

Prehistoric archaeology. The site of Garba IV Excavations 1973-1982

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Introduction

After the discovery of Garba IV by Jean Chavaillon in 1972 and his first excavations in 1973, the direction of the excavations from 1974 to 1982 was given to Marcello Piperno, with Grazia Maria Bulgarelli participating in the excavations and in the classification and study of the materials (Piperno, Bulgarelli-Piperno 1975).

Inventories of the entire collection were prepared during various excavation seasons and later during the missions of study carried out by M. Piperno and G.M. Bulgarelli in Addis Ababa and Melka Kunture. These inventories have been used to obtain both the typological and technological data for the present study and the GIS application presented in this monograph.

The GIS application for the taphonomic study of the paleosurfaces required a preliminary revision and reorganization of the data collected during the excavations and the study. The revision of the data has been carried out mainly by Rosalia Gallotti.

The GIS application presented in this volume was made possible by the constant collaboration of Andrea D'Andrea of the University of Naples "L'Orientale". Many of the taphonomic conclusions and the hypotheses relating to the formation and later transformation affecting paleosurface D, are the result of discussions and reflections obtained from the interpretation of this application by R. Gallotti and M. Piperno.

Main excavation

The site of Garba IV is located on the right bank of the Awash and the river has destroyed an unknown portion of the northern part of the site (Fig. 1).

As is clear in Fig. 1, a recent narrow gully running in a SW/NE direction, conveyed a limited amount of water during the rainy season and exposed a natural section through the site, leading to its discovery in 1972. The same gully partly removed the upper Levels (C and D) in an almost rectangular area in the center of the

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main excavation. The excavation area is therefore divided into two main sectors (from now on called the Eastern Sector (ES) and Western Sector (WS), excavated respectively in 1972-1975 and 1975-1982.

Another gully in the western wall of the WS excavation eroded part of Levels C and D on the N-W edge of this sector. The artificial walls of the excavation form the remaining borders of the explored area.

A total area of about 37 square metres on the right side of the gully described above was excavated from 1972 to 1975 (Fig. 2). The excavation and a preliminary stratigraphic reconstruction allowed the identification of a sequence composed of five main archaeological Levels (C-G); the uppermost ones (C-D) were completely exposed, documented and removed.

About 33 square metres (Fig. 3) of the WS were excavated, documented and removed between 1975 and 1982. Here, the distinction between Level C and D was much less evident than in the ES. In most of this area, the considerable thickness and the vertical compaction of lithic and palaeontological materials did not permit a clear distinction between the two levels, as was possible in the ES. Most of the artefacts attributed to Level C, for which a short description is presented, therefore come from the ES.

In contrast to previous interpretations (Chavaillon and Piperno 1975; Piperno and Bulgarelli-Piperno 1975), Level C is presently considered as a natural vertical dispersal of artefacts and fauna as the result of post-depositional phenomena, rather than a last phase of site occupation after the abandonment and burial of Level D.

A total of 13481 lithic artefacts and faunal remains were recovered from the entire area described above. These materials have been divided respectively between the two levels as indicated in Tab. 1. The underlying Level E in the area of the main excavation, and in the two test trenches (A and B) a few dozen metres away, has been explored to a limited extent, while only a few bone fragments have been recovered from Level F.

Level	L i t h i c i n d u s t r y		Fauna	Total	
	Obsidian and other volcanic rocks	Other raw materials			
C	439	189	1	243	872
D	3983	5824	14	2580	12401
E	8	19		51	78
F				5	5
Indet. Levels				50	50
Test trenches					
A	5	20		8	33
B1	2	8		3	13
B2	9	15		5	29
Total	4446	6075	15	2945	13481

Tab. 1 Garba IV. Total number of lithic and faunal remains recovered in Levels C, D, E, F and in the test trenches A, B1 and B2 (excavations 1973-1982).

Stratigraphy

The volcanic-sedimentary sequence at Garba IV, initially described (Chavaillon and Piperno 1975; Piperno and Bulgarelli-Piperno 1975), was recently re-examined by J. Chavaillon, J.-P. Raynal and G. Kieffer (Fig. 4). The lithostratigraphy of the site of Garba IV, as well as that of other important sites at Melka Kunture (Kieffer *et al.* 2002, Raynal *et al.* in this volume), has been specified.

