

FIRST REPORT ON PALAEOLITHIC SAMPLING AT ABU EL KHAS, PELLA

by
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Introduction

This is the first of two reports on a probable Lower Palaeolithic site in North Jordan. The Abu el Khas site was accidentally stumbled upon in February 1979 when the writer and Ms. K. Kelly, members of the University of Sydney team, excavating at Pella of the Decapolis, were exploring the environs of the Classical site. Time only permitted the collection of a small selective sample which included four roughly worked hand axes and a number of flake artefacts. Some of the material appeared to exhibit a crude Levallois technique and the site was tentatively assigned a Middle Palaeolithic provenance.

Acknowledgements

I would like to thank Prof. J.B. Hennessy, Co-Director of the Pella Expedition for his agreement to the project, for providing the logistic support without which nothing could have been done and for his kind patience. I am also indebted to Dr. Adnan Hadidi, Director General of the Dept. of Antiquities, for his invaluable encouragement and assistance in my work. Thanks to Mr. Sami Abaddi, representative of the Dept. of Antiquities for his good humour in the face of often rough conditions; to Dr. Nicholas Stanley-Price and Dr. Gary Rollefson for their long-standing interest and pertinent advice; and to Dr. James Sauer, Director of A.C.O.R. and his wife Sue for their warm hospitality and helpfulness. I owe much to Prof. John Mulvaney, Chairman, Dept. of Prehistory, ANU, for first suggesting the project and for making it a reality.

In January 1980, with a grant from the Australian National University to investigate the Abu el Khas as partial fulfilment of an M.A. degree in prehistory, I returned to undertake intensive statistical sampling of the site, a small test excavation and a restricted survey for further sites in the vicinity of Pella. After a field season of three weeks the post-excavation recording and processing took a further four weeks. A detailed analysis of the lithic material and of the geomorphic problems encountered during the excavation is currently in progress and will constitute the second report on this project.

Site Setting and Features

The area bounded by the Wadi Jirm, Wadi Hammeh and the rise to the highlands in the east forms a convenient physiographic unit within which the site may be analysed (Fig. 1).

The ancient city of Pella lies on the south-eastern edge of this area, next to the broad Tabaqat Fahl plain, and was in a favoured position in relation to several nearby valleys and passes which provide natural routes of movement (Smith 1973: 83). The hills above and around Pella are roughly segmented by deep wadis draining down to the Jordan River in the west and the city itself was constructed around the plentiful springs of the Wadi Jirm.

The Abu el Khas site is situated 1.3km north-east of Pella, above the Wadi Hammeh drainage system at an elevation of 0-45 metres above sea level.

This wadi has long been known for its hot springs and itself contains ruins from an as yet undated period. The site consists of a scatter of artefacts over the slopes of Tell el Ba'ab and Tell abu Ramileh, which rise on either side of the dirt road leading from Meshara and Pella to the hot springs and beyond into the mountains. This drop down into the Wadi Hammeh system forms the northern boundary of the site. In the east the limit appears to be a line of outcropping limestone on the upper part of Tell el Ba'ab. Above it is a rocky terrain with perennial vegetation while below, the hill has been cultivated over the years and when lying fallow (as most of it was this year) presents a barren stony appearance. The southern limit is the Wadi el Khas and the steep rise on the other side. On the western side of the road to the hot springs, the wadi cuts through a small semi-enclosed plain lying at the base of the Ramileh ridge, before

