guard) and finds processors Nasr Hassan and Tail Ayyad. Finds processors also included University of Jordan archaeology students Mohammad al-Attrash and Yusuf Barmawi, arranged by courtesy of Dr Maysoon al-Nahar. Local Jordanian excavation staff from Tabaqat Fahl and Masharia were Khalal Khashashneh (Abu Khalid), Noureddine Khalid, Ibrahim Tawfiq Muhammad, Nasr Hassan, Walīd Khashashneh and site guard Yusuf Salim Hmīd. Excavation work at Wādī Ḥammeh 27 was directed by Phillip Edwards and carried out by La Trobe University students Rosemary Robertson and Adam Valka (square supervisors). Cathy Carigiet undertook drawing and Isabella Capezio was the project photographer. Project field scientific staff included Associate Professor (Dr) John Webb (project co-director, geology and basalt sourcing) of La Trobe University, Dr Louise Shewan (project co-director, geochemistry) of Monash University (Melbourne, Australia)/ University of Warwick (UK); and Dr Christophe Delage (chert sourcing) of the Department of Prehistory, National Museum of Natural History, Paris, France.



1. Location of Wādī Ḥammeh 27 and basaltic rock provinces, indicated by dashed grey lines: 1) Umm Qays, 2) Yarmouk and Raqqad, 3) Irbid West, 4) Irbid East, 5) North-East Dead Sea, 6) Shihan 7) Karak, 8) Dana, 9) Juf ad-Darawish.

the temporal relationship of these small sites with the large Wādī Ḥammeh 27 'base-camp'. Several scientific samples of rock, sediments and vegetation were exported to colleagues in Australia, France and the U.K.
(P.C.E.)

Provenance of Basaltic Artefacts

In the 2014 field season, a portable Olympus XRF-Analyzer was used to characterise a sample of Natufian basalt artefacts from Wādī Ḥammeh 27 stored at the Pella dighouse, as well as outcrops of basalt in north-western Jordan and around the Dead Sea (Edwards *et al*. 2015). In the 2015 field season, further outcrops of basaltic rock were analysed south-west of the Dead Sea, as well as additional samples of the basalt around Umm Qays and the basalt artefacts recovered from the 2015 season of excavations at Wādī Ḥammeh 27. For

comparison, the basalt columns and the basalt used to construct the theatres and shop fronts at Umm Qays (Gadara) was analysed, and later period grindstones, columns, vessels and pestles at Pella were also analysed.

A close examination of the outcrop patterns and a review of previous studies on the basalts of the area verified that several basaltic provinces can be distinguished. There are three older shield volcanoes that have been strongly dissected by wadi erosion; these are (from south to north) Dana, Shihan and Irbid (**Fig.1**). In addition, the basalt outcrops at Umm Qays and east of Irbid represent the southern margins of separate shield volcano eruptions to the north on the Golan Heights and southern Syria respectively.

There are younger scoria cones with relatively limited lava flows in two areas; on the north-eastern margin of the Dead Sea and to the south-east around Jurf ad-Darawish. There are also two younger lava flows within the Yarmouk river valley; the topographically higher (older) Yarmouk flow and the Raqqad flow.

Plotting the Yttrium /Niobium ratio against the Zirconium/Niobium ratio for all outcrop samples demonstrated that it is possible to differentiate many of the basalt provinces, although there is often some overlap between them. In particular, the southern basalts have lower values of both ratios than the northern basalts. This new survey data has already modified the basaltic provinces plotted in the previous project report in this journal (Webb in Edwards *et al*., 2015: Fig. 1). Along with some revision, such as that the 'Yarmouk' flow is here relabelled as 'Yarmouk and Raqqad', 'al-Qaṣr' is relabelled as 'Shihan', and the new provinces of 'Dana' and 'Juf ad-Darawish' have been added.

Comparing the analyses of the Natufian basalt artefacts with the outcrop analyses shows that the artefacts have a greater spread of values than any single basalt province, i.e. they were derived from a variety of outcrops. Most of the artefacts are similar to the nearby basalts at Umm Qays and Irbid, but several were most likely obtained from basalt outcrops to the south around the Dead Sea.
(J.W.)

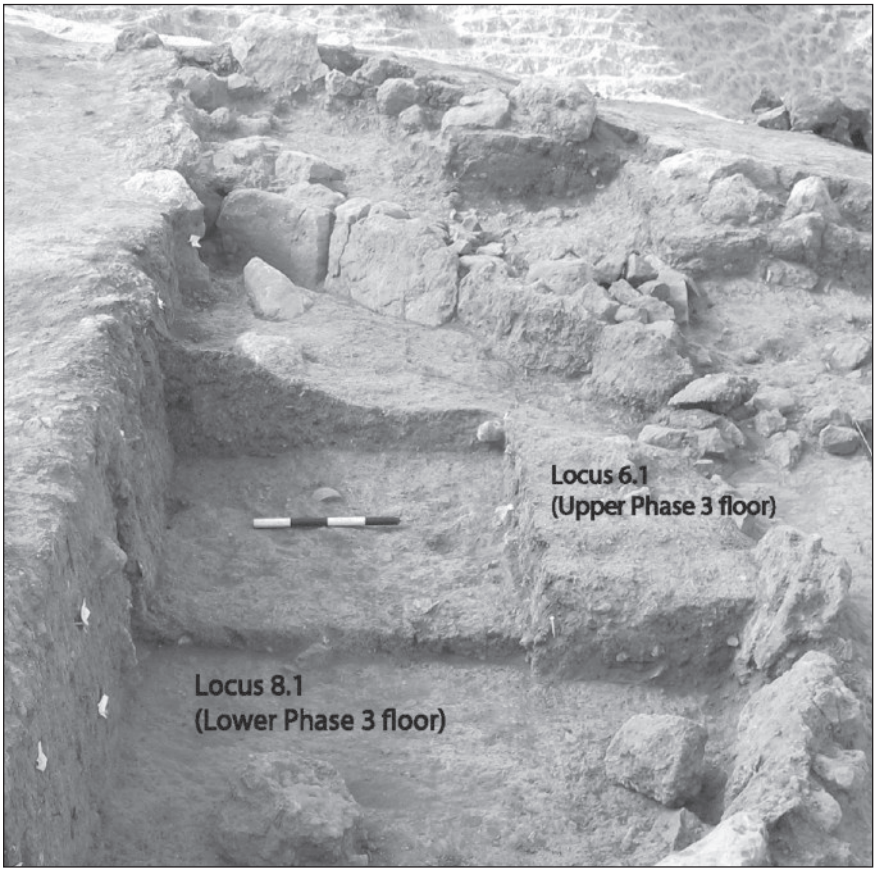
Provenance of Cherts Used At Wādī Ḥammeh 27