As regards Garba IV, the information reported in the two papers cited above is briefly summarized here, and can be referred to for further details.

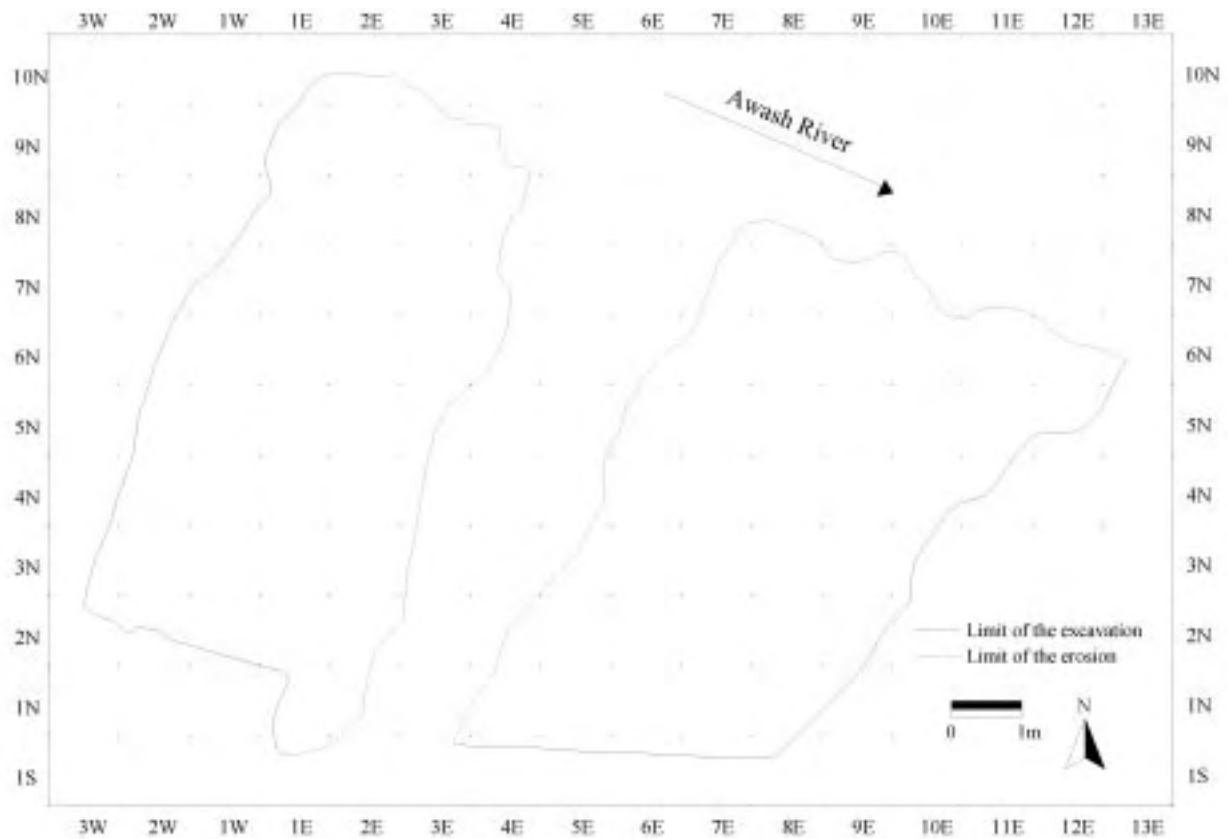


Fig. 1. Schematic plan of the excavated area of Garba IV.
(Original plan by G.M. Bulgarelli and M. Piperno, digital map by R. Gallotti)

