CHAPTER 11
TROU DE L'ABÎME (COUVIN)

BACKGROUND

Location of site

The site of Trou de l'Abîme is located in the village of Couvin in southwest Belgium, on the right bank of the Eau Noire river (Figs. 11.1 and 11.2). It includes a large cave, which opens on the west face of the limestone cliff, and a terrace, which forms a large rockshelter 50 meters long and 5 meters deep (Cattelain *et al.* 1986:15).

Raw material context

There are no local flint sources in the region of Couvin. The nearest sources (Spiennes, Obourg) are 50-60 km to the north in the Hainaut Basin. Some 30 km south, in the Champagne region of France, silicified limestone, of similar quality to flint, can be found. Silicified limestone was exploited to some degree during the Magdalenian period in Belgium (e.g., particularly at Trou Da Somme, but also present at Bois Laiterie and Chaleux [Miller *et al.* 1998]) but is not yet known (or identified) in Early Upper Paleolithic sites. Unlike Trou Magrite, where local limestone was utilized, Couvinian limestone was not exploited at Trou de l'Abîme. Thus, all lithic material found at the site was imported. Depending on intended site function, the lack of local flint sources would impose severe constraints on the lithic economy as practiced at the site.

Excavation history

In 1888, the upper section of the cave was excavated by P. Gérard and then continued by Lohest and Braconnier (Lohest and Braconnier 1887-88). E. Maillieux conducted excavations in the same part of the site in 1902 (Maillieux 1903), but at the same time the site was prepared for touristic purposes. The lower cave appears to not have been excavated (Van den Broeck, Martel and Rahir 1910:341). It should be noted that the actual museum for the site is located within the cave (see Fig. 11.3).

In 1905, a series of sondages were excavated on the terrace by the Musées Royaux d'Art et d'Histoire (MRAH), by de Loë and Rahir in collaboration with Maillieux (de Loë 1906). One trench cut across earlier excavations (probably those of Lohest and Braconnier). Two trenches along the cliff face yielded mixed sediments containing medieval remains. A fourth trench near the cave was more fruitful with respect to the Paleolithic, yielding a stratum with worked flint and abundant fauna in addition to medieval and Roman levels.

In 1984-85, the Cercle Archéologique des Fagnes and the Université de Liège excavated a 2 by 3 meter sondage (Trench A) on the terrace near the 1905 excavation area, as well as two trenches (B and C) elsewhere on the terrace (Cattelain and Otte 1985, Cattelain *et al.* 1986, Ulrix-Closset *et al.* 1988) (Fig. 11.3).

