Finds and sites discovered in Unit IV-C-III

5.1. Introduction

Five Unit IV sites (A, D, F, H and K) were discovered in the Belvédère pit, which are younger than the sites discussed in chapter 4. The sites all have a Unit 5.1 matrix, and their sections display a stratigraphical sequence different from that of the Unit IV-C-I sites. However, as already mentioned in chapter 2, the correlation of their Unit 5.1 matrix with lithostratigraphical units presents a problem.

Whether the sites reported on here indeed belong to lithostratigraphical Unit IV-C-III or whether they should be placed at the base of Unit V-A or in a lower unit is still not clear at the moment. Further field studies may enable us to differentiate better between these two lithostratigraphical units. For this volume I have chosen to place these sites in the top part of lithostratigraphical Unit IV-C, that is in Unit IV-C-III (fig. 20).

It is to be stressed that this a technical solution and that more complex scenarios are theoretically possible, considering the fact that the 'sites' have been correlated using their embedding matrix as the guideline. Such a procedure obviously poses many problems, one of them being that the artefacts are generally distributed over vertical distances of 15 to 30 cm, and sometimes more, and that it is in most cases impossible to establish the original surface at the time of the deposition of the archaeological assemblages. We should in fact use the hiatus in sedimentation which enabled hominid occupation as the marker for our correlations, and not the sediments in which the archaeological remains are embedded.

So far the 'upper-level sites' have produced no significant faunal remains because, on the whole, their matrix is decalcified; the assemblages were found higher in the pedological profile than the Unit IV-C lower-level sites. We therefore have little evidence as to whether the sites were formed in the same warm-temperate phase as the lower-level sites discussed in the previous chapter. In view of the often very gradual transition from calcareous Unit IV-C sediments to the higher decalcified Unit 5.1 sediments, the author has chosen for such an interpretation, awaiting the results of further fieldwork, which will focus on this problem (chapter 8).

Finally, it has already been pointed out several times that this volume deals with the archaeological results of the 1980-1985 fieldwork; nevertheless, a short note on an important site excavated in the period 1986-1987, Site K, will be discussed here too.

In chapter 2 we have already mentioned the problems involved in differentiating between Unit IV and Unit V. In Van Kolfschoten and Roebroeks (eds., 1985) a number of archaeological sites were arranged in a stratigraphical order which turned out to be incorrect in subsequent fieldwork. In this chapter several sites will be seen to have moved to different (sub)units as a result of the rejection of earlier interpretations.

5.2 Site F

5.2.1 INTRODUCTION

On June 27, 1983, while cleaning a section for a visit of the Belvédère pit by the British Prehistoric Society, the author discovered a flake in pre-Weichselian deposits in the southeastern part of the pit. Subsequent exploration of the section with K. Groenendijk yielded a further 30 artefacts, the majority consisting of fine debris. In view of the presence of burnt flints in this sample two TL dosimeters (326 and 328) were placed in the section in July 1983.

The next summer the site was excavated by a team of about 14 people, from June 4th to July 27th, 1984. In this period an area of 42 m² was excavated. The excavation was done in the same way as at Site C: all finds macroscopically identifiable in the field were recorded three-dimensionally, individually numbered and stored in small plastic bags.

In 1983-1984 the section in which the site had been discovered formed the physical border of the pit. The position of the site, halfway down the steep wall of the approximately 15-m deep pit, made mechanical removal of the layers overlying the find level a difficult and hazardous enterprise, as it was virtually impossible to reach the site with heavy equipment. The generous cooperation of Mr F. Blom and the financial support of the municipality of Maastricht (Archaeological Survey) helped to solve this problem.

5.2.2 STRATIGRAPHY

As can be seen in figure 85, the site was situated in the top part of the fill of a channel cut into Unit 3 gravels. At its base the fill consists of coarse sands with loam lenses. The sediments become finer in upward direction, developing



- 3
- sandy loam, 10 YR 6/3
- sands. 2.5 Y 7/3. laminated with 10 YR 5/6 bands (Unit 4.6/IV-A) 4
- 5 sandy silt loam, 10 YR 6/6-5/6 (Unit 5.1/IV-B)
- 6 silt loam, 10 YR 4/6 with grevish silt mottles, containing artefacts (Unit 5.1)
- 7 silt loam, 10 YR 5/6 (Unit 5.2/V-B)
- 8 silt loam, 10 YR 5/6-6/6, containing rust and Mn mottles (Unit 5.2/V-B)
- silt loam, 7.5 YR 5/6 (Unit 5.2/V-B)) 9
- 10 silt loam, 10 YR 6/3, laminated, calcareous (Unit 6.5/VI-D)
- 11 Nagelbeek Horizon (VI-E)

The layers 5 to 9 are shown in greater detail in figure 86. The numbers 326-328 refer to the positions of the TL dosimeters.