During the 2014 and 2015 field seasons, a geoarchaeological survey was conducted that enabled us to identify and observe numerous chert-bearing outcrops, as well as to collect samples of geological cherts. Following the analysis of these various lines of evidence, we are now in a position to draw conclusions on the potential of each *in situ* geological formation (**Figs. 2, 3**) and the lithic landscape (chert availability) for Wādī Ḥammeh 27 (**Fig. 4**).

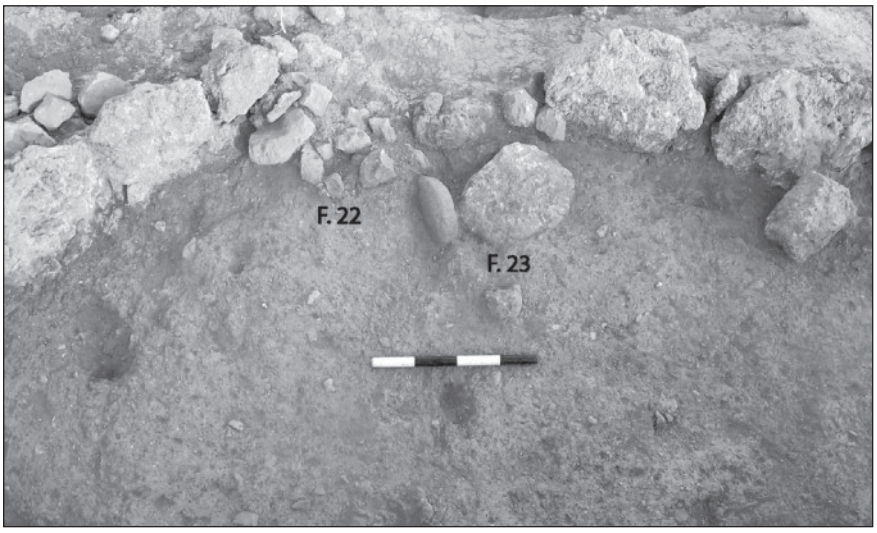
The Turonian period, represented by the Wādī as-Sir Limestone Formation (hereafter WSL), is characterized by several important features for our discussion. The WSL exposures visited during our survey all yielded small irregular chert nodules of coarse-grained texture embedded in a hard dolomitic sediment. If we extend this characterization to the whole formation, and to all of the WSL chert-bearing exposures, we may conclude that silicifications are rare, of poor quality for flint knapping, and difficult to collect directly at outcrops. Thus, we may argue that it holds only a minor position in terms of raw material availability in the picture we are trying to draw regarding the lithic landscape around Wādī Ḥammeh 27.

The Coniacian-Santonian (Wadi Umm Ghudran Formation [hereafter WG]) corresponds to small exposures of limited geographical distribution, usually located in our surveyed area at mid-elevation and along steep wadis. These outcrops are not easy to access. Even though small lenses of grey chert and dark-brown, compact beds are present, they are not a common feature within the soft-weathering matrix and are of rather poor quality. Overall, this lithology may also play a marginal role in the lithic landscape around Wādī Ḥammeh 27.

By contrast, the Campanian period (Amman Silicified Limestone Formation [hereafter ASL]) is typified by abundant silicifications within white outcrops throughout the southern Levant. Another positive point is the fact that the ASL exposures are quite extensively distributed geographically in the surveyed area, and are rather easy of access, located toward the bottom of steep wadis and at mid-elevation (**Fig. 2**). Moreover, various siliceous lithologies and colours may be observed. However, these



2. Distribution of the Amman Silicified Limestone Formation and location of survey visits for chart samples in the formation.



3. Distribution of the Muwaqqar Chalk-Marl Formation and location of survey visits for chert samples in the formation.

silicifications are rather difficult to extract directly at the outcrops, being embedded in a hard limestone matrix, and/or are usually of poor quality, especially the brecciated types. These latter cherts break easily through multiple fracture planes into small blocks (up to 5 cm in maximum length); in these cases, the texture appears very fine-grained and translucent, closely resembling chalcedony. Based on the variability and quantity of the siliceous rocks encompassed here, this ASL unit constitutes an important component in the lithic landscape around Wādī Ḥammeh 27, but the relative lack of suitability for flint knapping and the hard nature of the carbonate matrix for direct procurement may make these silicifications quite unattractive in their primary context.