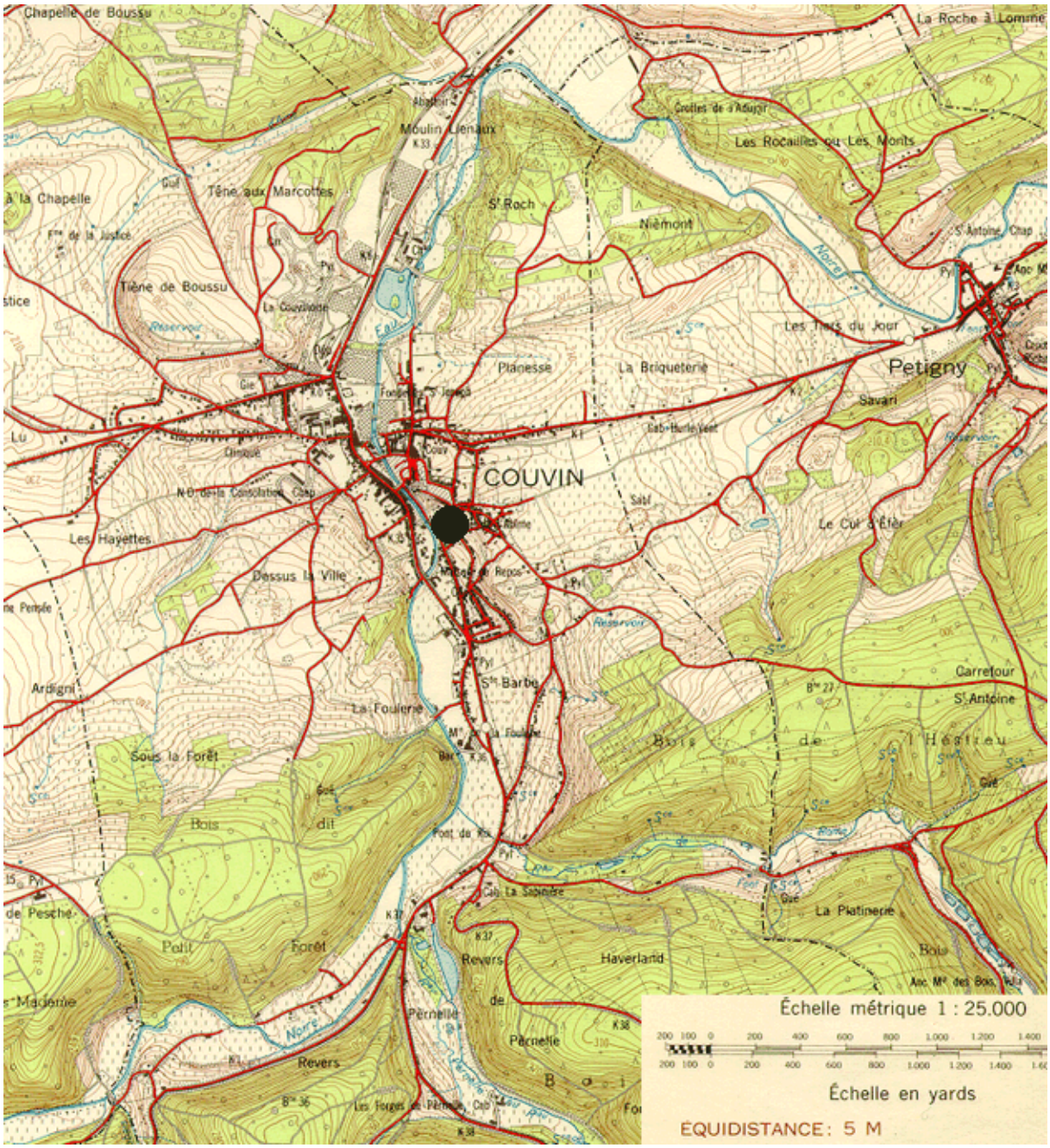


Figure 11.1. Couvin, Trou de l'Abîme. Location of site.
(after Institut Géographique National map 57/7-8, scale 1:25000)