Fig. 86. Maastricht-Belvédère: Site F section 24/22 - 25/22

- silt loam (10 YR 6/6-5/6) massive, friable with few very fine pores 1 and very few silt mottles (10 YR 6/4), non-calcareous
- 2 silt loam (10 YR 4/6) massive, friable with many very fine pores, common greyish (10 YR 6/4) silt mottles, non-calcareous, containing excrements (1-2 mm) and artefacts. Clear and smooth boundary with horizon below. At its base is a gravel layer (TL capsules 326, 328; thin section 0.452)
- 3 silt loam (10 YR 5/6) massive, friable with few very fine pores, few silt mottles (10 YR 6/4), non-calcareous. Abrupt and smooth boundary with horizon below. At its base is a gravel layer containing larger slates (thin section 0.440)
- silt loam (10 YR 5/6-6/6), friable to firm with few very fine pores, 4 containing rust and manganese mottles and a few calcite concentrations. Platy structure, non-calcareous, showing a gradual and smooth boundary with the horizon below (TL capsule 327, thin section O.439)
- 5 silt loam (7.5 YR 5/6), very friable with few very fine pores, noncalcareous (thin section O.438), showing an abrupt and smooth boundary with the horizon below



Fig. 87. Site F: horizontal distribution of the flint artefacts. Grid in square metres.

SITE F

into a silt loam in the top metre of the fill. Figure 86 gives a survey of this top metre in excavation square 24/22, indicating the stratigraphical position of the TL dosimeters and the thin section numbers.

In general terms the silt loam with greyish specks forming the matrix of Site F can be classified as a Unit 5.1 sediment of the lithostratigraphical Unit IV-C-III. The presence of a large number of biopores in the sediment and of 1-2 mm large excrements, probably of *Lumbricus*, is worth mentioning. The gravel layer capping the Site F matrix contained slate plates with dimensions of up to 0.5 m^2 .

From the micromorphological analysis by H.J. Mücher (pers.comm., 1987) of the thin sections indicated in figure 86 we know that the matrix containing the archaeological assemblage consisted of ill-sorted silt and fine sand with greyish-brown clay, possibly deposited by running water (rill wash, afterflow?). Furthermore, Mücher (pers.comm., 1987) found evidence of two phases of clay illuviation in the section illustrated in figure 86. Thin sections O.452 and O.440 revealed an earlier period of clay illuvation, while a second pedogenesis, resulting in the formation of a luvisol, seems to have taken place after the formation of the sediments sampled in thin sections O.438 and O.439.

In the field a 20-cm thick band of silt loam (10 YR 5/6-6/6) with a platy structure, containing specks of rust and manganese and some small calcite concretions in the upper part of the Saalian sediments at site F (layer 8 in figure 85, layer 4 in figure 86) bore a striking resemblance to features described by Bibus (1974) and others as *Nassboden* in 'Riss' loess deposits in West Germany: '...graue bis fahlrötliche Färbung, sowie eine starke Anreicherung von Mollusken und Kalkkonkretionen...' (Bibus 1974: 168). Bibus interprets these *Nassböden* as having been formed under a sparse vegetation cover above the permafrost. We sampled this horizon at Site F for indications of soil formation at this level, but no such indications were found in the thin section (Mücher, pers.comm., 1987).

5.2.3. THE FINDS

A total of 1215 flint artefacts were found at Site F, in an excavated area of 42 m^2 . Figure 87 gives the horizontal distribution of the artefacts. Figure 88 and table 15 show the size distribution of the flints, based on their maximum dimensions. As at Site C, the greater part of the material consists of fine debris. The total weight of the Site F assemblage is 2169 g.