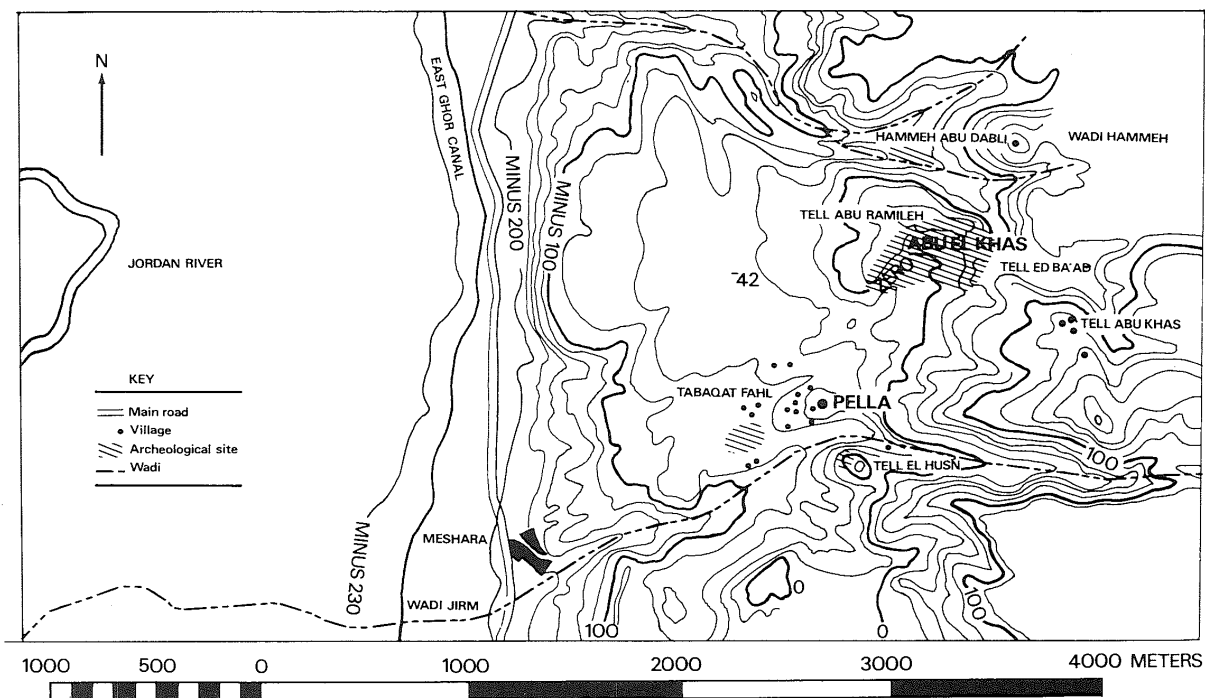


Fig. 1 : Topographic Map of Pella - Abu el Khas region

passing through two spurs to debouch on the Tabaqat Fahl plain just below. The Ramileh ridge curves around from north to west to form one of these spurs (Pl. C,1).

Artefactual material covers most of this area although finds are rare above the el Ba'ab limestone line and on the western sections of the Ramileh ridge. The site limits, as far as they could be distinguished were plotted with the assistance of Mr. Sami Abaddi of the Dept. of Antiquities, and on the basis of this the present area of the site was calculated to be over 60,000 sq.m. Erosion and slope wash have evidently effected a much wider spread of the material than was the original case.

Above the pass down to the Wadi Hammeh the British Army had erected fortifications (which are now just rubble) and on the upper slopes of el Ba'ab are the remains of three ancient agricultural terraces. Two are oriented NW-SE, and one on the slope down to the Wadi el Khas, within the collection grid, is oriented E-W. They are constructed from large plane-faced limestone blocks (each approx. 35cm. wide) laid side by side. These remains probably relate to the Romano-Byzantine occupation of the area, as sherds of this period occur over most of the site, as they do throughout the Pella region.

Site Sampling

The selection of a sampling strategy was guided by the need to move away from the selective surface collecting of artefacts which has predominated in Palaeolithic work in the past. As my aim was to collect a large enough sample to allow discernment of the nature of the evident mixing of cultural material on the site I could not afford to be selective in my recovery of artefacts. Accordingly I took a total collection (i.e. all stone worked and unworked) from randomly selected squares located in a grid over the site as this method produces a truer picture of the range of variability present (Mueller 1975).

A 6,000 sq.m. area extending from the eastern rock-line on el Ba'ab, across the tributary gully running to the Wadi el Khas, and including a flat-topped hill and part of a ploughed field, was selected for sampling and pegged out on NS/EW axes (Fig. 2). A plan of this area was drawn up and overlain by a 2m. x 2m. grid. Reasons for deciding to sample this area included: its extension over a variety of local terrains; the eastern rock line presenting a clear site limit; the appearance of artefacts throughout; and the fact that the flat hill in the west section of the grid had not been ploughed in living memory, unlike most of the rest of the Abu el Khas site.

Considerations of time and logistics suggested dividing the area into two 1,500 sq.m. strips, one along the north sector of the grid and one along the south, and collecting a 10% sample from this 3,000 sq.m. area. In this manner, all variations in terrain and aspect were retained.

Lack of time and resources prohibited the random selection of a number of sample areas and the approach adopted above represents a stratified random sample.

The 2m. x 2m. squares on the plan of the sample area were numbered consecutively and from a table of random numbers 75 were allocated for sampling. These squares were then measured off from the NS and EW axes of the grid and pegged out.

A total collection method requires the collection of all rock as well as more obvious stone artefacts from each square, including chips often less than 2cm. in size. A preliminary sorting beside each square discarded the larger non-artefactual rock and gravels and the remainder was transported back to camp.

