CHAPTER 7
STATION DE L'HERMITAGE AT HUCCORGNE

BACKGROUND

Location of site

Huccorgne (Station de l'Hermitage) (Straus *et al.* 2000) is a large open-air site located in the valley of the Mehaigne, a tributary of the Meuse (around 10 km distant) that drains from the Hesbaye Plateau (Figs. 7.1 and 7.2). The Mehaigne river valley appears to be one of the main areas with flint sources formerly exposed on the Hesbaye Plateau (along with other sources, such as Orp, exploited at least beginning with the Magdalenian period). Systematically surveyed in the 19th century by Fraipont and Tihon (1889), the Mehaigne valley yielded a dozen or so cave sites containing archaeological material from Middle Paleolithic to Neolithic.

Two collections were analyzed from different areas of the site, resulting from excavations by Haesaerts in 1976/1980 and by Straus and Otte in 1991-93 in the garden of M and Mme Dock (Fig. 7.3). The 1976/1980 excavations included two large trenches along 20 meters of the east side of road cut and a trench along the west side of the steep railroad cut, which was extended by the Straus/Otte excavations in 1991. The 1991 excavations included a block along the edge of the site (columns D-M, rows 5-6) and a test pit (columns Q-S, rows 25-26). 1992-93 excavations expanded along the railroad cut (columns H-L, rows 7-9) and included two test pits which yielded Mousterian material (Huccorgne-Smetz, not analyzed) across the road on the ridge crest of the oxbow meander of the Mehaigne River. The current railroad cut follows the ancient riverbed of the Mehaigne, which now meanders around a rock outcrop west of the site.

Raw material context

Primary sources of good quality flint were available locally in the Mehaigne Valley, from Cretaceous limestone deposits exposed by the Mehaigne River. Today these sources are no longer observable, buried beneath substantial loess deposits. However, worn nodules, heavily patinated and naturally broken, can be found in fields on the plateau and nodules have been found in gardens in the valley, evidencing the effects of erosion of flint from primary sources and redeposition within the loess.

Excavation history

The site was first discovered and excavated by M. De Puydt and M. Lohest in the 1880s and then excavated by F. Tihon in 1890. More recently, J. Destexhe excavated a portion of the site in 1969-70, followed by Haesaerts in 1976, Froment and Haesaerts in 1980, and finally by Straus and Otte in 1991-93.

Stratigraphy

The stratigraphic sequence of the Straus and Otte excavations in the main block excavation area (profile H-J/9-10) are the eastern end of the site, from top to bottom, has been described as follows (Fig. 7.4).