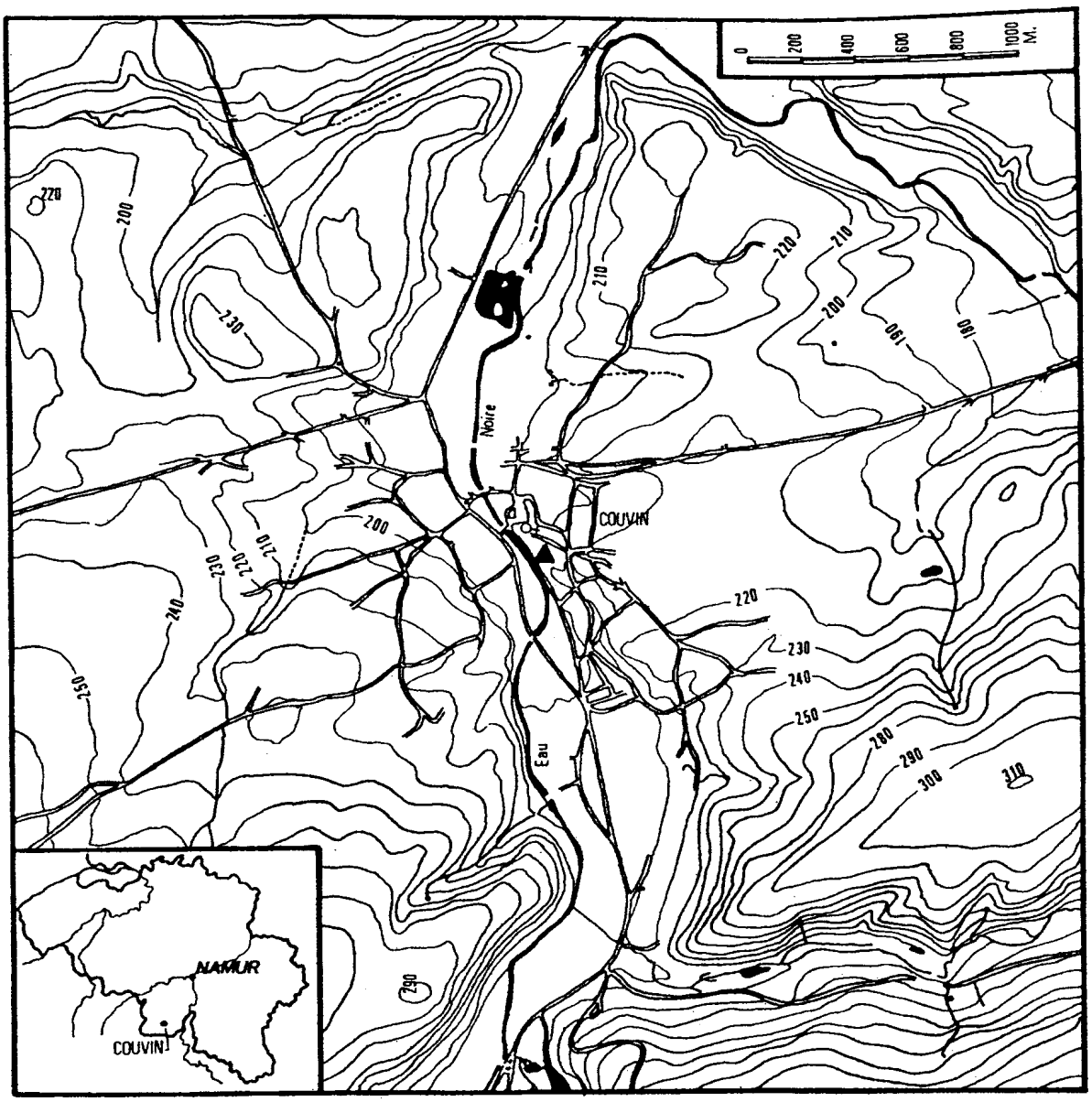


Figure 11.2. Couvin, Trou de l'Abîme. Location of site.
(after Cattelain and Otte 1985:124, Fig. 1)

