Anthropologica et Præhistorica, 112, 2001, 11–19

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A Status Report on the Lower and Middle Palaeolithic of Belgium

Le point sur la situation du Paléolithique inférieur et moyen de Belgique

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Abstract

This contribution present a general overview of the Lower and Middle Palaeolithic in Belgium, taking into account recent research of the last two decades. This evidence is used to draw a few general patterns with regard to chronology, typology and settlement systems. The latter are approached through technological *chaîne opératoire* studies. An analysis of the open-air site of Vollezele is presented in some detail and, after a comparison with other assemblages belonging to the "Charentian with Micoquian influence", an overall settlement system is inferred. It is concluded that the Middle Palaeolithic in Belgium is best represented during Oxygen Isotope Stage 5 and, later, during the Hengelo interstadial. This late Middle Palaeolithic is represented by a Quina facies and, perhaps, a Mousterian of Acheulean Tradition B. The end of the Mousterian sequence in caves is documented by assemblages with bifacial foliates. The paper ends with a few prospects for future fieldwork.

Résumé

Cette contribution donne un aperçu général du Paléolithique ancien et moyen en Belgique, en prenant en considération les recherches récentes des deux dernières décennies. La documentation est utilisée afin de dresser un tableau général, qui tienne compte de la chronologie, de la typologie et de l'organisation des campements. Cette dernière est approchée à travers l'étude technologique des chaînes opératoires. Une analyse du site de plein air de Vollezele est esquissée avec un peu plus détails et, après comparaison avec d'autres assemblages appartenant au "Charentien d'influence micoquienne", on en déduit un système général de campement. En conclusion, on peut relever qu'en Belgique, le Paléolithique moyen est surtout documenté au cours du stade isotopique 5 de l'oxygène et, plus tard, durant l'interstade d'Hengelo. Ce Paléolithique moyen tardif est représenté par un faciès de type Quina et, peut-être, par un Moustérien de tradition acheuléenne B. En grotte, la fin de la séquence est illustrée par des assemblages contenant des pointes foliacées. La contribution se termine par quelques considérations sur les prochains travaux de terrain.

1. INTRODUCTION

In the last 25 years a number of syntheses of the Lower and Middle Palaeolithic in Belgium have been published using primarily evidence from cave sites in the southern part of the country [1.7; 1.22; 1.32; 1.31]. During that same period, however, numerous open air occupations were found, some of which are providing important new chronostratigraphic evidence. Taking the latter sites into account, this contribution aims at discerning some general patterns in terms of geographical distribution, chronology and techno-typological features. For this reason, the focus will be mostly on the Middle Palaeolithic of the late Pleistocene. Earlier evidence is very scanty and not amenable to this exercise. Except for the important Lower Palaeolithic site of La Belle Roche, some open air sites on the Haine river [1.8] and perhaps a few surface sites on the northeastern edge of the Brabant plateau, it would seem indeed that most sites belong to the Middle Palaeolithic of the late Pleistocene.

The present distribution map of Lower and Middle Palaeolithic findspots on the territory of Belgium shows about 100 locations where either excavations were carried out or at which important surface collections have been assembled. Comprised as well are a number of locations were a few artifacts were in stratigraphic context and which await further excavation. In comparison with former maps [e.g. 1.22], it will be clear that the proportion of open air sites has increased significantly as compared to caves. The latter were the main focus of early Palaeolithic research in the nineteenth century, and, lately, work has also been resumed at some of these sites as at Sclayn, Trou de l'Abîme, Trou Magrite, grotte Walou, and Goyet [1.24; 1.23]. Up to very

recently, a distribution map would hardly show any open air sites except for the Haine basin, the valley of the Méhaigne and the Meuse valley north of Liège. Most of the new open air sites, unfortunately, were not properly excavated. At best, both lithic and faunal remains have been collected at the surface and a few stratigraphic observations were done in quarries. Exceptions are the sites at Kluisberg [1.11], Vollezele [1.37], Remicourt [1.17] and Veldwezelt [1.6].

2. GEOGRAPHY

Lower and Middle Palaeolithic sites occur in various geographic and geomorphological settings. More or less three zones can be distinguished.