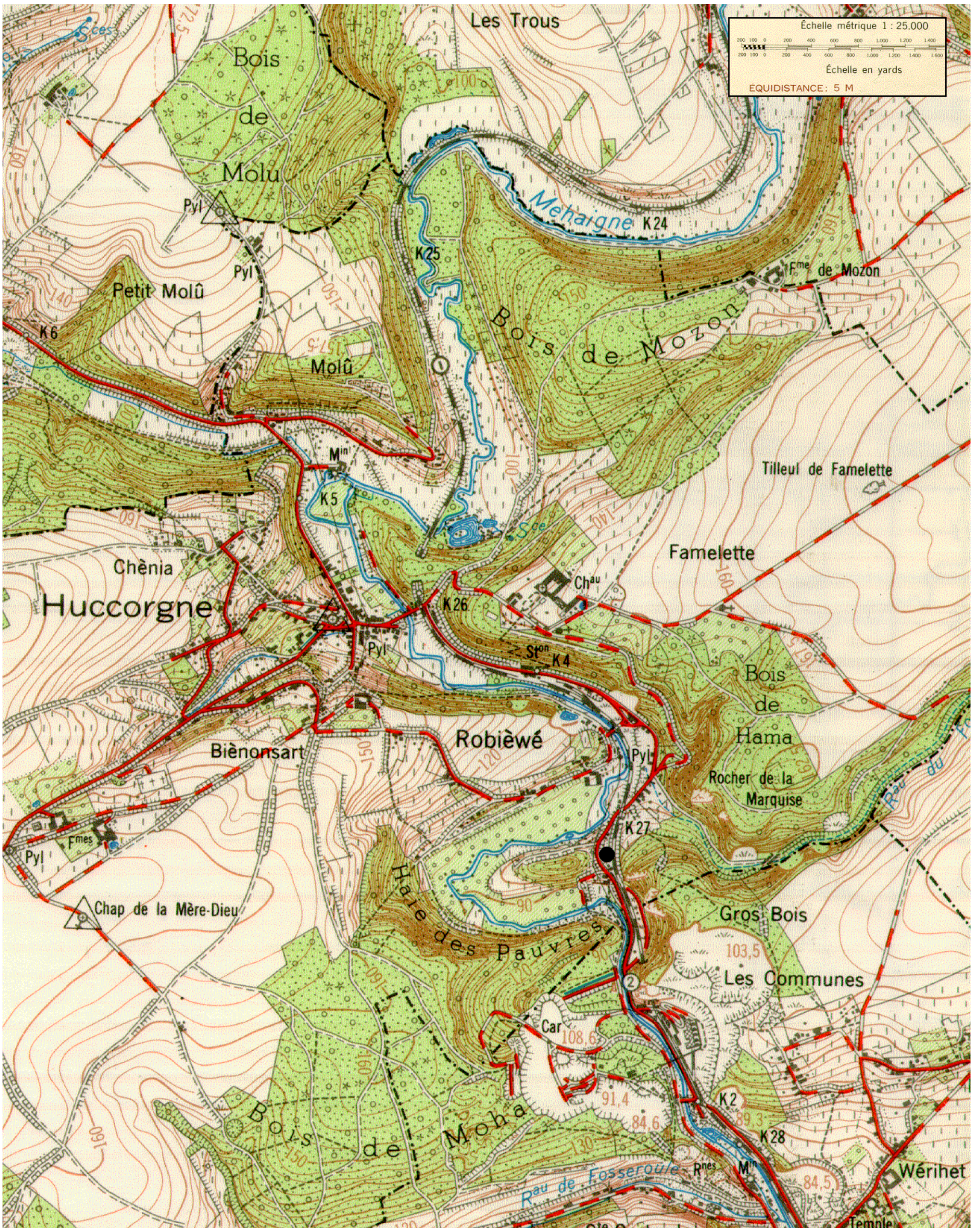

Figure 7.1. Huccorgne. Location of site.
(from Institut Géographique National map 41/5-6, scale 1:25000)