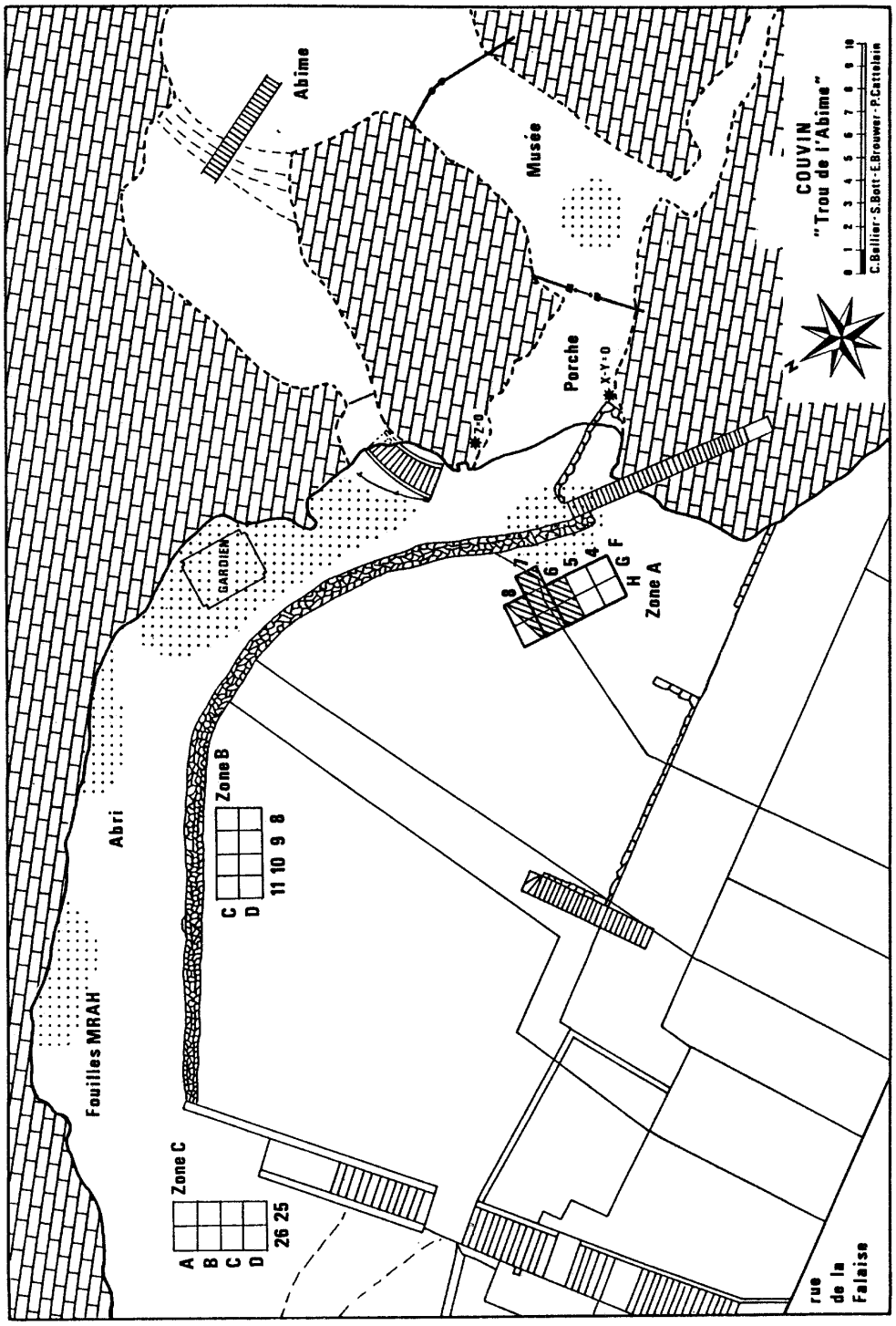


Figure 11.3. Couvin, Trou de l'Abîme. Plan of excavations.
(after Cattelain and Otte 1985:126, Fig. 2)

Stratigraphy

The 1905 MRAH excavation yielded the following stratigraphy; 1) "terrain remanié", a mixed layer coming in part from the cave, which included a medieval hearth at 80 cm below surface and a "Gallo-Roman" hearth at 2 meters below surface, mixed with worked flint, 2) pockets of intact sediment containing worked flint and abundant fauna, 3) a thick layer of large rockfall at 4 meters below surface (Cattelain *et al.* 1985:125).

The 1984-85 stratigraphy, summarized from Ulrix-Closset *et al.* (1988:227), is as follows, from top to bottom (Figs. 11.4 and 11.5):

VIII	humus
VII	gravel (floor of modern hen house)
VI	medieval and modern backfill, brown to brown-black, heavily enriched by lime mortar, containing materials from the 14th to 20th centuries
V	orange clayey silt, lacking blocks, sterile
IV	orange clayey silt containing large éboulis with rare faunal remains
III	very pure red clay, sterile
II	yellow-green clayey silt, rich in lithic and faunal remains
Ia	yellow clayey silt rich in calcite debris, sterile
Ib	yellow clayey silt, sterile

The archaeological layer (II) appears to be in secondary position, possibly coming from the cave as a result of solifluction (Cattelain and Otte 1985:128).

Dating of the site

Two dates have been produced from bone samples coming from Stratum II, one from the 1905 MRAH excavation and the other from the modern excavations (Table 11.1). The dates are quite disparate, but the older date (Lv-1559) appears to be supported by the transitional nature of the technology and typology of the Stratum II assemblage, as well as by the discovery of a Neandertal deciduous tooth in the 1984-85 sondage. The younger date could result from museum curation conditions.

Lab no.	**Date**	**Sample**	**Excavation**	**References**
Lv-720	25,800 ± 770 BP	bone	MRAH, 1905	Gilot 1984:119
Lv-1559	46,820 ± 3,290 BP	bone	1984-85 sondage	Gilot 1984:119

Table 11.1. Dates obtained at Trou de l'Abîme.

Climate and environment

Microfaunal analysis by J.-M. Cordy supports the interpretation of a temperate climate, probably corresponding to an interstadial, in the lower part of Stratum II. The upper part of the stratum evidences a progressive cooling of the climate (Cattelain *et al.* 1986:17).

The large mammalian fauna (also analyzed by Cordy) include horse, cave bear, and a bovid. Butchery and cut marks are common. An analysis of such marks, as well as of the body parts represented, would be a useful study in order to clarify specific butchery and possible transport practices.