The dark blue finely grained flint material from Site F had a very fresh appearance. Most of the pieces displayed only a light soil-sheen, while only a few pieces had a blueish-white patina. The flakes had been struck in hard percussion, as attested by the abundance of well-pronounced bulbs and flake scars; no indications of a prepared-core technique were found, while facetted butts were almost completely absent (Index Facettage 0.1).

The flints recorded in the excavated area had probably been struck from at least two different nodules. The appearance of the cortex suggests that the original flint nodules had been transported a short distance by water and were therefore very probably collected from gravels of the river Maas.

Figure 89-8 shows the only 'tool' from this site, a small *percoir*-like implement. Only one of the flakes shows macroscopical signs of use (flake 23/20-21) and displays a series of typical '*half moon breakages*' (cf. Keeley 1980: 25). Only one small core could be identified in the Site F assemblage

Table 15: Some quantitative data on the Site F assemblage.

	max.dimensions in cm	n	% of total
	0 - 1	468	38.6
	1 - 2	438	36.1
	2 - 3	153	12.7
	3 - 4	70	5.7
	4 - 5	42	3.3
	5 - 6	25	2.1
	6 - 7	12	1.0
	7 - 8	4	0.3
	8 - 9	2	0.2
	9 - 10	1	0.1
	0 -	-	-
total		1215	100.1
burnt artefacts		15	1.3
pieces with cortex		132	11.0
tools		1	0.1
cores		1	0.1



Fig. 88. Site F: size distribution of the flint assemblage, based on maximum dimensions, in cm.

(21/22-67, see figs. 89-7 and 95). A preliminary (high-power magnification) use-wear analysis of ten randomly selected larger flakes indicates that, on the whole, the soil-sheen of the flakes was so weakly developed that it would not have obliterated traces of use on hard material; if the flakes had indeed been used, it must have been to cut boneless meat or to work on fresh hide, because no traces of use were visible (A. van Gijn, pers.comm., 1985).

A comparison of the size distribution of the Site F flint assemblage with that of the flints found at Site C shows that the percentage of flakes smaller than 1 cm is slightly higher at Site C than at Site F (44.6% vs. 38.6%). In the evaluation of this difference the excavation technique, being the same at both sites, can be left out of consideration. The horizontal distribution of the Site F material (see below) does not point to sorting processes, pieces smaller than 1 cm occurring randomly between larger ones. The difference in size distribution may therefore best be explained in technological terms, Site F being a place where possibly only crude primary flaking took place, in contrast to Site C. The almost complete absence of facetted butts at Site F as compared to Site C (Index Facettage of Site F 0.1 vs. Index Facettage of Site C 50.4) clearly illustrates this point.

The flint material included 15 mostly small burnt flints which, together with a few tiny charcoal particles, indicated the presence of fire at the site. A larger burnt artefact (F 22/22-44) was used for TL dating (K 11 in: Huxtable/Aitken 1985; see section 8.3.2.1).

In order to obtain information on technological aspects and natural site-formation processes, the Site F assemblage was subjected to a short refitting programme in 1984, which was less intensive than that to which the Site C material was subjected. Most of the refitting work was done by Mr P. Hennekens, with the assistance of the author. In total, 156 artefacts were refitted, i.e. 66.7% of the total weight of the Site F assemblage. Figure 92 gives the horizontal distribution of the refitted elements while the vertical distribution of some conjoining sets is shown in figure 97. These figures



Fig. 89. Site F: flint artefacts, 1-6, 9-10 flakes, 7 core, 8 percoir-like implement, scale 2:3.



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Fig. 90. Site F: 1-12 flakes, scale 2:3.





Fig. 91. Site F: size distribution of the refitted artefacts, based on maximum dimensions, in cm.

have been drawn according to model C in figure 45, in which all contact surfaces are linked.

The Site F conjoining work was done in the 'pre-Cziesla' (1986) period, as discussed for Site C in section 4.2.4, and therefore no systematic attention was paid to the different types of refits. We have tried to make up for this drawback by presenting the horizontal distribution of a number of conjoining groups in the way proposed by Cziesla (1986), as also discussed in section 4.2.4 (see figs. 93, 94 and 96).