The disturbed and culturally mixed nature of the site suggested adoption of a 'minimalist' approach to the post-washing sorting of the material. Further non-artefactual material as well as pieces of dubious artefactual status were discarded after sorting according to the criteria listed below, due to the impracticality of transporting them further. The remaining flints were individually numbered and bagged according to their squares.

The random sample yielded a total of 1,575 pieces of which 405, mostly cores and debitage were left with the Dept. of Antiquities. The remaining 1,170 were sent to ANU. Of this number a further 728 were then set aside since they did not exhibit any of the following criteria:-

- (1) presence of a bulb of percussion and/or striking platform;
- (2) external facets from prior or subsequent flake removal;
- (3) clear signs of secondary retouch on a functional edge.

This approach was necessitated by the presence of thermal and starch fractures amongst the flint, as well as by the fact that the site has been cultivated for a long period, exposed to erosion and the constant passage of goats, all of which are potential contributors to the natural fracture of flint (Pl C,2). Since this problem of eoliths is ubiquitous (Hazzeldine-Warren 1923; Hayward 1913-14; Reid-Moir 1917-18) analysis was restricted to pieces that were clearly artefactual according to the above criteria. This remaining group of 442 artefacts was then separated into two, based on freshness of edge and degree of patination, and analysis is being undertaken on each separately.

Test Excavation

As mentioned the flat-topped hill in the western section of the grid had not been ploughed in recent times, the owner preferring to use it as a collection area for his harvest. Remains of a recent campfire were noted on this level, grassed areas, and in the hope of minimal disturbance here, as compared to the rest of the site, it was decided to dig a 1m. x 1m. test trench in this area in an attempt to clarify the depositional events of the site.

The results were unexpected, especially as three sections cut elsewhere on the site revealed the surficial nature of the lithic deposit. Artefacts were recovered throughout but at a depth of approximately 20cm. a solid conglomerate platform was encountered. This same feature is exposed on the southern (weathering) side of the hill and appears to overlie limestone base rock. Cemented into this conglomerate were artefacts which could only be removed with the aid of a hand-pick. The calcereous concretion had formed casts around some which could be broken open, while others were quite solidly cemented into the matrix.

The trench was excavated by trowel and following natural stratigraphy. Facilities were not available to sieve the material so each fistful of soil removed was picked through by hand for possible artefacts.

In this excavation sequence depths are approximate only as excavation followed the uneven stratigraphy which, however, rises towards the west:

Layer 1: 0cm. to 5cm. - 22 items recovered

Layer 2: 5cm. to 12cm. - 20 items recovered plus 4 sherds

Layer 3a: above conglomerate, 12cm. to 20cm. - 28 items recovered

Layer 3b: in conglomerate, 20cm. to 36cm. - 10 items recovered

Layer 1, a dark brown clayey soil (7. 5YR3/3) and possibly colluvial, merged diffusely with Layer 2, a mixed orange-brown soil (7. 5YR6/6) with numerous stones and fine gravels. Both layers contained organic material and had a soil Ph of 8½. Layer 3a showed an intensification

of the orange discolouration of the soil which formed pockets and filled interstices around the rocks, and which probably arises from the conglomerate underneath. Large cobbles of flint and chunks of limestone were the major constituents of this layer. Layer 3b was the conglomerate platform with artefacts cemented into its upper surface. This was broken up and removed after their extraction and excavation ceased when no further artefacts were discernable (Pl. CII). Subsequent sorting of the items recovered, according to the criteria listed above, gave the following result:

- Level 1 - 7 artefacts
- Level 2 - 12 artefacts + 4 Late Roman/Byzantine sherds
- Level 3a - 15 artefacts
- Level 3b - 7 artefacts

The artefacts from Levels 3a and 3b included flake and pebble tools, with the flakes ranging in size from small to massive (4cm. to 12cm. length). All have a heavy white patina and are rolled and/or much weathered.

The origin of the gravels forming the conglomerate, its possible existence as an erosion surface, the times of artefact deposition and the cementation event, as well as the history of the colluvium covering them, constitute major problems in the interpretation of the site, which, although under investigation is hampered by the lack of any detailed Quaternary geological and geomorphological studies in this northern region. It is hoped that geological analysis of conglomerate samples may provide some clues to the nature and origin of this deposit.