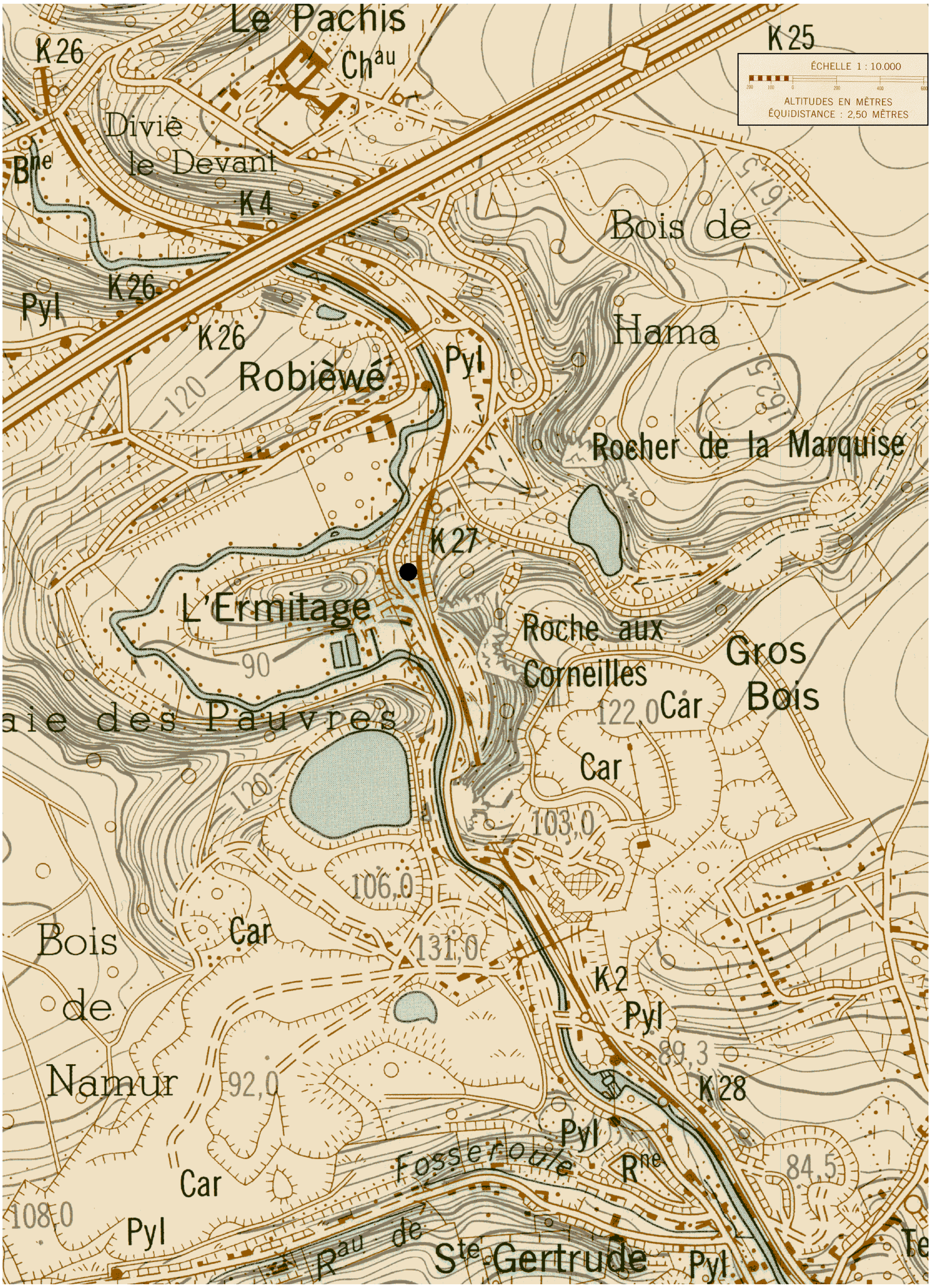

Figure 7.2. Huccorgne. Location of site.
(from Institut Géographique National map 41/6, scale 1:10000)

Stratum 1	humus and gray-brown loam	15-35 cm
Stratum 2	brown-orange silt, redeposited and stained	20-50 cm
Stratum 3	brown-red gravelly silt, locally interrupted	20-30 cm
Stratum 4	upper part: beige silt with gravel	10-25 cm
	lower part: light brown to beige loess	5-20 cm
Stratum 4.1	reddish loess	2-10 cm
Stratum 4.2	yellowish-beige silt with charcoal flecks	10-15 cm
Stratum 5	beige, very clayey silt with gravels and limestone blocks	25-35 cm
Stratum 6	pure beige clayey silt	

Archaeological materials are found primarily in Strata 4 and 4.1, with rare artifacts found in Stratum 3 due to perturbation by rodent activity, roots, and other natural agents (Otte *et al.* 1993:19). Strata 5 and 6 yielded highly altered reduction debris, primarily flakes.

Dating of the site

Huccorgne was first dated from the Destexhe 1980 excavations by conventional C14 to 23,160 ± 160 BP (GrN-9234). However, the Straus and Otte excavations, using the AMS method, yielded a series of dates ranging from 24-28,000 BP (Table 7.1). The dates support an interpretation of at least two occupations, one between 28-26,000 BP and the other around 24,000 BP (Straus *et al.* 1997:155). Stratigraphic data (see Haesaerts 2000 for discussion) suggest that Huccorgne was occupied around 26,000 years ago in comparison to around 28,000 years for Maisières.

Level	**Date**	**Lab No.**	**Material dated**	**Method**
4(?) (Destexhe exc.)	23160 ± 160 BP	GrN-9234	bone collagen	conventional
4	24170 ± 250 BP	CAMS-5893	mammoth bone collagen*	AMS
4	26300 ± 460 BP	OxA-3886	mammoth bone collagen	AMS
4	28390 ± 430 BP	CAMS-5891	mammoth bone gelatin*	AMS
4	26670 ± 350 BP	CAMS-5895	mammoth bone collagen	AMS
4.1	284 ± 52 BP **	GX-17016	charcoal flecks	AMS

Table 7.1. Huccorgne radiocarbon dates. (after Straus *et al.* 1997:153). * Same bone sample. ****** Contaminated due to downward movement of sub-modern charcoal.

Site occupation and function

With the case of Huccorgne, different excavations uncovered different parts of the site, which may or (more likely) may not have been contemporaneous. Its location on an oxbow ridge overlooking the Mehaigne River, not far from the Meuse, together with the local availability of flint, contribute to making the location one which would have been re-used, perhaps seasonally, probably over long periods, for flint procurement, and probably also for ambush hunting. As at Maisières-Canal, faunal remains are very poorly preserved in the loess matrix. There are, however, some bones and teeth of mammoth, horse and reindeer (Straus *et al.* 1997). In the main test pit at Huccorgne-Smetz, Mousterian material was found at c. 3 meters below surface. At Huccorgne-Dock (found by Tihon and Haesaerts in the railroad trench), Mousterian levels some 5 meters deeper remain to be excavated.