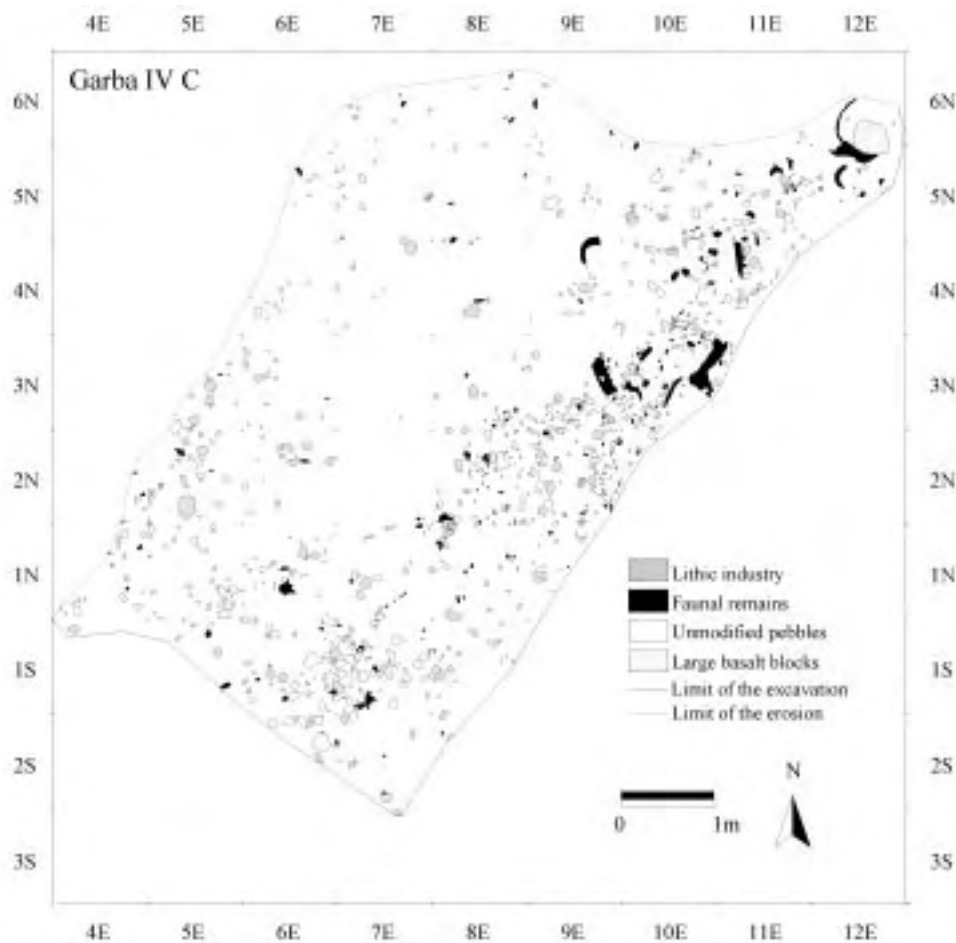


Fig. 2. Plan of excavations of Level C in the Eastern Sector.
(Original plan by G.M. Bulgarelli and M. Piperno, digital map by R. Gallotti)



Fig. 3. Garba IV D in the Western Sector.