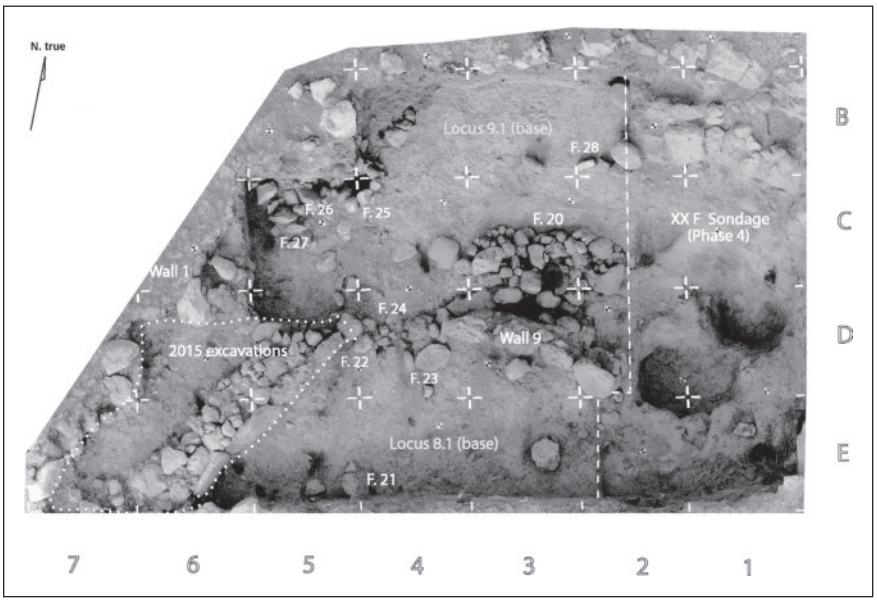
The same conclusions also apply to the

next two *in situ* chert-bearing formations in the sequence: the Muwaqqar Chalk-Marl Formation (hereafter MCM), at the Cretaceous-Tertiary boundary (Maestrichtian-Paleocene) and the Umm Rijam Chert-Limestone Formation (Lower Eocene [hereafter URC]). The MCM and URC units reveal a relatively extensive geographical distribution in the northern part of our map (**Fig. 3**), provide outcrops easy to access and yielding abundant silicifications (lenses and beds, as well as calcite veins in MCM). Nevertheless, even though these are mostly fine-grained materials very suitable for flint knapping, brecciated cherts of heterogeneous texture are also common in the outcrops. Furthermore, these silicifications are mostly hard to extract due to the nature of the embedding matrix; only a few MCM locations (MCM8, MCM16, MCM17, above Mashari'a) yield silicifications in soft-weathering sediments.

In sum, the WSL and WG formations should arguably be left out of the picture we are trying to reconstruct concerning suitable chert raw materials around Wādī Ḥammeh 27. At the same time, the following formations appear the most important *in situ* geological units to focus on: ASL, MCM, and URC. For most *in situ* geological formations, hard limestone/dolomite appears to be the dominant embedding matrix, which understandably would prevent direct exploitation at the exposures during Natufian times. The Wādī Ḥammeh 27 inhabitants should have ignored most of these primary sources. Yet, with a thorough knowledge of the local landscape and its mineral resources, as we may expect these prehistoric populations to have held, the MCM and URC outcrop distributions could still be considered as reasonable resources to visit and provide reliable chert sources (**Fig. 4**). By contrast, the secondary deposits, in the form of surface cobbles washed into wadi beds, are all easy to access and exploit, and provide good quality siliceous materials. Thus, they too constitute a major resource pool in the lithic landscape around Wādī Ḥammeh 27.
(C.D.)

Sampling Survey Towards A Bioavailable Strontium Isotope-Ratio Map

During the 2015 field season, collection of soils and grass/plant samples continued, in order to extend the baseline reference map of modern bioavailable strontium (Sr) isotope ratios. Sampling was conducted in the Jordan Valley and adjacent highlands to the east, from the vicinity of Tafila and surrounds, northwards to Umm Qays. The survey and sampling exercise resulted in 35 new samples, in addition to those gathered in 2014 (Shewan, in Edwards *et al*. 2018). Subsequent to their export to Australia in early 2016, samples were analysed at the Research School of Earth Sciences, Australian National University, Canberra. Following compulsory Australian Quarantine treatment, grass and soil samples were prepared for



4. Distribution of primary and secondary chert sources next to Wādī al-Ḥammeh in the east Jordan Valley.

Thermal Ionisation Mass Spectrometry (TIMS). Sample pre-treatment varied, according to the material analysed.

Grass/plant samples were placed in porcelain crucibles and ashed overnight at 800° Celsius. Twenty milligrams from each plant sample was placed in an acid-cleaned Teflon beaker and digested in ultrapure concentrated Nitric acid (HNO_3). Following digestion, samples were dried down, then dissolved in 2 Molar (2M) HNO_3 and Sr was separated and concentrated using Sr-Spec ion exchange columns.

Soils were placed in porcelain crucibles and ashed overnight at 800° C. Twenty milligram amounts from each soil sample were placed in an acid-cleaned Teflon beaker and digested in ultrapure (HNO_3) and Hydrofluoric acid (HF). Following digestion, samples were dried down, then dissolved in 2Mr HNO_3 and Sr was separated and concentrated using Sr-Spec ion exchange columns.

Soil leachates: For each sample, 1gram of soil was placed in a centrifuge tube with 1 millilitre (1ml) ammonium nitrate (NH_4NO_3), shaking the suspension overnight to extract the bioavailable Sr component. Following digestion, samples were dried down, then dissolved in 2M HNO_3 and Sr was separated and concentrated using Sr-Spec ion exchange columns.

Following Sr separation, all samples were loaded with Tantalum pentafluoride (TaF_5) onto degassed rhenium filaments and the $^{87}Sr/^{86}Sr$ ratio was measured on a TRITON multi-collector Thermal Ionisation Mass Spectrometer (TIMS).