In the course of the conjoining studies it became clear that the original nodules reduced at Site F had contained a number of internal cleavage planes, which had forced the flint knapper(s) to adapt the knapping strategy in an 'ad hoc' way, responding to the opportunities provided and imposed by these internal cleavages.





Figure 95 shows the small core 21/22-67, with five flakes conjoined to it, including a large decortication flake that had been struck before the flake from which the core itself was made. The horizontal and vertical distribution of the elements of this group is shown in figure 96.

The horizontal distribution of another five small groups of ventral/dorsal conjoining elements is shown in figure 94.

5.2.4 NATURAL SITE-FORMATION PROCESSES As stated above, the Site F cultural remains were embedded in a silt/fine sand matrix, indicative of a low-energy deposition of the sediment. In such a sedimentary environment cultural remains may be preserved in a primary archaeolog-



Fig. 93. Site F: horizontal distribution of conjoined flake fragments. The dots indicate fragments with maximum dimensions of more than 2 cm. Grid in square metres.



Fig. 94. Site F: horizontal distribution of some conjoining groups of dorsal/ventral refits. Grid in square metres.



Fig. 95. Site F: Core 21/22-67, with conjoined flakes, scale 2:3 (see figures 89-7 and 96).



Fig. 96. Site F: horizontal and vertical distribution of flakes conjoined to core 21/22-67 (see figures 89-7 and 95). Grid in square metres.

ical context, and indeed the results of the conjoining studies seem to indicate that the spatial arrangement of the Site F finds can first of all be related to hominid activities, rather than to natural depositional processes.

But again, as discussed for Site C, the degree to which the original flint scatters may have been disturbed is difficult to assess. The horizontal distribution of conjoined fragments (fig. 93) is comparable to the pattern of RMU 5 at Site C, where conjoining elements were distributed over an area comparable in size to that of Site F. Like that of Site C, the Site F scatter is larger than the flint scatters arrived at in experimental studies (Newcomer/De Sieveking 1980), which indicates that some disturbance took place.

After the burial of the assemblage the matrix was affected by biological activity, as attested by the presence of rainworm granules. This may offer an explanation for the vertical dispersal of the artefacts, which is visualized in figure 97. It can be seen there that smaller flakes tend to display a wider vertical dispersion than larger ones, a phenomenon also observed at Site C.

5.2.5 INTERPRETATION

In the interpretation of the Site F data allowance must be made for the fact that at the time of the discovery of the site an unknown extent of it had already been destroyed by quarrying activities.

Nevertheless, it is clear that the excavated area has yielded an assemblage that does show some striking differences when compared with the Site C material. We have already mentioned the virtual absence of facetted butts, which were very common at Site C. Typical Levallois flakes were absent at Site F but present at Site C. In fact, the Site F assemblage does not show any indications of the preformation of flakes. The fact that some of the raw material had internal cleavages cannot be the only cause of these overall differences.

The absence of several larger pieces in groups of conjoinable flakes, the virtual absence of pieces with any signs of use retouch and the absence of cores (leaving out of consideration the small core made from a flake) may indicate that at Site F (one or) two nodules were reduced to form some



Fig. 97. Site F: vertical distribution of conjoined elements. The dots indicate artefacts with maximum dimensions of less than 3 cm, while the triangles show the position of larger artefacts.

suitable larger blanks and one or more cores, intended to be used elsewhere.

5.3 Site A

5.3.1 INTRODUCTION

The intensive investigation of the pit sections, initiated after the first find in September 1980, led to the discovery of a small concentration of flint artefacts in Saalian sediments (Site A). Site A was discovered by J.P. de Warrimont in March 1981 and subsequently investigated by a small crew of five persons under the supervision of Prof Dr P.J.R. Modderman (Leiden). The primary goal of this limited investigation was to determine the exact stratigraphical positions of the flint artefacts. The fieldwork was carried out from March 9 to March 20, 1981. After the fieldwork had been completed, the remaining parts of the site were destroyed by quarrying activities. A preliminary report on the site was published by Modderman and Roebroeks (1981).

5.3.2 STRATIGRAPHY

Figure 98 gives a survey of the Site A section, which has already been presented in detail by Mücher (1985, Mi-2). The data obtained in the 1985-1986 fieldwork have, however, led to a reevaluation of the classification of the Site A stratigraphy (cf. chapter 2).