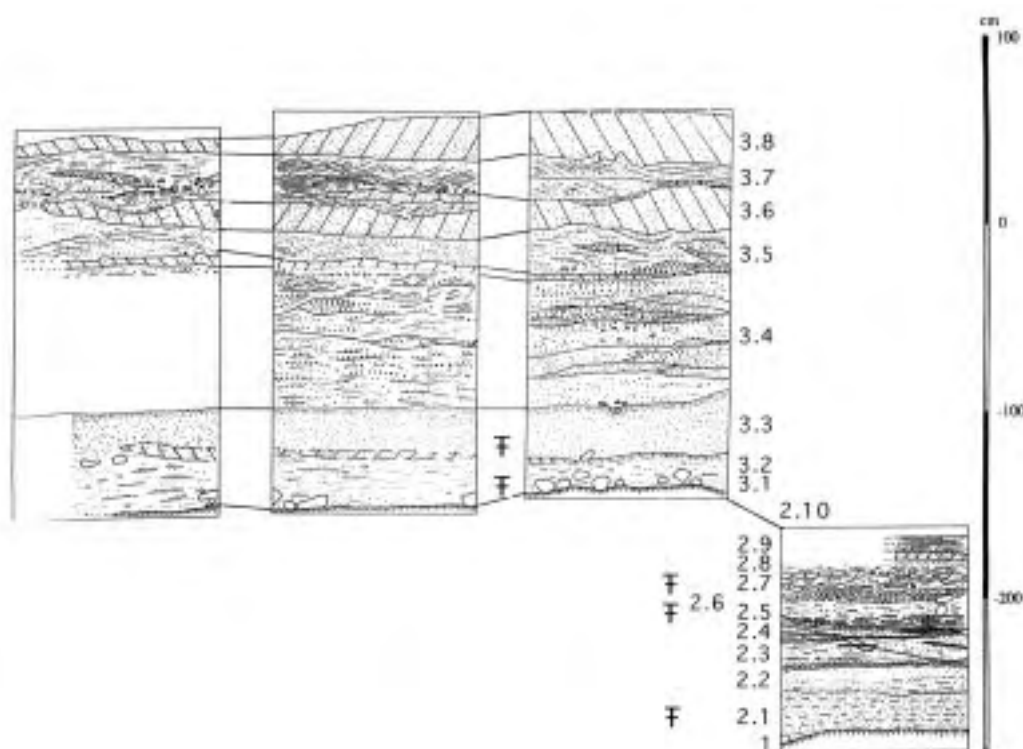


Fig. 4. Stratigraphy of Garba IV (after Kieffer *et al.* 2002).

Three stratigraphic units (1-3 from the bottom to the top) were recognized within the sedimentary fluvial series to a thickness of about 3 m.

Stratigraphic Unit 1 at the base of the sequence is a layer of greenish clays, only the top of which has been excavated.

Stratigraphic Unit 2 is divided into 10 sub-units. From bottom to top it consists of: sandy clay deposits (1) containing the lower archaeological Level G, light-gray ashy sands (2), clay and sand layer (3), more or less coarse sands (4), gray fine sand layer which includes archaeological Levels F and E (5), fine gravel layer with obsidian granules (6), sand layer with coarsely stratified pumice, probably derived from reworked ashy products (7), white tuff (8), fine sand layer (9), clay layer overlain by Level D (10).

Stratigraphic Unit 3 is composed of seven sub-units. The first is represented by archaeological Level D (1), covered by a layer of sands, from coarse to fine, containing the same Level D (2). This is followed by a layer of coarse sand containing Level C (3), a layer 80 cm thick with coarse cross-bedded sands (4), a cineritic layer of irregular thickness (5), a layer of white cinerite (6), a layer of obliquely stratified sands with a maximum thickness of 30 cm (7), and a white sandy cinerite (8).

Test trenches A and B

Two small test trenches (2x1m) were excavated in 1979 at a distance of about 15 m from the main excavation in order to ascertain the possible continuation of some of the Garba IV levels, and in particular Level D. The location of the test trenches in relation to the main excavation is indicated in Fig. 5.

The materials from the two test trenches have been described in the chapter on the typology and technology of Garba IV.

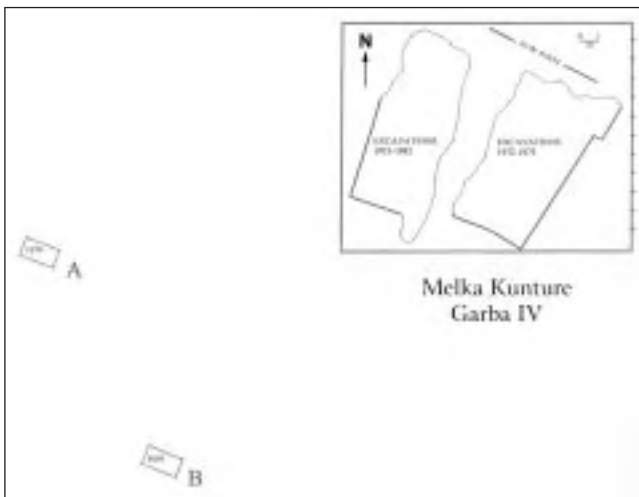


Fig. 5. Location of test trenches A and B (Excavation 1979). Drawing by M. Piperno

Main aspects of Level D

In the Western (WS) and Eastern (ES) sectors, paleosurface D is present as an expanse of lithic and faunal materials included in a sediment of sands and fine gravels with abundant unmodified pebbles.

The concentration of artefacts and unmodified pebbles is higher and more constant in the WS, where in some sectors it reaches a frequency of about 500 objects per square metre. By comparison, these materials are less frequent and are sometimes completely absent in the ES.

Sounding in Level E (1982)

A sounding was dug in 1982 in squares 2-3E/6-7N below Level D in order to verify the thickness and nature of the underlying levels that had until then been observed only from the natural sections (Fig. 6).

An occupation level with fauna and a lithic industry, corresponding to Level E, was reached about 60 cm below the base of Level D.

The materials from this sounding are described in the chapter on the typology and technology of Garba IV.