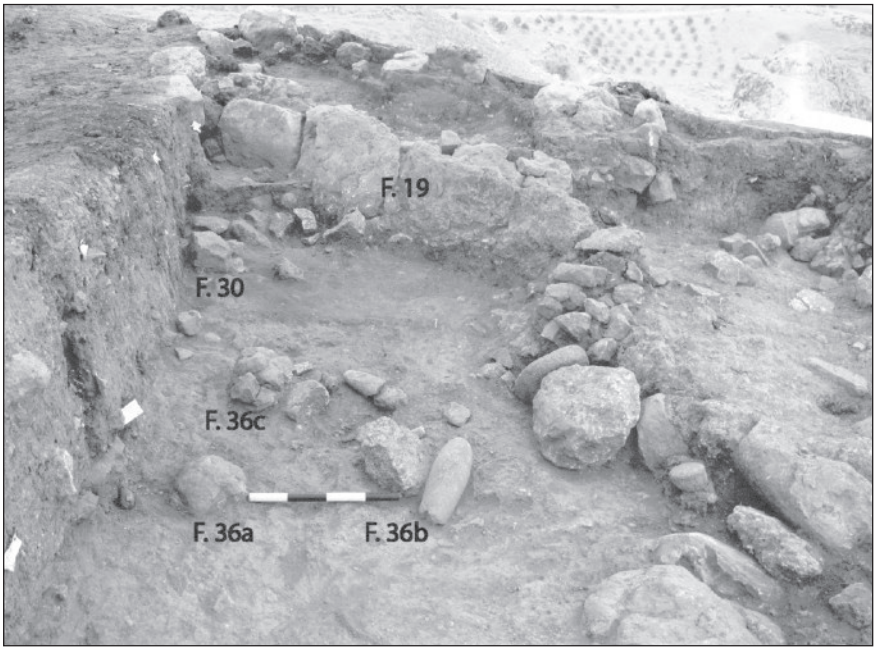
Biologically available strontium may vary from whole rock and soil ratios as a function of differential weathering, atmospheric deposition (e.g. dust and sea spray) and mixing processes. For this reason, our sampling protocol consists of selecting soil and grass/plant specimens from the same location in each sampling area to measure strontium isotopic ratios in the bulk soil, soil leachates and plants. Soil leachates (designed to extract the bioavailable Sr fraction) and plant samples from the same location should yield similar $^{87}Sr/^{86}Sr$ isotope ratios, though some variation may be observed. The range of Sr isotopic variability observed so far ranges from 0.70449 (Mukawir volcano) to 0.70916 (Kfar Rakib). This is a significant difference, as prior results indicated that the Wādī al-Ḥammeh locale should be more constrained in variability. As more samples are tested, we can begin to map isotopic variability in the region, which can then be used to compare the human and faunal archaeological skeletal material against, in order to explore prehistoric mobility. *(L.S.)*

Excavations at Wādī Ḥammeh 27

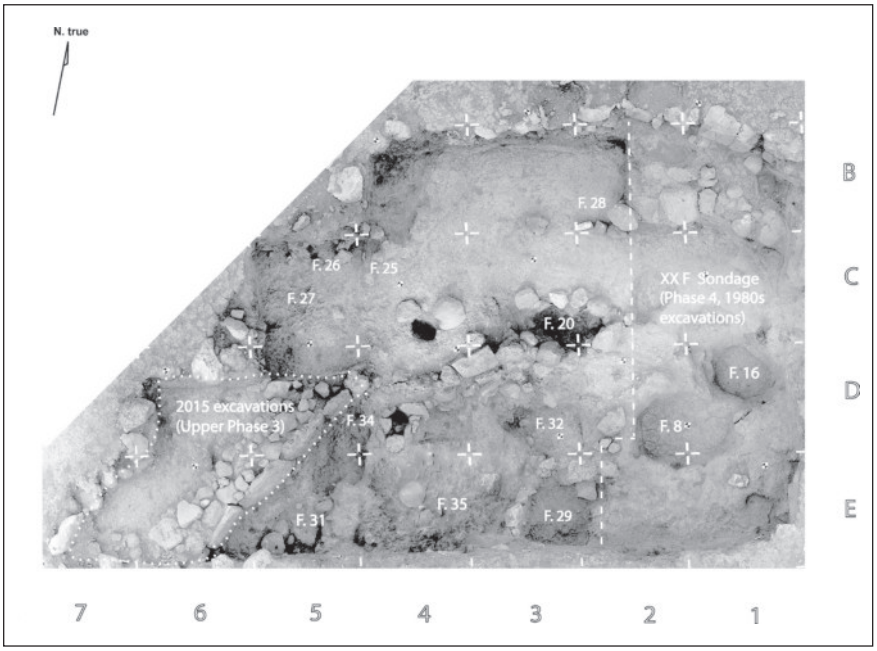
Excavation of Phase 3

In the 2014 season, the Phase 2 floor occupation surface was reached over the entirety of Plot XX F. Excavations continued during 2015 until the Phase 3 floor surface beneath was exposed over the same area (**Fig. 5**). The Phase 3 floor lay, on average, c. 20 centimetres below the Phase 2 one. The principal feature of the lower phase is an oval hut (Structure 3), defined by a substantial stone wall (Wall 9). The wall emerges from the south baulk of the trench in Square E6, and loops around in a semi-circle (**Fig. 6**), returning into the south baulk in Square E1 (the old Plot XX F Sondage, dug in the 1980s). The length of wall-arc is 6.2 metres. As it emerges from the baulk in Square E6, the inner face of the wall is lined by a row of shaped, rectangular limestone slabs, standing almost vertically (**Fig. 7**). The slabs are supported by a broad wall of small to medium sized limestone pieces. Here, Wall 9 is at its most substantial; two courses high and up to 0.78 metres wide. Beyond this, the wall tapers in Square C4, where it is marked solely by a few small, discontinuous stones trodden into the floor. This area may have served as an entrance to the dwelling. Beyond this, in the south of Square C4 and in Square C3, Wall 9 resumes as a single row of large stones, placed upright. The final section of Wall 9, which runs into the south baulk, was discovered in the XX F Sondage and excavated in the 1980s as Wall 2. Inside Structure 3, an earthen floor rises to a clump of large stones, set on a clay mound (F. 18).

