

FIELDWORK REPORTS

Excavations at the Later Prehistoric Site of Lewan, North-West Frontier Province, Pakistan

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Introduction

The Bannu Archaeological Project (BAP) has been reconstructing past settlement and subsistence patterns in Bannu Division, North-West Frontier Province, Pakistan, since 1985. The Bannu area (Fig. 1) covers approximately 5000 km² and is primarily defined by its geomorphology, in that it represents a distinct unit that is almost completely surrounded by folded and faulted Plio-Pleistocene geology of the Siwalik Series (Rendell 1981: 219).

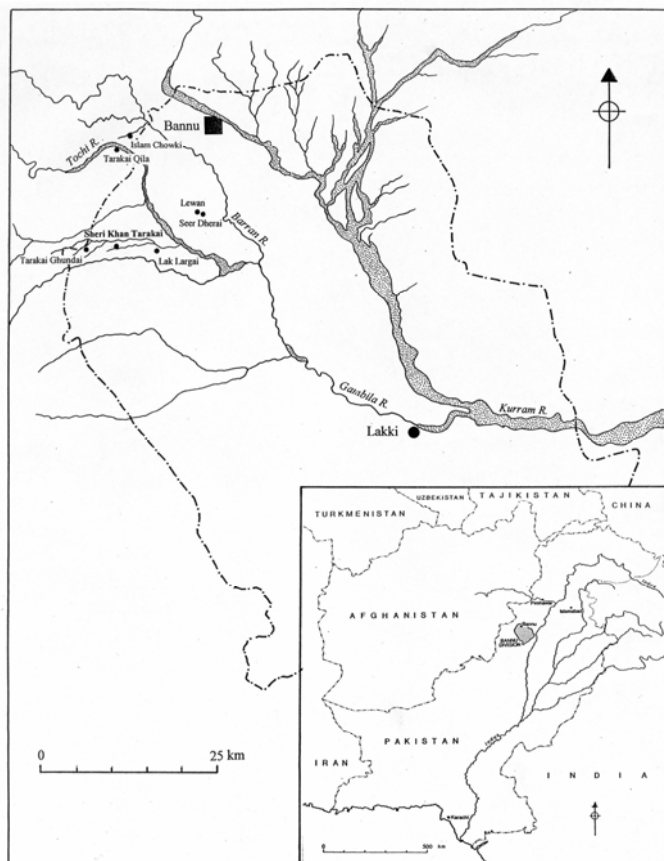


Figure 1. Fourth to third millennium sites in the Bannu area.

The area is dissected by both local hill torrents and the upper catchments of the Kurram, Tochi, Barran, Khaisor, Shaktu, and Kashu Algad Rivers. All of these torrents are ephemeral except for the Kurram and Tochi Rivers. A series of low angle boulder and gravel fans delineate the mouths of the torrents (Rendell 1981: 221). The Bannu basin today has an arid to semi-arid climate with a mean annual rainfall of around 320 mm and maximum summer temperatures of up to 40°C. Thomas (1986: 21-24, 1999: 310) has discussed various aspects of the past environ-

ment in the Bannu basin and concludes that there is no clear evidence either way that the climate has changed markedly over the last five millennia. However, the environment generally, in particular the nature and depth of the soils and vegetation, are highly degraded as a result of human exploitation in the past. It can be assumed that plants would have been more diverse and plant cover more extensive in the past and that the surrounding hills would have been more densely forested (Khan *et al.* 1991: 2).

As part of the research strategy of the BAP, the later prehistoric site of Lewan, located approximately 15km south-west of Bannu city (Fig. 1), was excavated in 2000 and 2001. Extensive excavations by the BAP at the site of Sheri Khan Tarakai and small-scale excavations at sites such as Lak Largai and Islam Chowki (see Khan *et al.* 1991) suggest that three principal cultural phases (defined principally by ceramic types and decorative motifs) existed during the later prehistoric period in the Bannu area. They are the Sheri Khan Tarakai phase (c.4500-3000 BC), the Tochi-Gomal phase (c.3300-3000 BC) and the Kot Diji phase (c.3000-2600 BC). It was hoped that excavations at Lewan would help to define these phases, and their relationships, more clearly.