1. In the northwestern part is the Flemish valley. This depression of Middle Pleistocene age, contains a deep sequence of Upper Pleistocene sediments, the base of which often consists of Eemian humic deposits [1.29]. Sites are found at the edges of the depression and in its extensions into the valleys of tributary rivers.
2. The central part of the country consists of loess-covered plateaux. The bedrock substrate provides outcrops of phtanite and various types of quartzite, suitable raw materials for lithic production. Further south, a central band of Cretaceous limestone is present in which good quality flint can be found. In the Haine basin to the west, numerous sites are present.
3. In the Sambre-Meuse valley and their tributaries, dissecting the limestones, many caves with stratified human occupation levels occur. Downstream of Liège, there are also a number of open air sites.

In the Ardennes uplands there are few if any traces of human occupation during this period.

3. CHRONOLOGY

Few sites are appropriately dated either by means of chronometric methods, bio- or pedostratigraphy. The earliest occupation so far is documented at La Belle Roche in Sprimont. Recently a date approaching 1 myr has been proposed for the site [1.26]. The oldest chronometric dates are available for the early Middle Palaeolithic of the Mesvin IV open air site. U/Th determinations provide an average date of around 250 ka [1.9]. According to their geomorphological contexts, assemblages found at nearby Spiennes are older than this [1.7].

Good stratigraphic evidence is available for open air sites in the eastern part of the loessic region, such as Rocourt [1.16], Remicourt [1.17] and Veldwezelt [1.6]. The latter two are at present being excavated. They have provided lithic assemblages in association with deep sequences of Middle and Upper Pleistocene deposits. At Remicourt, two small artifact concentrations are situated within a complex sequence evidencing the Rocourt soil complex, in a horizon corresponding to OIS 5c. At Veldwezelt, several concentrations of Saalian, Eemian and Weichselian age are present. Here, post-depositional effects seem particularly important and have resulted in important vertical displacement of artefacts. Moreover, the lithic assemblages are mostly very small.

Given the poor chronological control, temporal patterning can at best be looked at the very coarse resolution of main oxygen isotope stages. There are few Saalian sites and they occur exclusively in the central and southern zones. OIS 5 sites are more numerous, although a number of them should be treated with some caution in this respect, notably the sites at the edge of the Flemish Valley. For the site of Zemst, an ESR date on mammoth tooth enamel of about 120 ka is available [1.15] but here the assocation of the fauna and the lithic industry is not established. Other sites, as at Remicourt and Rocourt would seem to suggest that this occupation phase mainly concerns the later OIS 5 stages. A few Weichselian open air sites are present in the eastern part of the country. Mostly, however, the later sites are located in caves. Based on faunal analysis, Cordy [1.10] has argued that most of these assemblages, at the top of their respective sequences, belong to the Hengelo interstadial. The absolute dates for Sclayn level 1A [1.23] appear to confirm this.

As far as any conclusions can be drawn from this limited information, it would seem that the Middle Palaeolithic occupation was rather important during the onset of the last Glacial. Sites are absent in Pleniglacial OIS 4 and do not appear again until the Hengelo interstadial.

4. MIDDLE PALAEOLITHIC FACIES

One of the main issues in Middle Palaeolithic studies has been the interpretation of patterned variability emerging as assemblage

groups. The perspective on this problem has changed significantly over the years. Many researchers will now argue that in their classical expression, these groups represent an apparent structure within an essentially continuous range of variation (see Mellars [1.20] for an overview), of which the causes cannot be readily isolated. Several technological studies, however, have pointed at raw material economy as an important factor underlying techno-typological variability. The analysis of the Interglacial layer 5 assemblage at the cave of Sclayn, partitioned according to the types of raw materials present, is a particularly good illustration of this [1.21]. To an important extent then, assemblage groups would represent different raw material economies or different proportions of lithic chaînes opératoires eventually correlated with climatic fluctuations [1.27]. In that respect, it is interesting to observe that the Quina group is exclusively represented in caves.