Two well-defined circular stone features are placed to the north of Structure 3. To the north-west (in Square C5), a well-formed, discrete stone ring (Feature 17, **Fig. 8**) is built on the floor surface. This was positioned directly



5. Aerial view of the Phase 3 occupation surface (Plot XX F) excavated at Wādī Ḥammeh 27 in 2015; each grid square measures 1 metre by 1 metre. The earlier 'XX F sondage' (Phase 4) is located to the right.

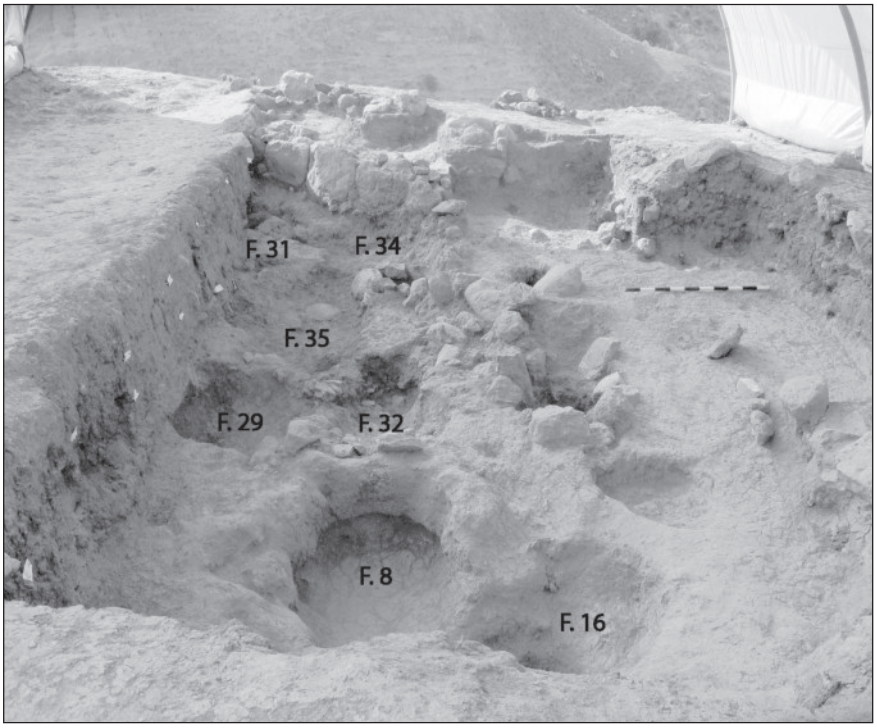


6. View west over the Phase 3 occupation surface (Plot XX F), showing Structure 3 and other features.

below a later circular feature in the overlying Phase 2, (F. 5), which was in turn positioned under a similar feature (F. 8) in the uppermost Phase 1. Feature 12 is a deep, stone-ringed posthole two courses high, located in the northeastern area of the excavation plot (Square C3, **Fig. 9**). It is positioned immediately north of Feature 13, which is a broad cluster of stones. Later versions of Feature 12 also continued throughout the life of the settlement, during Phase 2 as F. 7 and in Phase 1 as F. 6. The two Phase 3 curvilinear stone features (F. 12 and F. 17) are placed relatively symmetrically with respect to the suspected entrance to Structure 3 (**Fig. 5**).

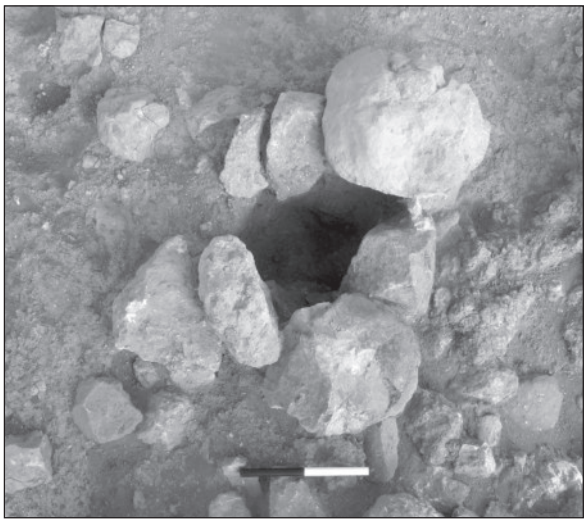
Excavation of Phase 4

Following the completion of Phase 3, the investigation of the underlying Phase 4 commenced. By the end of the excavation period, three squares in Phase 4 had been cleared to a floor surface (Squares C2, E2 and



7. The row of rectangular limestone slabs arrayed on the inner face of Wall 9 in Structure 3.

8. Aerial view of the stone ring (Feature 17), Phase 3.



9. Aerial view of stone-ringed posthole (Feature 12), Phase 3.

E3), while Square C3 remained in progress. The most interesting feature to emerge so far is an elongated oval of stone rubble (F. 19; **Fig. 10**), located in Squares C2 and C3, and evidently continuing into the unexcavated neighbouring Squares D2 and D3. The exposed segment of the feature appears to cap a pit filled with soft sediment. It may mark the location of an underlying human burial dug into the natural travertine rock, and thus figures as an important find with regard to the project aims.