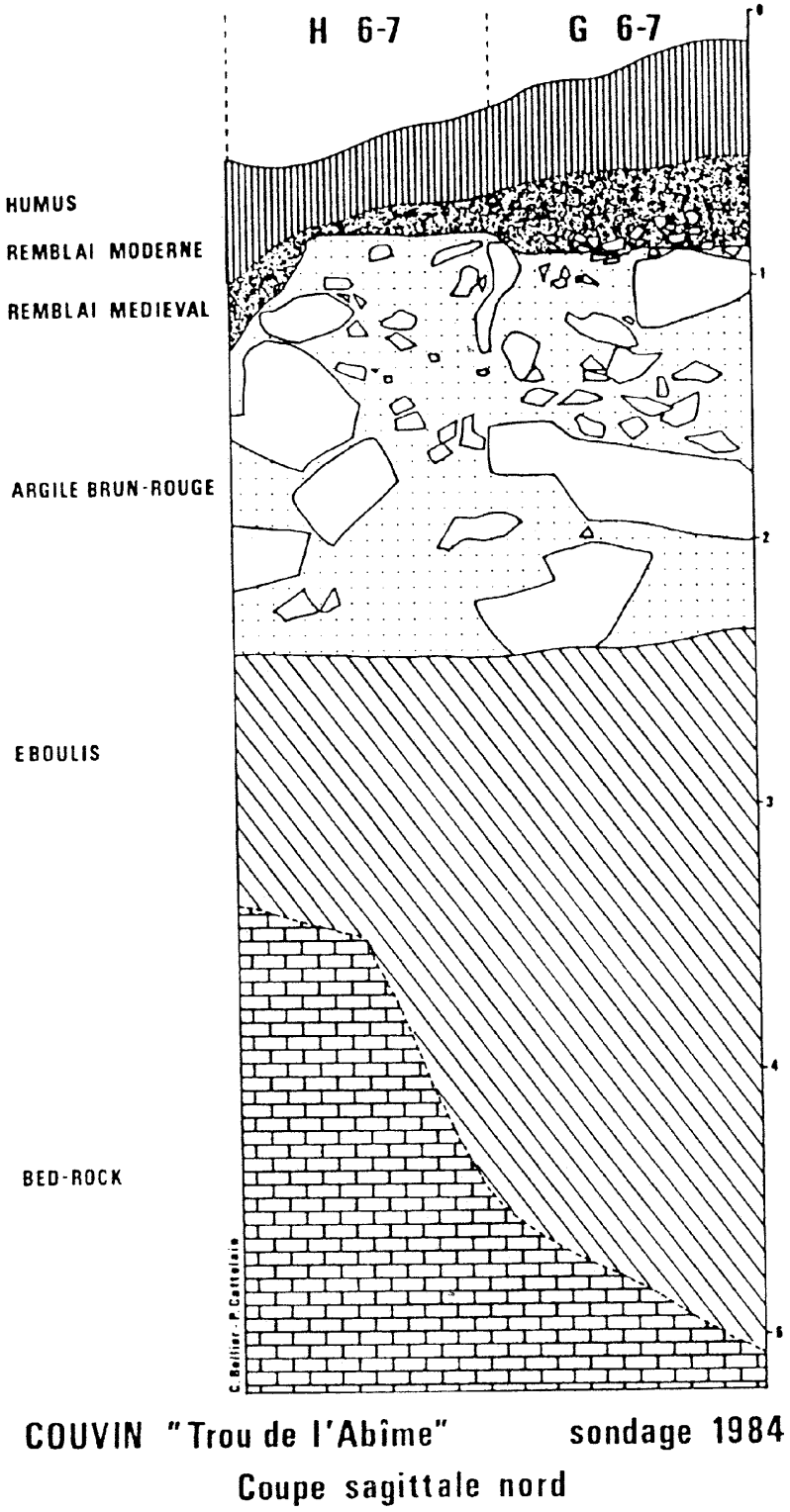
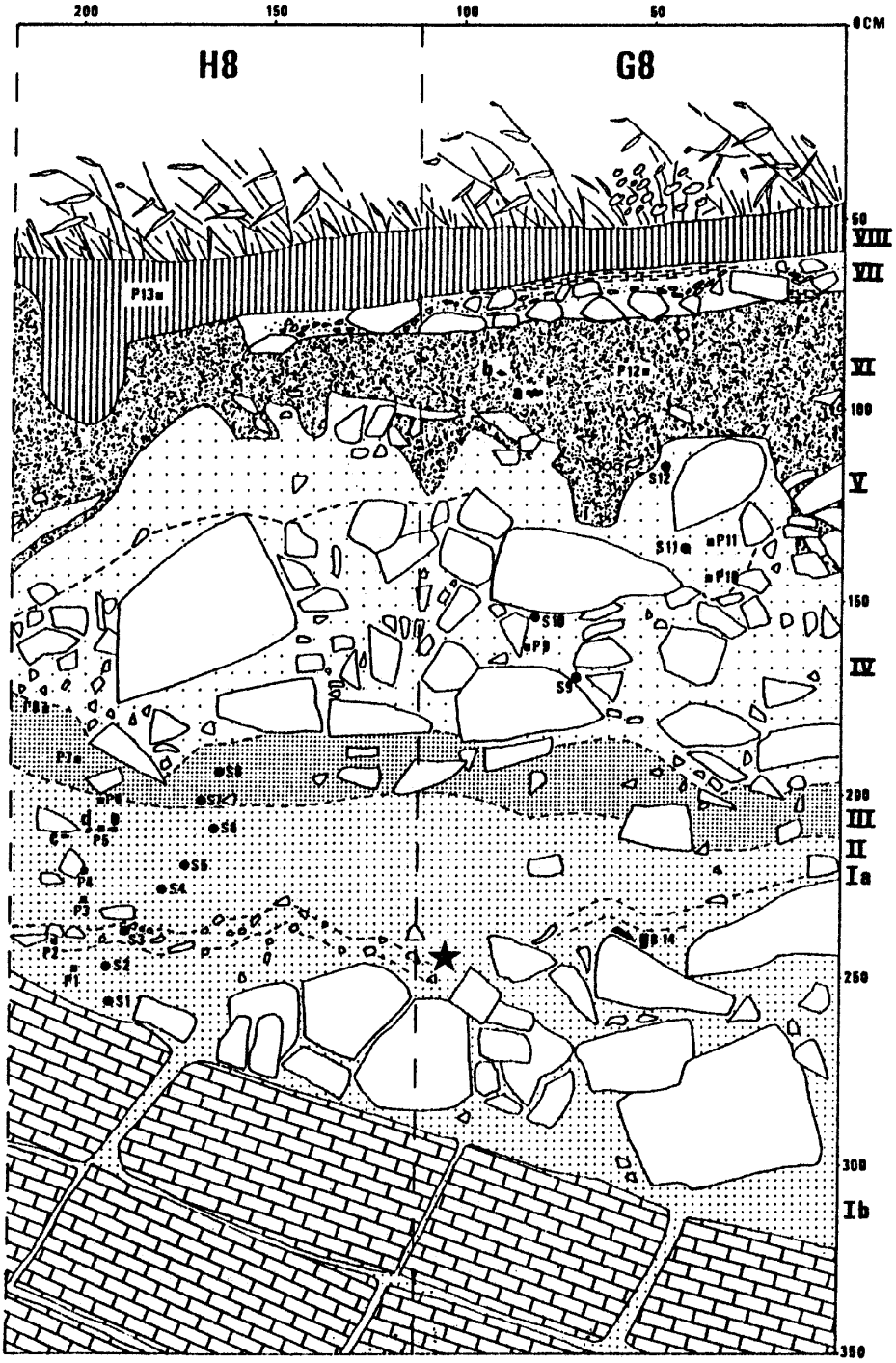