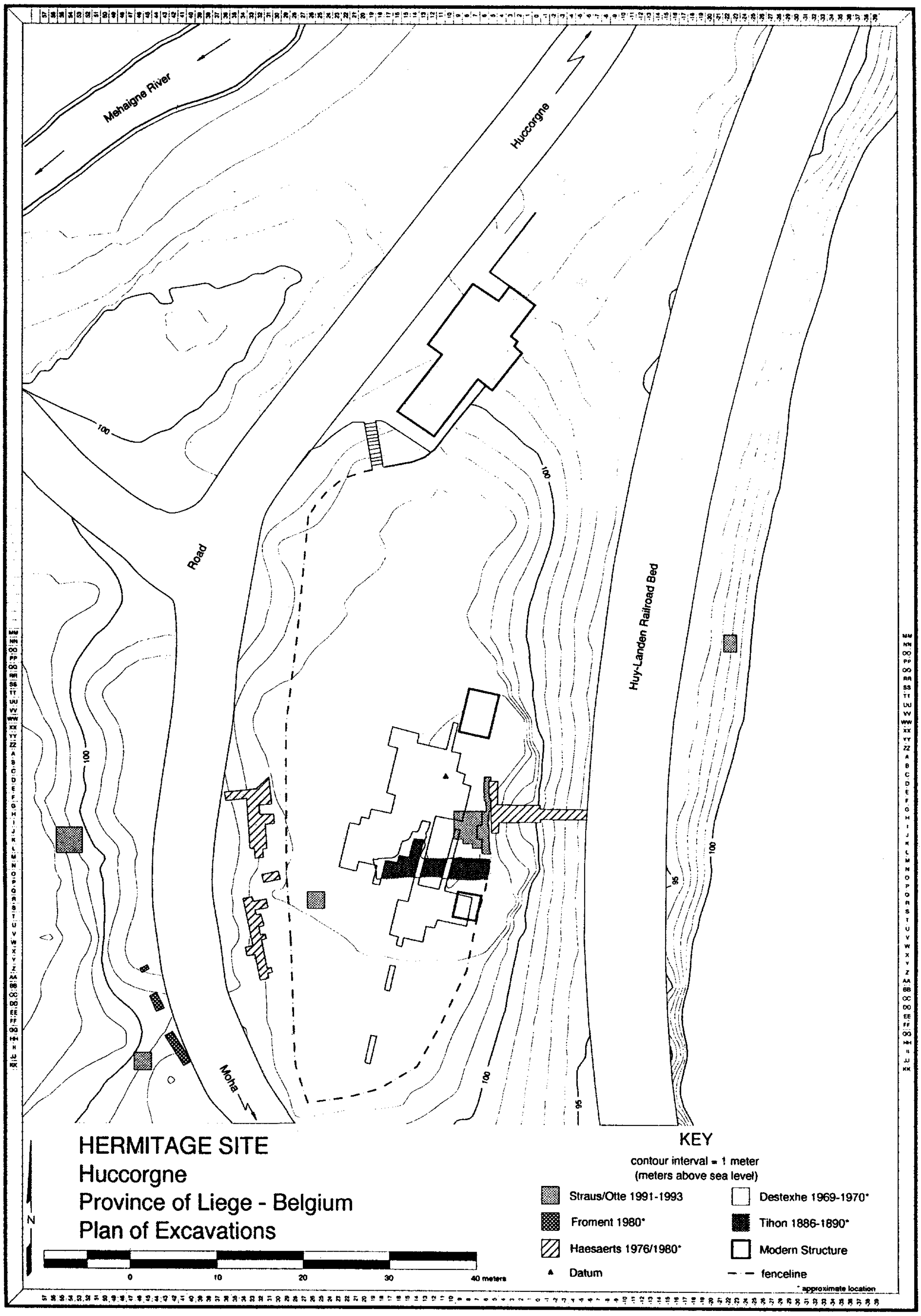

Figure 7.3. Huccorgne. Plan of excavations. (after Straus *et al.* 1997:172, Fig. 4)