Background

The site of Lewan was considered by the Cambridge University Archaeological Mission to Pakistan, who excavated the site in 1977-78 in a joint project with the University of Peshawar, to be of an early Bronze Age context, similar to Kot Diji assemblages that they had seen elsewhere in Pakistan. They also identified a component within the ceramic assemblage that differed from the classic Kot Diji assemblages. Although they were unable to clearly define this component either chronologically or spatially at the site, they were able to define it culturally as similar to material recovered from Rehman Dheri period 1 in the Gomal Plain.

A number of questions were left unanswered by the Cambridge team, particularly regarding the site formation processes, the absolute date of the deposits, and the relationship between the two components of the ceramic assemblage. More broadly the Cambridge team suggested that Lewan had functioned as a stone tool manufacturing or “activity specific” site (Allchin *et al.* 1986: 136), which explained the high density of stones on the surface, and that the site was part of a larger interactive settlement network possibly extending to a radius of 15km to include other sites of the period(s) (Allchin *et al.* 1986: 202). It was suggested that these stone tools were traded throughout this network in exchange for other, unspecified, commodities (Allchin *et al.* 1986; for a critique see Khan *et al.* 2000). A pattern of settlement and subsistence was also developed which differentiated between permanently settled villages and seasonal camps in areas of specific resources, which led to the notion of settlement patterns in the region based on a mixture of sedentism and transhumance (Allchin *et al.* 1986: 135).

Fieldwork Objectives

Excavations by the BAP aimed to specifically address these unanswered questions, in particular to explore the evidence suggested by the Cambridge Archaeological Mission to Pakistan for a specialist lithic manufacturing industry at the site. The

principal aim was to establish a culture-historical framework based on absolute dates for the site. Although it had been examined before by the Cambridge team, only 0.4% of the area of the site (as defined by the survey of Allchin *et al.* 1986) was excavated, and this was based on an 'informal (but partly purposive) sampling strategy' (see Orton 2000: 2 for a definition). However, the strategy of the Cambridge team did reveal a series of 'pit' features. Given the lack of stratigraphy at the site, the location of these 'pit' features was also a key objective for the BAP, in that they were likely to be the only source of archaeological material and absolute dates from a secure context.

Methodology

A stratified adaptive cluster sampling strategy was implemented at Lewan based on three key factors. First, some research had already taken place at the site, and so an

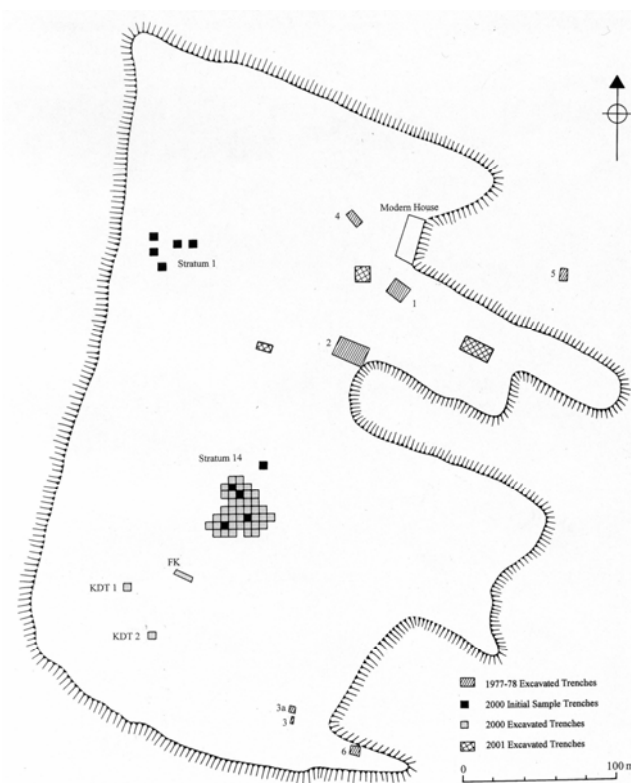


Figure 2. Excavated areas at Lewan.