Artefacts

The following descriptions apply on the whole to items retrieved during the excavation

10. View west over Feature 19, an elongated oval of limestone rubble fragments, Phase 4.

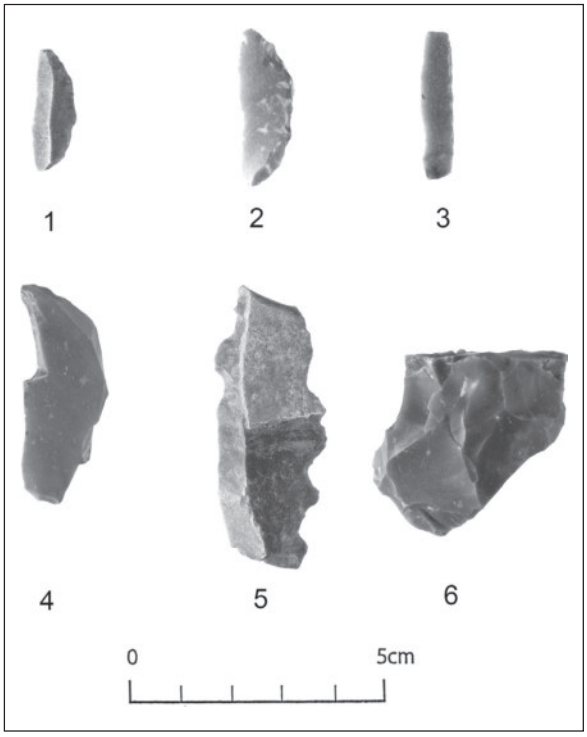
of Phase 3 deposits in 2015 (many bags of sieved residue from Phase 3 remain to be sorted and further small items may be discovered in that process). There were also a few notable items collected from the surface and two from Phase 4.

Flaked Stone Artefacts

Chert (flint) tools recovered from Phase 3 include characteristic types which have previously been described for other phases of the site, including burins (**Fig. 11:4**), Helwan bladelets (**Fig. 11:3**), Helwan-retouched lunates (**Fig. 11:2**), some backed lunates (**Fig. 11:1**), notched pieces and denticulated blades (**Fig.11:5**) and small bladelet cores (**Fig. 11:6**). A notable find was the recovery of a large tranchet axe (**Fig. 12**), a relatively rare type at Wādī Ḥammeh 27 and other Natufian sites (Edwards 2013a: 172).

Bone Tools and Ornaments

Few bone tools emerged from Phase 2 in 2014; however, there were several notable bone



11. Flaked stone (chert) artefact tools from Phase 3: 1) Backed lunate, 2) Helwan lunate, 3) Helwan bladelet, 4) Burin, 5) Denticulated blade, 6) Small bladelet core.

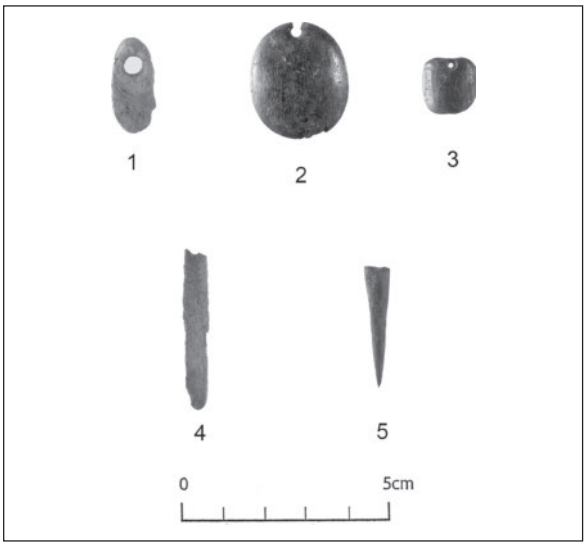
12. Large chert axe, Phase 3.

artefacts and ornaments excavated from Phase 3 and Phase 4 in 2015. A common type at Wādī Ḥammeh 27 has an oval or teardrop shape, and one of these was found on the surface of the site (RN 150002, **Fig. 13:1**). Several less common types emerged from Phase 3, including a broader spheroidal type (RN 150007, **Fig.13:2**), almost complete except for a damaged perforation, and a small, sub-rectangular type (RN 150054, **Fig. 13:3**), smaller than the one other rare rectangular pendant known from Phase 1 (Edwards and Le Dosseur 2013: 262). There is also an elongate artefact (RN 150172**, Fig. 13:4**) with a damaged proximal perforation and a rounded distal end, the use of which is unclear. The right lateral margin and the distal end exhibit high lustre and this item may have functioned as a polisher (*lissoir*), similar to an object (RN 90120) previously identified and of similar shape from Phase 1 (Edwards and Le Dosseur 2013: 251). RN 150172 is also decorated by a series of opposed short incised strokes, emanating from the left and right distal margins on the proximal section of the piece. Several broken bone shafts have previously been found with the opposed-stroke decorative scheme (Edwards 2013b: 302), but none so complete as to identify the artefact type.