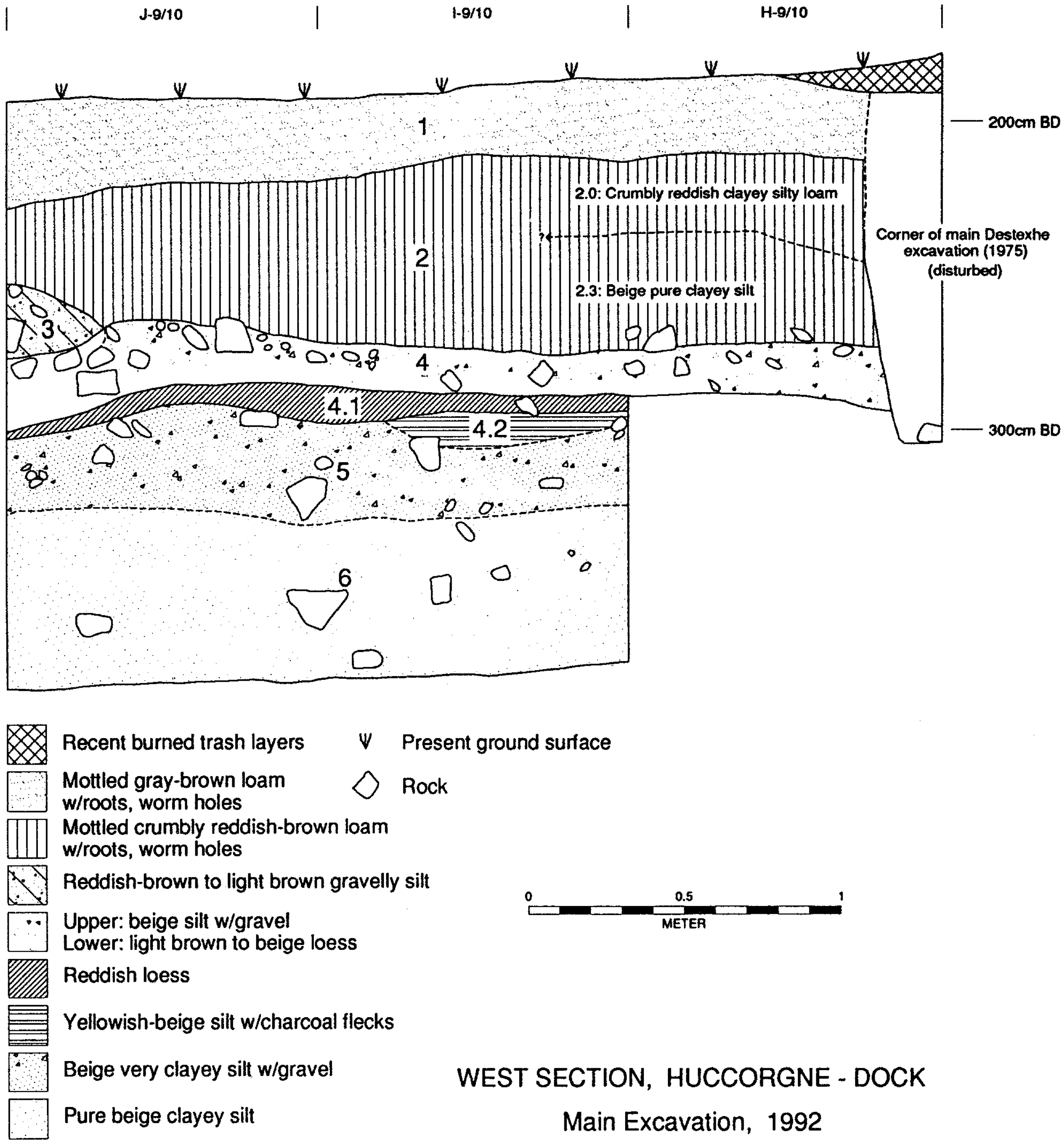

Figure 7.4. Huccorgne. West section, Huccorgne-Dock, main excavations 1992. (after Straus *et al.* 1997:174, Fig. 6)

Description of assemblage and industry attribution

The assemblage is typologically attributable to the Gravettian with tanged Font-Robert points, some of which were found in the older excavations (Otte 1979), though not in the 1991-93 or 1976-80 excavations. Radiocarbon dates tend to confirm the hypothesis of a Gravettian presence at the beginning of the Tursac oscillation (*sensu lato*).

Assemblage samples

The two collections studied are summarized below (Tables 7.2 and 7.3) with respect to frequencies of raw material types by count and weight. While the Straus and Otte collection is much smaller than the Haesaerts collection (n=2540 versus 5755) and Hesbaye flint is overwhelmingly dominant, there is greater diversity in the less common raw material types. In the Haesaerts collection, only 5 artifacts are made on materials (quartzite and sandstone) other than Hesbaye flint.

Expectations

As at Maisières-Canal, Huccorgne is located in the proximity of sources of good quality flint, found in Cretaceous outcrops along the valley of the Mehaigne. Quality and abundance are not expected to affect the lithic economy.

Section 2. Ranking of materials by frequency and weight

For the Straus and Otte collection, material types are ranked similarly by count and weight, except that the heavier limestone moves up to second place by weight (Tables 7.4 and 7.5). For the Haesaerts collection, Hesbaye flint is overwhelmingly dominant and the very rare quartzite and sandstone are considered Rank 3 (i.e., no Rank 2 materials are present) (see Table 7.3). This ranking can be reduced to three tiers (Table 7.5).

SOURCES OF MATERIAL UTILIZED

Rank 1

Hesbaye flints (Type 3) come from local Cretaceous flint outcrops exposed in the Mehaigne Valley. Four minor putative variants, differing slightly in grain size and patination, have been subsumed within Type 3. Refitting of a core by Martinez and Guilbaud (1993) shows that artifacts of these variants refit and thus are from the same source, thereby proving a degree of variability within the same source. When newly removed from sediment, many artifacts were dark blue, but patinated white or bluish-white in a matter of minutes. Inclusions are small ovoid spots and gray specks.

Rank 2

Brussels sandstone (Type 12) comes from a highly localized source on the Brabant Plateau, approximately 40 km west-northwest.