The sediment in which the finds were embedded is now classified as the top part of Unit IV, more precisely Unit IV-C-III, whereas the earlier interpretation was that it was the base of Unit 5.2, i.e. Unit V-B in the present terminology (see: Mücher 1985, figure 2).

Fig. 98. Site A section:

- light yellowish brown (2.5 Y 6/4) and light brownish grey (10 YR 6/2) loamy fine sand and fine sand with a lamination subparallel to the surface.
- 2 yellowish brown (10 YR 5/6) loamy fine sand turning into very fine sandy loam and loam in upward direction. Here and there a fine gravel layer subparallel to the surface. An abrupt and smooth boundary with the horizon below.
- 3 yellowish brown (10 YR 5/6) loam with many very pale brown (10 YR 7/4) mottles containing very fine gravel and artefacts. A clear and smooth boundary with the horizon below.
- 4 reddish yellow (7.5 YR 6/6) homogeneous silt loam with a massive structure, showing a clear and smooth boundary with the horizon below.
- 5 pale brown (10 YR 6/3) laminated silt loam showing a grey horizontal layer and a few frost cracks. An abrupt and wavy boundary with the horizon below.

The numbers 749-755 show the positions of the thin sections (Mücher 1985: profile Mi2).





Fig. 99. The Site A section as illustrated in figure 98, prior to thinsection sampling.

5.3.3 THE FINDS AND THEIR INTERPRETATION The fieldwork done in March 1981 was essentially directed at the establishment of the geological context of the first artefacts, rather than the excavation of a larger area. Attention was therefore first paid to the cleaning and drawing of sections, during which the positions of artefacts encountered were recorded. In a small trial trench of abt. 5 m² 34 artefacts were recorded (see fig. 100). In total, 78 artefacts were found in the fieldwork at Site A. Figure 101 gives their size distribution, indicating that the majority are small flakes. A simple, non-prepared core with one striking platform (fig. 102-3) was found, while five blade-like flakes were collected which must have been struck from a larger prepared core (fig. 102). In total, 15 artefacts could be conjoined, a combination of four artefacts forming the maximum composition. Not one flake shows signs of intentional or use retouch.



Fig. 101. Size distribution of the Site A assemblage, based on maximum dimensions, in cm.



Fig. 100. Site A: horizontal distribution of three-dimensionally recorded flint artefacts (the open symbols stand for section finds), 1. artefact <2 cm, 2. artefact measuring 2-5 cm, 3. artefact of ≥5 cm.



Fig. 102. Site A: flint artefacts, 1,2,4 flakes, 3 core, 5-7 conjoining blades, scale 2:3.

It is clear that in the fieldwork done at Site A only a small part of the original flint distribution was sampled. Despite the arrangements made with the exploiter of the pit, Site A, due to be properly excavated in the summer of 1981, was destroyed in quarrying activities.

5.4 Site D

On August 22, 1982, J.P. de Warrimont found three flint artefacts in a stratigraphical position comparable to that of the Site A assemblage, i.e. in the 'mottled zone' (see fig. 98) in the top part of Unit 5.1. As the site was threatened with immediate destruction by quarrying activities, we, that is, the author, J.P. de Warrimont and K. Groenendijk, had only one day in which to investigate the site.

For this reason our activities were limited to the screening of a 30-m long section. Within this area 20 artefacts were found over a distance of 8.5 m. All the finds consist of fine debris, with the exception of a discoidal core, shown in figure 103.

5.5 Site K

The large Site K was discovered in 1986 during a systematical investigation of the pit sections by K. Groenendijk and J.P. de Warrimont. The site was excavated by a group of students of Leiden University and local amateur archaeologists in two campaigns, in the winter of 1986/1987 and the summer of 1987.

As there was only a limited amount of time available to excavate this large site we had to choose between a detailed survey of a small surface and a more general excavation of the largest possible area. The second option was chosen, which involved collecting finds per square metre and, to a lesser extent, per quarters of a square metre. A smaller area of 24 m2 was recorded three-dimensionally in order to obtain more detailed data on the horizontal and vertical distributions of the finds. In total, an area of 370 m2 was excavated this way, under very demanding working conditions and considerable time pressure.