Next to that, it is being realised that many assemblages, notably those from caves, on which this variability pattern is based, are palimpsests in which numerous individual occupations phases are condensed. Large-scaled excavations of open air settlements, e.g. Riencourt-lès-Bapaume in Northern France [1.30], reveal widely scattered occupation debris. Although in this particular case, there is no clear evidence of spatial seggregation between different industrial facies [1.2], such sites should make us question the nature of accumulations on resticted spaces available at caves. Unless the real units of analysis can be unravelled, the existence of discrete facies and their interstratifications in cave sequences will remain unclear. The latter in particular have been invoked to argue the non-cultural character of the Mousterian archaeological record [1.3]. Mellars [1.20], on the other hand, stresses that in southwest France a degree of chronological patterning among the assemblage groups is evidenced both in site stratigraphies and in absolute dates.

While the relative and absolute chronological evidence from Belgian sites is hardly at the level of resolution of that from the latter region, and given the mixing of different occupation levels in assemblages from older excavations, it would be hazardous to infer chronological patterning of this nature. Some points, however, can be made.

First, there is little evidence to support the idea that a Mousterian of Acheulean tradition, when it supposedly occurs in caves, is stratified at the base of a Middle Palaeolithic sequence [1.7]. Only at Spy, within the cave, a number of handaxes are known to be found near the base of the sediment fill [1.31]. In all other instances, the presence of a Mousterian of Acheulean tradition facies (e.g. Spy-terrace; Trou Magrite) is argued on the presence of handaxes in mixed collections [1.31].

During OIS 5, a period of relatively dense occupation, most of the assemblages belong to the Typical Mousterian. Alternatively, some assemblages have a Ferrassie affiliation but bifacial tools and true foliates are present in them. In my opinion, assemblages from Vollezele [1.37], Sclayn level 5 [1.23], Remicourt [1.17], Kesselt [1.18], Gent [1.11], and the upper site of Veldwezelt [1.6] belong to this group, as well as some cave site assemblages. Similar assemblages are known in Northern France where they are called "Charentian with Micoquian influences" [1.30]. During OIS 4, human occupation seems very limited or even absent and it is only in the stage 3 interstadials, Hengelo-Les Cottés in particular, that sites are attested again. Assemblages from cave sites now mostly belong to the Quina facies. At the cave of Spy, the Neanderthal fossils were supposedly associated with a Quina level [1.4]. In some of these claimed Quina levels, however, such as those from Trou Magrite and Trou du Sureau small handaxes occur [1.31]. Since it is beyond doubt that different archaeological levels (not to mention occupation levels) have been mixed at the time of their excavation, one might ask if these are representatives of a Mousterian of Acheulean Tradition type B. Eventually, Sclayn level 1A [1.23] and Oosthoven [1.36] may also belong to that facies.

Final Middle Palaeolithic occupations appear to be documented by assemblages with delicate bifacial foliates at Spy (*"deuxième niveau ossifère"*) and at Trou de l'Abîme in Couvin [1.32].

5. Blade reduction strategies

It is generally acknowledged now that systematic blade reduction strategies occur in the Middle Palaeolithic, even in very early contexts. In Belgium, Saalian (?) assemblages with an important blade component are Le Rissori [1.19] and Sainte-Walburge [1.31]. It does seem, however, from the scanty technological data available, that this strategy must be situated

in the context of a unipolar Levallois production method for elongated products.

Most of the OIS 5 sites have an important if not exclusive blade component. In contrast to the former assemblages, specific and true blade production methods are now attested, either as a result of adaptations in the volumetric conception of the classic Levallois concept, or as the result of a radically different, Upper Palaeolithic-like volumetric conception.

These blade reduction strategies disappear in the last glacial assemblages and are replaced by the classical Middle Palaeolithic flake production methods. Some laminar elements, however, may be present again in the latest Middle Palaeolithic industries with bifacial foliates.

6. SETTLEMENT SYSTEMS

The analysis of regional settlement patterns is difficult because of the enormous time-depth involved and poor chronological resolution. It is, however, possible to infer regional conclusions from individual sites, if the spatial dynamics of their lithic *chaînes opératoires* can be reconstructed. For the sites of Sclayn level 5 [1.23] and Vollezele [1.28] such data are available and I will use them, together with a number of others, to interpret the nature of a settlement system during the last Interglacial. Given the presence of foliates all these sites may belong to the Charentian with Micoquian influences.