Figure 11.4. Couvin, Trou de l'Abîme. Stratigraphic sequence, north sagittal profile, G-H6-7. (after Cattelain and Otte 1985:127, Fig. 3)



P = prélèvements palynologiques
S = prélèvements sédimentologiques
* = dent lactéale humaine

Figure 11.5. Couvin, Trou de l'Abîme. Stratigraphic sequence, G-H8. (after Ulrix-Closset *et al.* 1988:235, Fig. 3)

Site occupation and function

Given the limited and as yet incomplete assemblage from the terrace (due to loss of part/most of the 1905 collection and the small area excavated in the 1984-85 sondage), any interpretations of duration of occupation and site function must be seen as provisional, particularly since the cave and rock shelter areas were probably also occupied.

However, an hypothesis can be put forward on the basis of assemblage structure, the nature of the toolkit, and the fauna recovered, at least for this section of the site. First, of the 538 artifacts (combining the two terrace-area collections), 263 – roughly half – are trimming flakes, and there are only three cores, all of which were retouched as tools. This would indicate that the sole technical activity at the site, in this area, was resharpening of already finished tools or shaping of transported blanks. Second, the presence of a substantial series of foliate points (n=11), more common here than at any other site in Belgium, could indicate that specialized activities occurred which required such a tool type. A specialized toolkit may have been transported to the site for a specific, anticipated, purpose. Third, on the large mammal fauna, butchery marks are common. One could thus interpret the site as a short-term hunting and butchery station, with little evidence of more long-term occupation. However, none of the materials recovered from within the cave, as opposed to the terrace, are available today and it is probable that the cave was used for shelter and possibly served as a more long-term camp.

Description of the assemblage and industry attribution

For the entire site, only two collections are today available: a small portion (n=45), mainly retouched pieces, from the 1905 MRAH excavation, and the material recovered from the 1984-85 sondage.