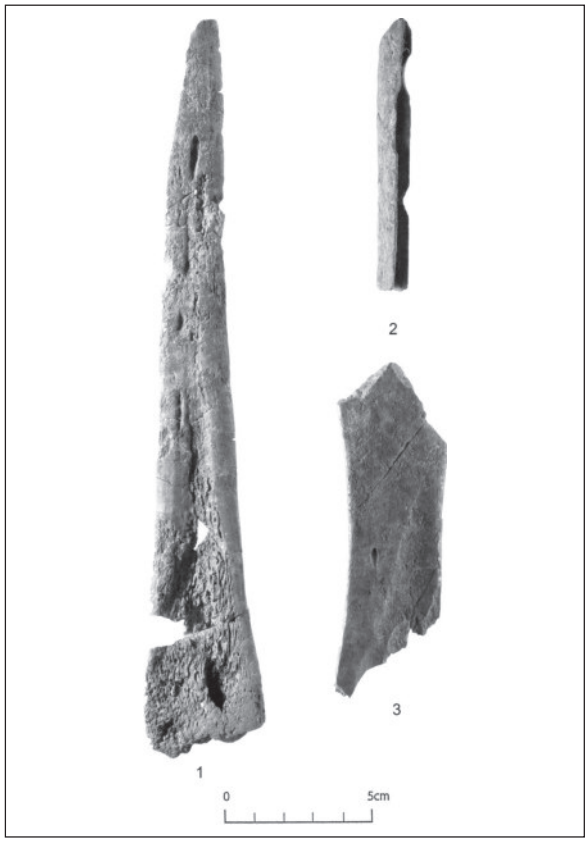
Utilitarian tools from Phase 3 ranged from small, sharp bone points (RN 150005, **Fig.13:5**) to large, broken sickle hafts, including a slender distal example (RN 150076, **Fig. 14:2**) and an angled medial fragment (RN 150019, **Fig. 14:3**). RN 150187 (**Fig. 14:1**) from the fill of Phase 4 is an enigmatic piece, because it resembles the sickles previously found at the site, yet lacks a hafting slot; perhaps it is unfinished, like the example RN 110073 found in Phase 1 during the 1980s (Edwards and Le Dosseur 2013: 261).

Basaltic Artefacts

A variety of basaltic artefacts familiar to Wādī Ḥammeh 27 were retrieved from Phase 3. They included two large mortar fragments, two other large vessel fragments, a complete pestle and three pestle fragments, a fragmentary miniature plate, and three fragmentary miniature bowls. A complete basaltic pestle, RN 150081 (**Fig. 15**), was found on the Phase 3 floor, near the circular stone feature, F. 17. Similar to other pestles from Phase 2, this example (at 15.9 centimetres long) is significantly smaller than some of the larger pestles found previously in Phase 1. An intact miniature plate was found on the surface of the site (RN 150157, **Fig. 16**). A

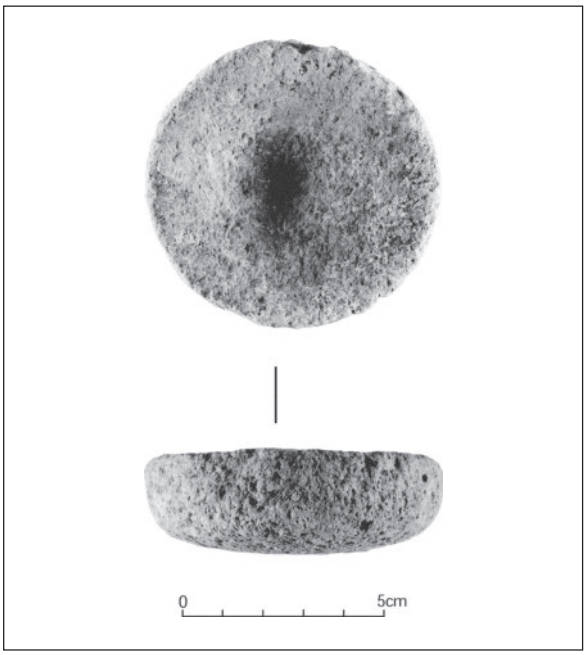


13. Bone pendants: 1) RN 150002; 2) RN 150007; 3) RN 150054; 4) RN 150172; 5) Bone point (RN 150005). RN 150002 is a surface find and the others are from Phase 3.



14. 1) Large bone tool (RN 150187, broken bone sickle haft); 2) RN 150076; 3) RN150019. RN 150187 is from Phase 4 and the other items are from Phase 3.

15. Basaltic pestle (RN 150081); Phase 3.

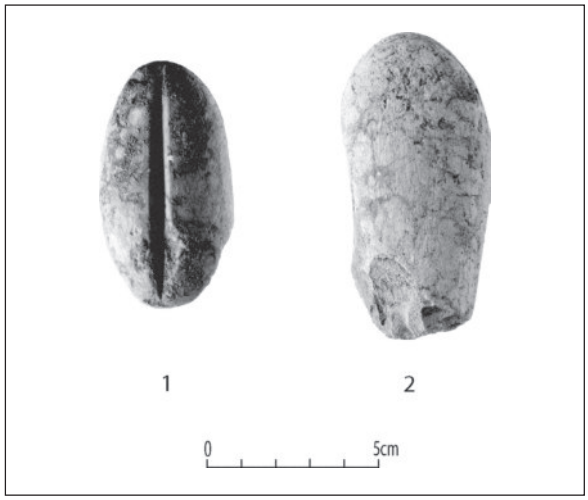


16. Miniature basalt plate (RN 150157); surface find.

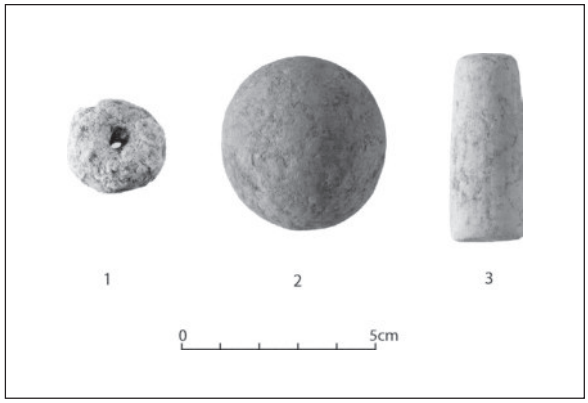
fragmentary miniature plate (RN 150125) was also recovered from Phase 3, along with three broken miniature bowls (RNs 150075, 150140, 150184). These examples add to the impressive corpus of miniature vessels, for which there are no readily obvious functions, and which are more or less restricted to Wādī Ḥammeh 27, among the Early Natufian sites.