The geological source of black flint (Type 7) is unknown, but it is similar to that found in the Lanaye or Lixhe Gulpen proveniences (in the Maastricht region) and to Tertiary black flint found on the Brabant Plateau not far from the source of Brussels sandstone (sample from E. Teheux). It differs from the black Obourg flint in its greater opacity and less fine grain size.

Limestone (Type 13) is found locally and is abundant (cliffs of the Mehaigne gorge).

	Count		Weight	
Type	**n**	**%**	**wt in g**	**%**
3 - Hesbaye flint	2342	92.2	4459	90.4
4 – phtanite	3	0.1	3	0.06
7 - black flint	49	1.9	47	1.0
10 – chert	13	0.5	21	0.43
11 – quartzite	3	0.1	6	0.12
12 - Brussels sandstone	67	2.6	51	1.0
13 – limestone	37	1.5	268	5.4
100-ochre/other	26	1.0	76	1.5
Total	2540	100%	4931 g (n=1266)	99.89

Table 7.2. Frequencies of raw material types by count and weight (Straus and Otte collection). Note: The category ochre/other has been excluded from analysis but was used to calculate the percentage of the entire assemblage for the other raw material types.

	Count		Weight	
Type	**n**	**%**	**wt in g**	**%**
3 – Hesbaye flint	5750	99.9	10041	99.6
11 – quartzite	2	0.04	13	0.1
12 – sandstone	3	0.05	24	0.3
Total	5755	100.0	10077 (n=2172)	100.0

Table 7.3. Frequency of raw material types by count and weight (Haesaerts collection).

Rank	**Type**	**Count %**		**Rank**	**Type**	**Weight %**
1	3 - Hesbaye flint	92.2		1	3 – Hesbaye flint	90.4
2	12 - Brussels sandstone	2.6		2	13 – limestone	5.4
3	7 - black flint	1.9		3	12 – Brussels sandstone	1.0
4	13 - limestone	1.5		4	7 - black flint	0.95
5	10 - chert	0.5		5	10 – chert	0.43
6	11 - quartzite	0.1		6	11 – quartzite	0.12
6	4 - phtanite	0.1		7	4 – phtanite	0.06

Table 7.4. Ranking of material types by frequency and weight (Straus and Otte collection).

Rank	**No(s).**	**Type(s)**	**Count %**	**Weight %**
1	3	Hesbaye flint	92.2	90.4
2	12, 7, 13	Brussels sandstone, black flint, limestone	1.5-2.6	1-5
3	10, 11, 4	chert, quartzite, phtanite	< 1	< 1

Table 7.5. Collapsed ranking of material types (Straus and Otte collection).

Rank 3

Chert (Type 10) and quartzite (Type 11) could have been found locally on the plateau or on terraces of the Mehaigne River. Survey of the plateau region near the site yielded abundant but relatively poor quality chert on the surface.

Phtanite (Type 4) comes from a localized source on the Brabant Plateau, near Ottignies-Mousty, around 40 km to the west-northwest.

TRANSPORT OF MATERIAL

Tables 7.6 and 7.7 below summarize the transport form and general assemblage structure for the Straus/Otte and Haesaerts assemblages, respectively. Rank 1 material was acquired locally as partially prepared cores, still somewhat cortical, for reduction at the site. Although relatively rare, there were 94 primary decortication flakes from the Haesaerts excavations. For both excavations, about 21% of the Hesbaye flint was at least partially cortical. In comparison, about 42% of the local Obourg flint at Maisières-Canal was cortical. This indicates either an increase in core preparation prior to reduction at Huccorgne, or procurement of flint nodules or blocks that were less cortical to begin with. Rank 2 material was transported as exhausted cores (chunks) with very minor reduction activity occurring at the site. Rank 3 materials were transported (either from nearby [chert, quartzite] or non-locally [phtanite]) as blanks and tools with no reduction activity occurring at the site.

Given the rarity of cortex on any of the material, an assessment of procurement context is not productive. The following table (Table 7.8) summarizes the scanty cortex information.

EVIDENCE FOR REDUCTION OF MATERIALS AT THE SITE

The assemblage structure for each material varies with rank, with Rank 1 materials evidencing the majority of reduction activity at the site, with all stages of reduction present (apart from primary decortication), Rank 2 materials (in the Straus and Otte collections) reflect a much more minor degree of reduction. Rank 3 materials only appear as blanks or finished tools (with a few chunks).

What blanks were produced?

The following table (Table 7.9) shows the kinds of blanks (flakes, blades and bladelets; small debris is excluded) produced for each material type, for both assemblages. These are removals that could have potentially been retouched into tools. Many, however, may have been unsuitable for tools, in terms of shape and size, and were not selected for tool retouch.