Technological analyses indicate the use of an advanced stage of the Levallois method (Cattelain *et al.* 1986:18). Both Levallois flakes and blades were produced. Unidirectional blades with the prismatic blade technique were also produced. The technology thus supports the interpretation of the industry as transitional (Cattelain *et al.* 1986:18-19).

Typological analyses indicate the use of flat, bifacial retouch to shape foliate points, which are common. Some of these pieces show affinities to the foliate points found in Mousterian contexts at Spy and the Grotte du Docteur (Ulrix-Closset 1975), while others are characteristics of those found at the beginning of the Early Upper Paleolithic at Spy and Goyet (Otte 1974, 1985). In addition, there is a blade with the base thinned using the "Kostienki technique" (inverse truncation used as a platform for longitudinal removals) (Cattelain *et al.* 1986:19).

Based on these analyses, which show elements belonging to both the Mousterian period and the Early Upper Paleolithic, Cattelain *et al.* (1986) conclude that an intermediary or transitional position between the two is indicated. If the >46,000 BP date is correct, this places Trou de l'Abîme in the early part of or just prior to the MP-UP transition in northwest Europe.

Assemblage samples and problems

A series of 45 artifacts at MRAH remaining from the 1905 collection and the 1984-85 collection conserved at the Musée du Malgré Tout in Treignes were available for study (Table 11.2). As discussed above, the limited size of the combined collection makes interpretation of analyses provisional. However, the rigorous excavation techniques for the 1984-85 sondage ensured that the maximum amount of archaeological material was recovered, along with detailed stratigraphic and spatial data.

	Count		Adjusted count	
Type	**n**	**%**	**adj n**	**%**
1 – gray flint	253	47.0	495	92.0
2 – brown/tan flint	10	1.9	19	3.6
3 – Spiennes flint	8	1.5	16	2.9
4 – quartzitic sandstone	3	0.6	6	1.1
5 – limestone	1	0.2	2	0.4
unidentified trimming flakes	263	48.9		
Total	**538**	**100.0**	**538**	**100.0**

*The 263 artifacts for which material is unidentified are all trimming flakes. It will be assumed that they reflect the proportions of the 5 different material types present. The formula (n non trimming flakes/total non trimming flake = x trimming flakes/total trimming flakes) was used to calculate the number of trimming flakes 'x') attributed to each material type. Therefore, adjusted count will be used.

Table 11.2. Frequencies of raw material types by count and weight.

RANKING OF MATERIALS BY FREQUENCY AND WEIGHT

Ranking changes slightly for count and weight, because artifacts in quartzitic sandstone and limestone are heavier than Spiennes flint artifacts, both due to the density of the material or the size of artifacts (Table 11.3).

Rank	Type	Count %		Rank	Type	Weight %
1	1 - gray flint	92.0		1	1 - gray flint	76.6
2	2 - brown/tan flint	3.6		2	2 – brown/tan flint	7.2
3	3 - Spiennes flint	2.9		3	4 – quartzitic sandstone	6.9
4	4 - quartzitic sandstone	1.1		4	5 - limestone	6.6
5	5 - limestone	0.4		5	3 - Spiennes flint	1.9

Table 11.3. Ranking of raw material types by count and weight.

The ranking can be collapsed into two ranks, which are more properly comparable to Ranks 2 and 3, or even simply Rank 3, in the other study sites (Table 11.4).

Rank	No(s).	Type(s)	Count %	Weight %
1	1	gray flint	92.0	76.6
2	2, 3, 4, 5	brown/tan flint, Spiennes flint, quartzitic sandstone, limestone	0.4-3.6	1.9-7.2

Table 11.4. Collapsed ranking of material types.

SOURCES OF MATERIAL UTILIZED

Rank 1

The source of the gray flints (Type 1) is unknown but all can probably be attributed to Spiennes sources, 50-60 km north.

Rank 2

Brown/tan flints (Type 2) can also probably be attributed to Spiennes, but the source is not clearly identified.

Type 3 is the only flint that can be definitively attributed to the Spiennes sources, based on its bluish-white patina which is common on both Spiennes and Hesbaye flints.

Quartzitic sandstone (Type 4) is probably local but source is unknown.

Limestone (Type 5) is abundant and local.

TRANSPORT OF MATERIAL

Cortex attributes and debitage analysis to identify stages of the chaîne opératoire were used to make inferences of transport form of material to the site (Table 11.5).