Selective Surface Samples

Throughout the field period artefacts which 'caught my eye' were collected from the middle unsampled section of the grid, from the ploughed field below the el Ba'ab hill, from the slopes of Ramileh and from the bed of the Wadi el Khas. In all 73 artefacts were collected including a fine biface with a globular, cortical base and worked by the hard-hammer technique (Pl. CI,1); a trihedral pick; a bifacial cleaver; 2 hammerstones; 2 late Neolithic chisels; a

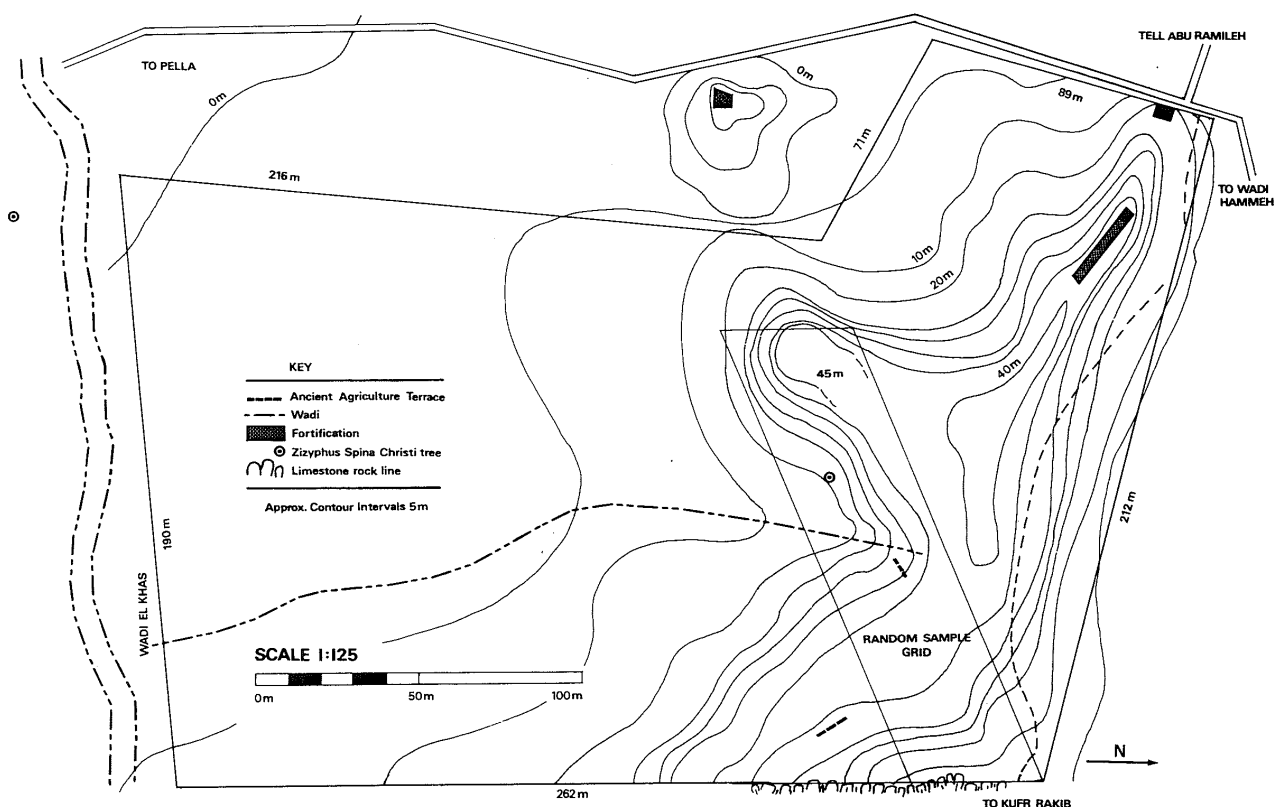


Fig. 2 : Topographic sketch map (approx. contour) of the el Ba'ab sector of the site showing position of collection grid and trench.

discoïd and a number of retouched flake implements. This collection stands in contrast to most of the random sample material, being a finer quality and workmanship. It also confirms that original impression of cultural mixing which, even if not extensive, is present on the site.

Other Sites in the Area

Unfortunately time did not permit the implementation of the intended survey in the region for further sites. However, a late Neolithic, possibly P.P.N.A., site was found on Tell el Husn, opposite the main mound of Pella, and provisionally Middle Paleolithic artefacts were noted in the area of the hot springs baths, as well as on the ridge east of Tell el Husn. Prof. J.B. Hennessy collected an excellent sample of a Neolithic blade industry from a field next to the village of Tabaqat Fahl. R. Smith, Director of the American team excavating at Pella, reported the recovery of Neolithic material (crude pottery, an incised stone, grinding stones, sharpened bone fragments and other material) beneath Middle and Late Bronze Age potsherds (Smith 1979: 8-9). Such finds of Neolithic remains centred around Pella substantiate previous suggestions of very early settlement in this area (Hennessy, et al. 1980: in press).

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