A 200x200m sampling framework was placed in the centre of the site on a north-south orientation. This area was divided into 16 equal 'strata' of 50x50m areas. Each stratum had an initial simple random sample of ten 5x5m units (i.e. a 10% sample). The surface of these units was cleared, and if any features were identified they were excavated. These units were expanded into a network of sample units by excavating adjacent 5x5m squares if an archaeological feature was intersected (see Fig. 2).

opportunity existed to stratify the site according to areas that were likely to be more productive in terms of archaeological evidence. Second, the objective of the project to locate, date and record the 'pit' features was ideally suited to a technique such as stratified adaptive cluster sampling, which can dramatically increase data yields. Third, the excavation would be restricted by both time and labour resources. Stratified adaptive cluster sampling allows estimates to be made either about particular strata or about the entire population, if it can be assumed that the population is likely to be homogenous.

Results

Excavations by the BAP revealed a number of ‘pit’ features, containing a broad range of artefactual material, located in an otherwise sterile matrix across the site, with little evidence of any other stratigraphy. It is clear from the ceramic assemblage and the radiocarbon dates (see Table 1) that the occupation in the north of the site, with ceramics typical of the Tochi-Gomal phase (as defined by Khan *et al.* 2000) is chronologically earlier than that in the south of the site. This is the component that the Cambridge University Archaeological Mission to Pakistan had identified as similar to material from Rehman Dheri period 1. It is also quite likely that one ‘pit’ feature in particular contains transitional late Sheri Khan Tarakai/Tochi-Gomal phase material, similar to that from Ter Kala Dheri, a site located 5km north-east of Lewan. The radiocarbon dates provide a much more secure chronology of occupation at the site and are much more closely aligned to the dates already published for the cultural phases in the Bannu basin and the Indus Valley. In particular there is no evidence for a later Kot Diji phase of occupation at Lewan, as had been suggested by the Cambridge team.

Cultural Phase	Sample No.	Date BP	Calibrated Date (cal. BC) 68.2% confidence ($\pm 1 \sigma$)	Calibrated Date (cal. BC) 95.4% confidence ($\pm 2 \sigma$)
Kot Diji	NZA-13008	4114 \pm 60 BP	2860 - 2580	2880 - 2490
Kot Diji	NZA-13009	4117 \pm 80 BP	2870 - 2570	2890 - 2470
Kot Diji	NZA-13023	4136 \pm 70 BP	2870 - 2600	2890 - 2490
Kot Diji	NZA-13010	4232 \pm 65 BP	2920 - 2680	3020 - 2580
Tochi-Gomal	NZA-14718	4334 \pm 60 BP	3020 - 2880	3350 - 2700
Tochi-Gomal	NZA-14908	4370 \pm 60 BP	3085 - 2905	3330 - 2880
SKT/Tochi-Gomal	NZA-14716	4746 \pm 60 BP	3640 - 3380	3650 - 3370
SKT/Tochi-Gomal	NZA-14717	5102 \pm 60 BP	3970 - 3800	4040 - 3760

Table 1. Radiocarbon dates for Lewan.

Although the association between the Tochi-Gomal and Kot Diji phases at Lewan is horizontal rather than vertical, it is clear that many elements of the Tochi-Gomal material culture are prototypical of the Kot Diji phase. The principal difference within the ceramic assemblage appears to be the quality of the ware as opposed to the decorative motifs. In the Tochi-Gomal phase it is extremely fine, whilst in the Kot Diji phase it becomes less so, probably as the result of increased production and standardisation. The Tochi-Gomal phase ceramics are of a fine wheel-made ware, typically in carinated and open-mouthed bowl forms, with polychrome decoration in white, brown, red, and black (Fig. 3). Many other elements of the Tochi-Gomal phase material culture, in particular seals, figurines and beads, are also similar to the Kot Diji phase assemblages.

The ceramics from the Kot Diji phase of occupation are made of a coarser ware typically in globular jar forms, which are very different to those in the Tochi-Gomal

phase, and exhibit bichrome linear decoration of red and black (Allchin and Knox 1981a: 242). These vessels are typical of the Kot Diji phase in the Bannu basin, and more broadly in the Indus Valley (Khan 1964, 1965) (Fig. 4). The remaining material culture of the Kot Diji phase of occupation at Lewan typically included terracotta figurines and bangles, copper or bronze objects, ground and struck lithics, bone tools, and beads. Perhaps one of the most interesting and potentially informative finds of the Kot Diji phase was an intact pottery kiln. A programme of petrographic and chemical analysis of ceramic material in the Bannu area has begun, which will be considerably strengthened by the inclusion of a corpus of material from this feature, which provides clear evidence of local pottery production.