Limestone Artefacts

A dozen limestone artefacts were recorded from Phase 3 deposits, with an additional limestone art item recovered from the surface, and a large mortar fragment from Phase 4. The Phase 3 finds are comprised of a large mortar fragment, a broken handstone (grindstone), two miniature plate fragments, a grooved oval stone (RN 150124; a shaft straightener or abrader; **Fig. 17:1**), and seven more unusual items. One of these is a small, drilled 'bead' of limestone (RN 150015, **Fig. 18: 1**). Similar items have been found before in Phase 1, although the examples in limestone are larger (Edwards 2013c: 240-241) and feasibly acted as some kind of implement(s). Most similar in general size



17. Limestone artefacts from Phase 3: 1) Grooved oval stone (RN 150124); 2) Shaped and smoothed stone (RN 150185).



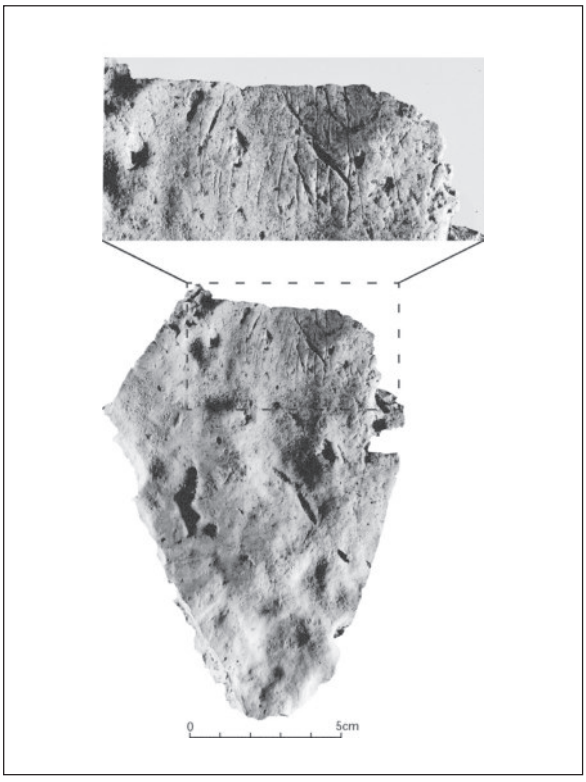
18. Limestone artefacts from Phase 3: 1) Circular piece of drilled limestone (RN 150015); 2) Shaped spheroid (RN 150020); 3) Shaped cylinder of stone (RN 150021).

and appearance is a basaltic piece designated as a 'bead' (Edwards and Webb 2013: 232).

There are two art fragments, dealt with in the next section, and four diverse objects grouped under the 'Various' category. RN 150185 (**Fig. 17:2**) is an elongated piece of shaped and smoothed limestone, with several flake scars marking one end. The remaining three items all came from a small area in the southeast corner of Square E 7 (Locus 7. 1 in Phase 3), situated immediately west of Structure 3's exterior Wall 9. They include a split cobble (RN 150018), perhaps also intended as an art 'canvas'; a limestone spheroid finished almost to a perfect sphere (RN 150020, **Fig. 18:2**); and an unusual small limestone cylinder (RN 150021, **Fig. 18:3**) resembling an artist's 'crayon' in form. This is a unique item for Wādī Ḥammeh 27.

Art items

Besides the incised bone tool described above, three limestone artefacts decorated with geometric or schematic motifs were recovered in 2015. One was collected from the surface near the excavation area (RN 150001, **Fig. 19**), and features a series of more than a dozen parallel, incised strokes marking one end of a travertine fragment. The margin appears to be broken, so the design may have originally been more extensive. There is also a grooved limestone pebble (RN 150022, **Fig. 20:1**) and an incised and drilled limestone fragment (RN 150139, **Fig. 20:2**).



19. Travertine fragment incised with pattern of short, parallel strokes (RN 150001); Surface find.

Various Finds

Over one hundred Dentalium (*Antalis* sp.) shell fragments were recovered from Phase 2 deposits in 2014, and many more specimens have accumulated from the sorting of Phase 2 sieve residues so far. By contrast, 79 Dentalium fragments have emerged from the Phase 3 deposits.

Conclusions

The 2015 La Trobe University project season was very successful. Excavation of the Phase 3 deposits has revealed a great deal about the evolution of architectural style in the Early Natufian period, as well as new and unusual material culture types. The key project aim to find human burials for strontium isotope testing was advanced by reaching the basal deposits of Phase 4 at Wādī Ḥammeh 27. It is planned to conclude the exploration of Wādī Ḥammeh 27's lower-phase deposits in a future season. *(P.C.E.)*

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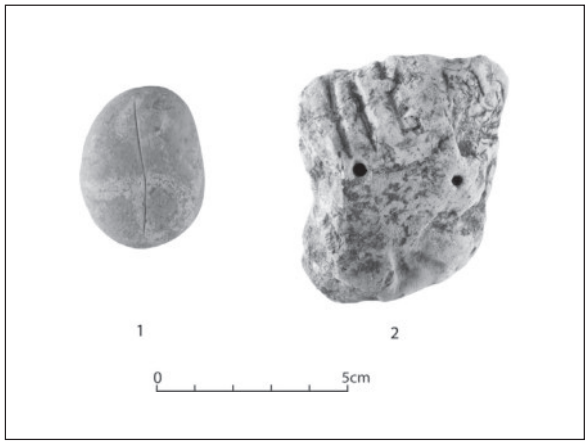

20. 1 Grooved limestone pebble (RN 150022); 2) Incised and drilled limestone fragment (RN 150139); Phase 3.

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