6.1. Dense accumulation sites

6.1.1. Sclayn level 5

As already mentioned above, a technological analysis per raw material category at Sclayn shows that this assemblage is the result of three distinct techno-spatial processes: import of finished products from far-away sources, import of flint volumes from middle range distance for Quina-type local reduction and unstandardized reduction of locally available materials [1.5; 1.21; 1.34].

6.1.2. Vollezele

For the Vollezele assemblage, a *chaîne opératoire* study was performed with the individual raw material unit (RMU) as the unit of analysis. An RMU corresponds to one or several volumes of raw material giving way to one or more reduction sequences (cores) and originating probably from the same location within a particular raw material source area. It appeared possible to identify RMU's in a reasonably reliable way on the basis of macroscopic features of individual artefacts. Using this level of analysis to examine the technological structure of the Vollezele assemblage, it appears that there is considerable variation, even within raw material originating from the same source area.[1]

Following a technological classification [1.14], a distinction was made between local production (RMU's where most or all technological stages are represented) and imported products (RMU's only containing one or two specific technological stages, e.g. cores and/or endproducts). Though the latter RMU's are always small in numbers of artefacts, the recurrent pattern in the technological composition of 20 units strongly suggests that there is no problem of representativity involved. These imports are made either on raw material from a distant source, or, quite amazingly, on flint pebbles available in the immediate vicinity of the site. As a matter of fact, no local pebbles at all seem to have been locally reduced. About 45 RMU's are the result of local production in one or another form. The raw materials are brought in from either the Hâine basin, some 40 km to the south of the site (25 RMU's), or from other distant sources.[2]

For the locally reduced RMU's, a principal component analysis was performed using technological frequency data.[3] Two rather clear groups appeared:

(i) most of the Haine basin volumes appear to be introduced as unprepared or only slightly prepared blocks and they were reduced according to both Levallois and non-Levallois strategies in a rather expedient way.

(ii) another group contains mostly volumes from other distant sources. Its technological structure reveals a very intensive reduction process wherein Levallois cores in their

[1] Some caution is warranted in the use of these results, since the technological structures are established on the basis of sometimes very small sample sizes. A RMU consisting of one Levallois blank, for instance, would give way to the inference of an entirely different transportation mode if a cortical flake were present in the same RMU. Unless a very consistent pattern can be observed, small-sized RMU's may be unreliable, especially given the fact that the Vollezele site underwent significant postdepositional displacement and given the incomplete excavation.

[2] Most of the RMU's from distant sources other than the Haine basin are small-sized, containing less than 11 artefacts.

[3] Only RMU's with more than 10 artefacts are comprised in the analysis.

final state of exploitation were either further exploited as discoidal cores or were taken away from the site. The volumes were initially introduced at the site as already prepared cores. As attested by other RMU's, individual products out of raw material from these same sources, are also imported.

In both modes of local reduction, the subsequent export of cores, Levallois endproducts and possibly retouched tools from the site seems to be a rather common procedure.

6.1.3. Interpretation

On the basis of this evidence it might be argued that the open-air site of Vollezele was integrated in an exchange network through which specific raw materials were obtained and exported. On the one hand, there is the presence of different treatments of flint (import of prepared blocks versus import of finished products) from the same distant sources. If the site was self-supporting in terms of raw material acquisition, the co-existence of these two different modes seems hard to explain. On the other hand, the site also assumed the role of a workshop where Haine basin volumes were transformed into export products, perhaps for sites in the network located at much further distance from that particular source. This interpretation, however, is only valid if it is assumed that it represents a single occupation event. Alternatively, it may be a palimpsest where the different modes of raw material acquisition and treatment correspond to different occupational events.[4]

In terms of raw material economy, both Sclayn level 5 and Vollezele show a great deal of similarity. It is furthermore noteworthy that the same raw material sources are represented. Both types of sites (cave and open air) were perhaps part of the same larger settlement system. The *chaîne opératoire* differences between the two are particularly interesting in this respect. At Sclayn, local volumes are reduced within the cave whereas at Vollezele, their reduction must have taken place in the wider vicinity of the site. Next, far-range materials are attested in Sclayn only in the form of imported products, whereas at Vollezele they were often introduced as initially prepared cores. The pattern at Sclayn might be taken to correspond to a winter occupation where most activities were preferably restricted to the shelter. The far-range imports may have been brought along from summer occupations, while there was no continued supply of such materials during the winter season. Vollezele, by contrast, would be a summer residence during which time distant raw materials were passed through the exchange network in various forms.