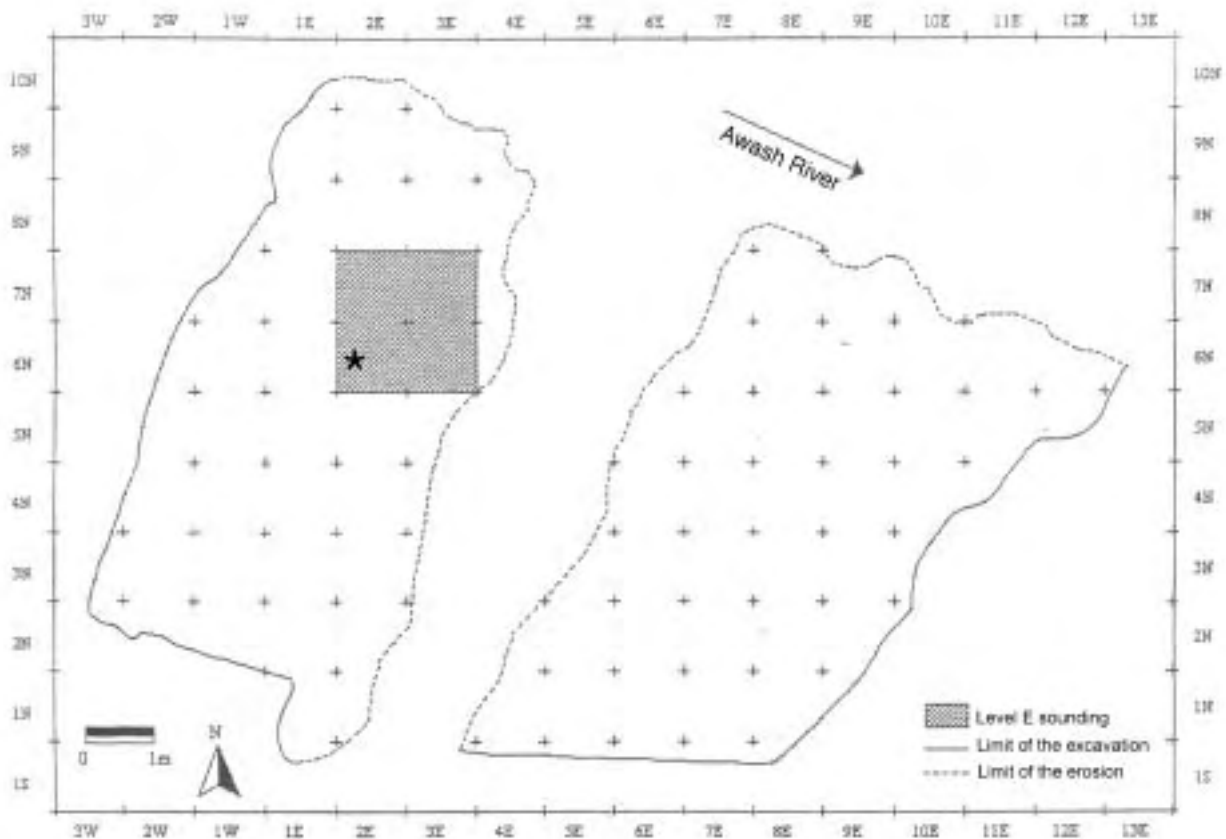


Fig. 6. Location of the sounding below Level D (excavation 1982). The star indicates the position of the mandible of a *Homo erectus* child recovered in Level E. (Digital map by R. Gallotti)

Areas without remains

In some areas, such as in the southern sector of the WS and in the southern and eastern sectors of the ES, a complete absence of remains has been observed.

In the southern sector of the ES, such absence may be related mainly to post-depositional processes that have biased, in some zones, the original concentration of artefacts and fauna. This is different from the northern portion of the same sector where the concentration of fauna and industry is similar to that of the WS, but the materials are sporadic, leaving wide spaces without remains or with just isolated specimens.

An analogous, although less striking, scarcity of remains may be observed in the WS, corresponding to squares 5-6N/1W-1-2E, where the materials tend to be rarer than in the surrounding area which is one of the richest in lithic and faunal remains.