From the Haesaerts collection, flakes and blades were produced in similar quantities (n=1120 versus 947), with significant bladelet production as well (n=432). 60 crested blades and 47 platform renewal flakes are present in the Haesaerts collection, indicating core preparation and renewal during secondary reduction. In contrast, only one crested blade and one platform renewal flake were found in the Straus and Otte excavations. This may be a result of the relative sizes of the areas excavated or intra-site activity differences. The Straus and Otte collection also shows the dominance of flakes produced on all material types. However, considering that most tools present were made on blades, the majority of these flakes, although considered *potential* blanks, are probably reduction by-products. This observation may be

Rank 1 material		
Type	**Assemblage structure**	**Brought to site as...**
3 - Hesbaye flint	4 cores, 32 tools, 1154 unretouched removals*, 1151 debris (including 198 chunks**)	partially prepared cores
Rank 2 material		
Type	**Assemblage structure**	**Brought to site as...**
12 - sandstone	36 blanks, 31 debris (including 4 chunks)	exhausted cores (chunks) and blanks
7 - black flint	1 core, 17 unretouched removals, 31 debris (no chunks)	nearly exhausted core
13 - limestone	29 blanks, 8 debris (including 4 chunks)	exhausted cores or blanks
Rank 3 materials		
Type	**Assemblage structure**	**Brought to site as...**
10 - cherts	1 tool, 6 blanks, 6 debris (including 3 chunks*)	blanks and tools
11 - quartzites	1 blank, 2 debris	blanks
4 - phtanite	2 blanks, 1 debris (chunk)	exhausted core and blanks

Table 7.6. Transport form of raw materials and general assemblage structure (Straus and Otte collection). * Chunks are probably core remnants.

Rank 1 material		
Type	**Assemblage structure**	**Brought to site as...**
3 – Hesbaye flint	8 cores, 142 tools, 2428 unretouched removals, 3172 debris (including 219 chunks)	partially prepared cores
Rank 3 material		
Type	**Assemblage structure**	**Brought to site as...**
12 - sandstone	1 tool, 2 blanks	tool and blanks
11 - quartzite	2 blanks	blanks

Table 7.7. Transport form of raw materials and general assemblage structure (Haesaerts collection).

		Cortex		Proportion		Primary Context		Secondary Context	
Rank	**Type**	**n**	**%**	**n < 50%**	**n > 50%**	**n**	**%**	**n**	**%**
1	3 – Hesbaye flint	486	20.8	54	22				
2	12 - Brussels sandstone	9	13.4						
2	7 - black flint	5	10.5						
2	13 - limestone	22	59.5						
3	10 - chert	4	30.7		1			1	
3	11 - quartzite	2	66.6						

Table 7.8. Procurement context: cortex data (Straus and Otte collection).

related to the export of the majority of blades that were produced, considering that most tools were made on blades.

Material	total n (blank pool)	flakes		blades		bladelets	
		n	%*	n	%	n	%
Straus and Otte							
3 – Hesbaye flint	1184	821	69.3	256	21.6	107	9.0
12 – Brussels sandstone	36	18	50.0	10	28.0	8	22.0
7 – black flint	17	9	52.9	6	35.3	2	11.8
13 – limestone	29	19	65.5	8	27.6	2	6.9
10 – chert	7	4	57	3	43	0	0
Haesaerts							
3 – Hesbaye flint	2559	1120	44	1007	39	432	17

Table 7.9. Blank production by material type. *Percent of blank pool.

What blanks were selected for retouching into tools?

The following table (Table 7.10) shows the number of tools made on the different kinds of blanks, with a clear pattern of blade preference for both excavations.

Material	n tools	flakes	blades	bladelets	chunks	PRF	debris
Straus and Otte							
3 – Hesbaye flint	32	6	22	2			1
12 - Brussels sandstone	0						
7 – black flint	0						
13 – limestone	0						
10 – chert	1		1				
11 – quartzite	0						
4 – phtanite	0						
Haesaerts							
3 - Hesbaye flint	142	41	74	16	7	3	1
12 – sandstone	1	1					

Table 7.10. Blank selection for tool production by material type.

What is the intensity of blank selection?

The intensity of blank selection refers to the ratio between tools and unused removals. Only Rank 1 material will be considered here. The ratio of tools to available blanks is extremely low: 32 tools out of 1184 potential blanks for the Straus and Otte collection and 143 out of 2559 for the Haesaerts collection. The low number of tools, cores and blade blanks remaining in the site may be due to the main function of the site as a flint workshop for the export of tools and prepared cores. Size would have had a crucial threshold for blank selection, Straus and Otte, whole blades, tools vs. blanks, Hesbaye flint