6.2. Small scatters

Last interglacial occupations in good conditions of preservation at sites as Remicourt, Rocourt and Veldwezelt, all located in the eastern limestone area, are typically small debitage scatters. They may be involved in the exchange network as short-term workshops. It is in the technology of these assemblages of the "Charentian with Micoquian influence" that the laminar component is most prominent. The underlying reason for this technological change remains unclear but it may have to do with increased population densities, lesser visibility of sources, and concordant stress on raw materials.

Small scatter sites also occur in the northern zone, at the edges of the Flemish Valley [1.34; 1.35]. Unfortunately these are badly documented but they seem to display a very different structure as the former. In particular, they contain relatively high proportions of retouched tools and little evidence of debitage activities. Perhaps they form another functional component of the overall settlement system, related to meat procurement. At most of these locations, faunal remains were also collected but their assocation with the Middle Palaeolithic human debris is not certain.

7. Some general conclusions

The Middle Palaeolithic occupation of Belgium seems to have been most extensive during later OIS 5. In typological terms, such assemblages belong to the Typical Mousterian or the Charentian with Micoquian influence as defined in Northern France [1.30]. As others,

[4] As the site was located near a spring [1.37], it must have formed a permanent point of attraction in the landscape. Furthermore, postdepositional displacement of the archaeological material took place, perhaps accumulating debris from different occupation phases. The fact, however, that local flint pebbles are present in the excavated area only as imported RMU's and that they must have been reduced somewhere in the close vicinity, suggests that the displacement was very local. It probably involved an original dense concentration which may have been accumulated in a confined space. Therefore, one rather long-term occupation might perhaps be inferred for the site.

I do believe that Mousterian assemblage groups reflect in large part differential proportions of particular lithic raw material strategies [1.12] and a degree of diachronic change in the latter [1.20]. In fact, much of our understanding at present is hampered by our limited knowledge of site formation processes. Even if this structure, established on the basis of only a few general and quantitative assemblage features, represents mostly a formal classification of a continuous economic range, at least some facies may have cultural significance [1.20; 1.13]. The latter may be apparent in simple qualitative typological data or *type fossils*. Such are perhaps the bifacial foliate tools in last Interglacial Charentian assemblages from northwestern Europe. These sites were apparently integrated in a settlement system involving seasonal camp sites and small functionally specific components. This Mousterian facies shows affinities with Central Europe and perhaps represents the influx of eastern groups. At a world-wide scale, the last Interglacial appears as a very important period during which populations expanded significantly and technological reorganisations occurred. The combined effect of population increase or expansion and economic constraints may have triggered a more efficient lithic production as evidenced by the presence of blade reduction strategies in many assemblages.

In early OIS 4 new reorganisations take place. The Belgian territory is deserted during this period. Only during the Hengelo interstadial there is renewed human presence. The Quina Mousterian, although being a "cave facies" determined by environmental constraints, represents a new Neanderthal expansion from the south. Later, according to the evidence from sites as Spy and Couvin, bifacial foliates appear again, and shortly afterwards the first Aurginacian occupations [1.32]. Would this latest bifacial Mousterian not be Aurignacian already, and in that regard, be comparable to the Szeletian of Central Europe [1.1]?

In terms of future field research finally, I would like to point to the extraordinary potential of the Flemish Valley for containing well preserved Middle Palaeolithic sites. Survey of its edges should be very rewarding. At the same time, what remains of cave sites may be further exploited. This may prove worthwhile in establishing relationships with the open-air sites of the northern occupation zones. As a crucial period in human evolutionary history, the Middle Palaeolithic deserves this attention.