In the southern sector of WS, corresponding to squares 2-3N/1-2W, a small circular area of about 2 square metres completely devoid of remains, has been discovered, extending partially underneath the excavation section (Fig. 7). The interruption of the artefacts and of the paleontological remains at the edges of such an area is abrupt and noticeable, as if it were caused by some kind of natural obstacle, such as for example a bush, which blocked the dispersal of the remains.

Areas with large blocks

A recurrent aspect of the main excavation area is the presence, in different parts of the excavation, of large basalt blocks without clear traces of intentional modification, and weighing more than 15/20 kg (Fig. 8). Around them there is a concentration of large faunal remains (vertebrae, pelvis, ribs, horns, etc.).



Fig. 7. Garba IV D. Detail of the semicircular area without remains in the southern part of the Western Sector.



Fig. 8. Garba IV D. Large basalt blocks in different areas of Level D.

Eastern Sector

In the ES there are four of these large blocks, concentrated in the northern part of the explored area. Two of them, relatively close to each other, are located in squares 9-10E/7N and, especially in the northernmost one, there is a clear clustering of faunal remains. In front of the third block, in squares 5-6N/12E, there are abundant small and medium sized faunal remains, as well a notable concentration of obsidian flakes and debris. The accumulation of fauna and obsidian is even more marked around the fourth block, located at the center of square 9E/8N. The dispersal area of the materials seems to be related in some way to the presence of this large basalt block and in this area involves a surface of at least four square metres.

Western Sector

The correlation between large blocks and large faunal elements occurs again in different areas of the WS.

A horn-core of a large bovid and one belonging to an antelope are found, together with other faunal remains, near two basalt blocks in squares 1E/8-9N, close to the western border of the excavation area.

A little further eastwards, in another large area covering squares 2-3E/8-9N, there is the highest concentration of large faunal remains (several horn-cores and large fragments of scapula and pelvis belonging to hippopotamus or elephant) scattered among three adjoining basalt blocks.

Finally, towards the southern border of the same sector, in squares 1-2E/1-2N, numerous large faunal remains, including a rib, two vertebrae, and a hippopotamus tibia, surround two other basalt blocks.

Concentrations of obsidian

The detailed taphonomic analysis made possible mainly by the application of GIS, allowed for the identification of another characteristic of paleosurface D: the presence in some areas of significant concentrations of obsidian flakes, debris, and cores. In general, the density of obsidian in the ES is clearly higher than that observed in the WS, where artefacts made on flakes of basalt or other volcanic rocks are more abundant. In particular, it is possible to observe a high concentration in the northern part of the WS, corresponding to three large blocks in squares 2-3E/8-9N, and in the west-central part of the WS. In the ES, another limited concentration of obsidian flakes and cores has already been mentioned in front of the large block in square 2E/5-6N; but it is mainly around the block in square 9E/6N that obsidian artefacts reach a very high density covering an area of a little more than four square metres (7-8-9E/5-6N). There may be a functional interpretation for these squares, where refitting will be attempted in future, in that they preserve traces of a possible workshop area for obsidian knapping.

In the same areas just described, it also seems possible to observe a correlation between the high concentration of obsidian artefacts and faunal remains among which horn-cores are particularly frequent.

Frequency of horn-cores

Another characteristic of paleosurface D that was observed from the beginning of the excavations and confirmed by the taphonomic analysis, is the relatively high frequency of horn-cores (about 100). They are attributed to different species of Bovids and are scattered over different areas of the paleosurface. Furthermore, as already mentioned, there is possibly a higher concentration in the northern part of the ES which also shows a high density of obsidian artefacts close to some large basalt blocks (Fig. 9).



Fig. 9. Garba IV. Bovid horns in Level D.

In the WS two other separate areas in the northern and in the central part also show a high density of horn-cores. The first is also the area where several basalt blocks are closely associated with large bone fragments, while the second corresponds to the richest area in the WS.

Unmodified pebbles

Amongst the materials present in Level C and Level D are unmodified pebbles of basalt or other volcanic rocks, while unmodified obsidian pebbles are very rare.

In analysing the excavation, all the unmodified pebbles were plotted on the distribution plans, but the elevations were never recorded. The unmodified pebbles are present at different depths within Level D and not only at the base.

The horizontal distribution of the unmodified pebbles reflects exactly that of most of the lithic and paleontological materials, except in the southern portion of the ES, where unmodified pebbles are completely absent even in areas where faunal remains and lithic artefacts were found.