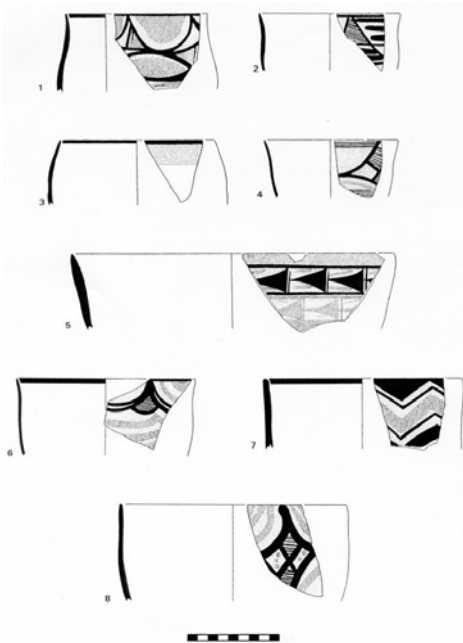


Figure 3. Ceramics typical of the Tochi-Gomal phase at Lewan.

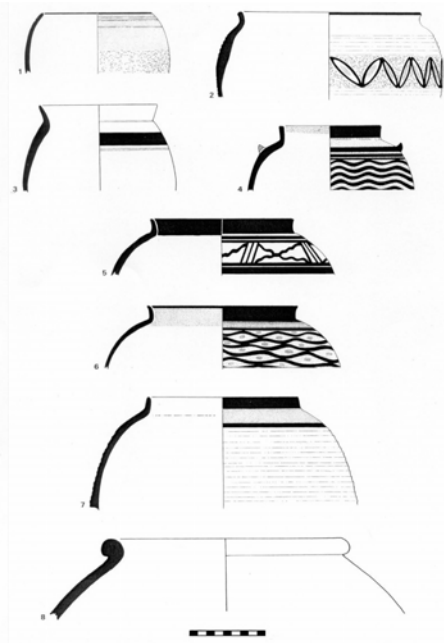


Figure 4. Ceramics typical of the Kot Diji phase at Lewan.

Discussion

Excavations by the BAP have helped to clarify the taphonomic processes that have taken place at the site, the cultural phases and chronology of occupation, and the function of the site. The Cambridge team suggested that the site had developed as a series of short-term occupations on a natural raised gravel bar, specifically used to produce stone tools. The dense covering of stones on the surface of the site was the principal evidence for this interpretation. However, when the lithology of the stones is examined more closely it is clear that they are quite unlike those used to produce the stone tools.

An alternative interpretation proposed here is that the stones are the result of the structures erected at the site, whereby they were used both as foundations and as a core for the walls which were then plastered with mud. This is a technique of build-

ing which can still be seen today in the Bannu area. As erosion and deflation took place the structures would have collapsed, leaving the site as it is found today.

Rather than being a specialised site, specifically producing stone tool artefacts as part of a larger settlement network, the range of industrial activities recorded at the site suggests that it was a village settlement comparable to those at Tarakai Qila, Tarakai Ghundai and Islam Chowki. Evidence of bead manufacture, pottery production and lithic manufacture were all recorded by the BAP, activities which are found at all sites of this period in the Bannu basin, suggesting a much more simplified socio-economic model than the one previously proposed for the site and its role in a postulated regional economy. Both the radiocarbon chronology and the transitional nature of the material assemblage suggest that the site was continuously occupied throughout the fourth and third millennia BC.

Future Work

Whilst excavations have been completed at the site, an ongoing programme of post-excavation research is in place. In particular, work has begun on the petrographic and chemical analysis of the ceramic assemblage, in addition to a similar analysis of ceramics from comparable sites in the Bannu basin, Gomal plain, and northern Baluchistan. It is hoped that a more detailed economic model of ceramic production and exchange can be devised when this work is complete. In addition, the lithic assemblage is also being analysed, focusing on the technology of production. The results of this analysis are also being compared to assemblages from further afield. Finally, particular attention was paid to the collection of environmental samples during the excavations, through both dry sieving and flotation. This material is awaiting analysis and interpretation and will form part of a broader environmental model for the Bannu basin during the later prehistoric period.

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