Variable	Number of Cases	Mean	SD	SE of Mean
LENGTH Length				**p=.098**
Blanks (unretouch	18	49.7778	20.724	4.885
Tools (retouched)	7	64.5714	14.397	5.442
WIDTH Width				**p=.061**
Blanks (unretouch	18	22.6667	6.903	1.627
Tools (retouched)	7	28.8571	7.426	2.807
THICK Thickness				**p=.173**
Blanks (unretouch	18	7.4444	3.899	.919
Tools (retouched)	7	11.4286	6.579	2.487

Straus and Otte, whole flakes, tools vs. blanks, Hesbaye flint

Variable	Number of Cases	Mean	SD	SE of Mean
LENGTH Length				**p=.000**
Blanks (unretouched)	107	18.5981	9.995	.966
Tools (retouched)	2	59.0000	21.213	15.000
WIDTH Width				**p=.000**
Blanks (unretouched)	107	17.5234	9.237	.893
Tools (retouched)	2	45.0000	21.213	15.000
THICK Thickness				**p=.000**
Blanks (unretouched)	107	3.9720	2.866	.277
Tools (retouched)	2	15.0000	4.243	3.000

Haesaerts, whole blades, tools vs. blanks, Hesbaye flint

Variable	Number of Cases	Mean	SD	SE of Mean
LENGTH Length				**p=.493**
Blanks (unretouched)	97	35.1856	10.641	1.080
Tools (retouched)	4	39.0000	16.269	8.134
WIDTH Width				**p=.319**
Blanks (unretouched)	97	14.6082	5.634	.572
Tools (retouched)	4	17.5000	6.351	3.175
THICK Thickness				**p=.101**
Blanks (unretouched)	97	5.0103	2.624	.266
Tools (retouched)	4	7.2500	3.403	1.702

Haesaerts, whole flakes, tools vs. blanks, Hesbaye flint

Variable	Number of Cases	Mean	SD	SE of Mean
LENGTH Length				**p=.005**
Blanks (unretouched)	541	26.3826	9.825	.422
Tools (retouched)	27	31.8519	11.733	2.258
WIDTH Width				**p=.207**
Blanks (unretouched)	541	23.6673	9.129	.392
Tools (retouched)	27	27.2222	14.148	2.723
THICK Thickness				**p=.021**
Blanks (unretouched)	541	5.7172	2.961	.127
Tools (retouched)	27	7.6296	4.001	.770

Table 7.11. t-tests comparing whole blades and blade tools, whole flakes and flake tools.

with the rest of the flakes and blades at the site having been rejected as too small. Some or even many of the blades and large flakes could have been used unretouched.

Is there a size difference between blanks and tools?

T-tests comparing size of tools and blanks are not valid, due to the limited sample of tools in comparison to the large numbers of unretouched removals Table 7.11). However, one can observe that, generally speaking, tools made on blades are longer than whole unretouched blades in the Straus and Otte assemblage while there is little or no difference for either blades or flakes in the Haesaerts assemblage. Flakes cannot be interpreted, due to sample size.

EVALUATION OF LITHIC ECONOMY WITH RESPECT TO RAW MATERIAL CONTEXT

The ranking of materials reflects distance in space and time (recent past of the group occupying Huccorgne). The "oldest" materials, the ones that had been transported the longest and furthest, have been completely exploited and all that remains are a few curated tools and blanks that were finally discarded. This is the case for the Rank 3 material phtanite. The other Rank 3 materials - chert and quartzite - were available locally, but were not significantly exploited, given the availability of the much better quality flint.

When one considers that the few Rank 2 materials arrived at Huccorgne nearly exhausted, one could argue that the flint sources in the Mehaigne valley were known, thus making it unnecessary to transport mobile toolkits to the site but merely a supply of blanks for possible use en route. Evidence of *at least* two separate occupations is given by the refitting of the core by Martinez and Guilbaud (1993), which shows two distinct stages: one of core reduction and one of attempted reduction at a later point in time which resulted in the shattering of a frost-affected core. Rank 2 materials include Brussels sandstone, black flint, and local limestone. If black flint can be identified as Tertiary flint from the Brabant Plateau and not as from the Maastricht region, the first two materials indicate movement from west to east. Limestone is a poorer quality material available locally that may have been used for some specific purpose that required softer stone. Rank 1 material reflects the primary function of Huccorgne as a flint workshop.

When the Straus and Otte collection is compared with the Haesaerts collection, that is, comparing different areas of the site, several comments can be made. The Haesaerts excavation covered more than twice the area of the Straus and Otte excavation (around 46 m^2 versus 18.5 m^2), resulting in a higher frequency of artifacts. However, the lithic assemblage is homogeneous with respect to raw material diversity, while the Straus and Otte assemblage contains a wider variety of Rank 2 and 3 materials. Additionally, the Destexhe excavations in the center of the site yielded a greater quantity of fauna as well as Font-Robert points. Such differences in archaeological material could conceivably reflect different activity areas or areas of differential discard.