Figure 104 gives a first plan of the horizontal distribution of the approximately 10,450 artefacts recorded during the excavation. The distribution map clearly indicates that many finds were lost to the southeast of the excavated area due to the activities of the commercial exploiter of the pit.

As for the surface modifications of the flint artefacts recorded, it is worth mentioning that, in general, the artefacts were found in mint condition, displaying a blueish-black colour similar to 'fresh' Ryckholt flint from the region. However, after a few minutes' exposure to the air these 'fresh' artefacts changed colour to greyish-yellow/greyishwhite. In order to try to study the flints for microwear analysis in the freshest possible condition, Mrs A. van Gijn (cf. appendix I) put up her microscope in the excavation



Fig. 103. Site D: discoidal core, scale 2:3.

shed at the site. In her attempts at analysing the Site K flints, however, she was confronted with the same problem, of the apparently fresh flint surface changing into a 'sugary' surface under the microscope within only a few minutes' time. Microwear analysis of the Site K assemblage therefore has to be limited to the few tools and flakes that stayed 'fresh' after recovery.

The assemblage seems to have been situated in a primary archaeological context, as several refits could be established in the processing of the finds. These refits also include conjoining burnt flints, i.e. potlids that could be fitted to their 'parent' pieces.

Awaiting the results of a more detailed attribute analysis, which will take a considerable amount of time, we will give only a rough survey of the assemblage here.

The assemblage comprises approximately 10,450 flint artefacts, the majority of which constitute debris. The finds include approximately 150 tools, i.e. artefacts showing signs of intentional retouching, and 100 flakes with use retouch. The tools are dominated by various types of scrapers, and there is a very gradual transition to the used categories in the form of a decreasing intensity of retouch (cf. Isaac 1977). Figure 105 shows some of the more intensively retouched scrapers.

Indisputable examples of Levallois cores were not found among the 80 cores from Site K, while blade-cores are only represented by one fortuitous example, shown in figure 106-1. The Mousterian 'disc' preparation is represented by a dozen subregular cores, some of which stand midway between irregular 'discs' and discoidal cores.

Regular cores in Isaac's (1977) definition comprise a category in which the flake scars form an orderly geometric pattern. Almost all cores from Site K which can be classified as regular are high-backed biconvex discoid types with,

FINDS AND SITES DISCOVERED IN UNIT IV-C-III



Fig. 104. Site K: map of the Site K excavation area, showing the number of artefacts per square metre. in most cases, subregular centripetal (radial) patterns.

Irregular polyfacetted cores are cores having more than five flake scars that do not conform to a simple geometric pattern (*nucleus globuleux sensu* Bordes 1961). The greater part of the Site K core material is of this type.

Casual cores are blocks of stone with fewer than five discernable major flake scars, which are also well represented in the Site K assemblage.

The technological patterns evident in the cores, which provide no clear evidence of sophisticated preshaping of flakes, can, at first glance, also be observed in the flake material, which furthermore shows a striking absence of facetted butts. Only a very limited number of flakes shows signs of a more sophisticated dorsal preparation and facetting of butts. This may be explained in two ways:

1. The reduction sequences which *ended with the discard* of subregular biconvex discoid to irregular polyfacetted cores *started* as a rather sophisticated core preparation, in which 'Levallois' and 'disc' cores were produced. In a later stage of the reduction sequence these were reworked into other 'more primitive' core forms (cf. Boëda 1986).

2. An alternative interpretation is that the majority of the deviant flakes were *imported* to the site.

Future refitting studies and analysis of the specific flint



Fig. 105. Site K: 1-5 various scraper forms, scale 2:3.



Fig. 106. Site K: 1-4 various core forms, scale 2:3.

nodules used for the different artefact classes will probably yield data enabling us to choose between these two options, or to choose for a combination of the two.

At least one of the tools, the scraper shown in figure 105-2, was probably *imported* to the site, as it is made out of a rare type of flint, which is only represented by one other piece in the Site K assemblage.

Further studies will also concentrate on the analysis of the horizontal distribution of the find categories (tools, used flakes, cores and the more than 500 burnt flints). The results of these studies might help to answer the question whether the Site K find concentration was formed in several independent depositional phases, spaced in time, or in one continuous and consistent use of the site.