For Rank 1, there are three cores - all recycled as tools - and no chunks. Primary and secondary reduction stages are absent (i.e., there is no evidence of *in situ* blank production) and finished tools and/or blanks were transported to the site, where they were either initially shaped into tools or resharpened after use, given the proportion of trimming flakes present. Cortical pieces are also rare (7.3%), which is expected if tools or blanks were prepared prior to transport to the site.

Rank 2 materials were transported as finished tools and unretouched blanks as well, with no cores and no reduction debris.

Rank 1 material		
Type	**Assemblage structure**	**Brought to site as...**
1 – gray flint	56 tools, 38 blanks, 401 debris (primarily trimming flakes)	finished tools and blanks
Rank 2 material		
2 – brown/tan flint	2 tools, 8 blanks, 9 trimming flakes	finished tools and blanks
3 – Spiennes flint	1 tool, 7 blanks, 8 trimming flakes	finished tools and blanks
4 - quartzitic sandstone	1 tool, 2 blanks	finished tool and blanks
5 - limestone	1 tool	finished tool

Table 11.5. Transport form of raw materials and general assemblage structure.

Given the rarity of cortex on any of the material, an assessment of procurement context is not productive. The following table summarizes the scanty cortex information (Table 11.6).

		Cortex		Proportion		Primary Context		Secondary Context	
Rank	Type	n	%	n < 50%	n > 50%	n	%	n	%
1, 2	1-3 – flint	20	7.3	10		16		4	
2	4 – quartzitic sandstone	2	66.6	1	1			2	
2	5 – limestone	0							

Table 11.6. Cortex data.

EVIDENCE FOR REDUCTION OF MATERIALS AT THE SITE

At other sites, the assemblage structure for each material varied with rank, with decreasing inclusivity of stages of the chaîne opératoire as rank decreases. At Couvin, no reduction or blank production activity is evidenced; materials are present only as blanks or finished tools, comparable to Rank 3 and 4 materials at other sites. This pattern appears to be due to a difference in site function: where Trou Magrite was a more multifunctional, perhaps residential site, at least for Strata 2 and 3, where the frequencies of artifacts are much higher than in Strata 4 and 5. However, in all four strata at Trou Magrite, local limestone was exploited to produce blanks at the site while no blank production activity is evidenced at Trou de l'Abîme. Trou de l'Abîme was probably a logistical camp and only blanks or finished tools were transported for specific site activities (as at the Magdalenian site of Bois Laiterie [Otte and Straus 1997]).

The only technical lithic activity occurring at the site was retouching transported *flint* blanks into tools and/or resharpening tools after use. The few non-flint materials (in Rank 2) do not show evidence of retouch or resharpening. While the three cores were retouched as tools, their small size makes it unlikely that they were reduced at the site to produce blanks, but rather arrived at the site in the form of tools.

What blanks were selected for retouch into tools?

To obtain a clearer picture of the lithic industry, one can examine blank form for the tools transported to the site. The following table (Table 11.7) shows the number of tools made on the different kinds of blanks. Flakes are most common, but there is a clear laminar presence.

Material	**n tools**	**flakes**	**blades**	**crested blade**	**Levallois flake**	**bifacial thinning flake**	**cores**
1 – gray flint	56	30	14	1	1	7	3
2 – brown/tan flint	2	1			1		
3 – Spiennes flint	1				1		
4 – quartzitic sandstone	1	1					
5 – limestone	1		1				

Table 11.7. Blank selection for tool production by material type.

At other sites, the ranking of materials reflects distance in space and time. The Rank 1 materials were procured to provision the site during occupation and all stages of reduction (except primary decortication) are present. Rank 2 materials are active toolkits, diminished in volume, which are further reduced and then discarded when the Rank 1 material replaces them. Rank 3 materials are the "oldest" materials, the ones which were transported the longest and furthest and all that remains are a few curated tools and blanks which are finally discarded. At Couvin, the assemblage structure shows that *all* of the materials are equivalent to Rank 3 materials elsewhere. Only tools and blanks are present. In contrast to the other study sites, however, these materials reflect a high degree of resharpening or tool shaping at Trou de l'Abîme. This would indicate a short-term occupation, because there is no evidence of an effort to provision the site for a longer occupation. Alternatively, if Couvin had been intended to be used as a residential site, all material would have had to be imported, from a minimum of 50 km.

However, it must be stated that the lower part of the cave was never excavated, the collection from the upper part of the cave lost, and substantial portions of the terrace remain to be excavated. The inclusion of such data might completely change the interpretation of this site.