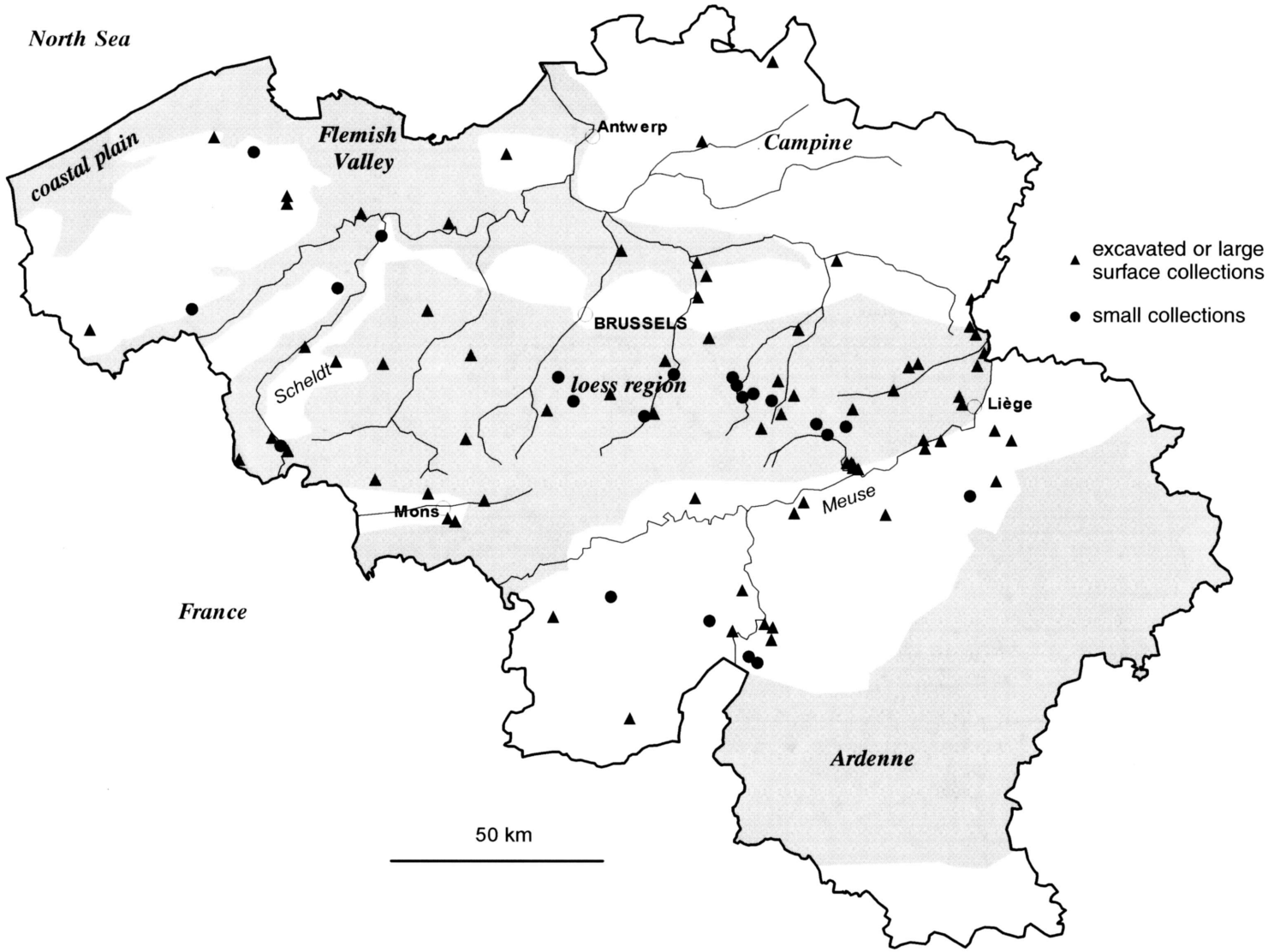

Fig. 1.
Map of Belgium with major geographical regions and distribution of Lower and Middle Palaeolithic sites.
Carte de Belgique avec indication des grandes zones géographiques et de la distribution des sites du Paléolithique inférieur et moyen.

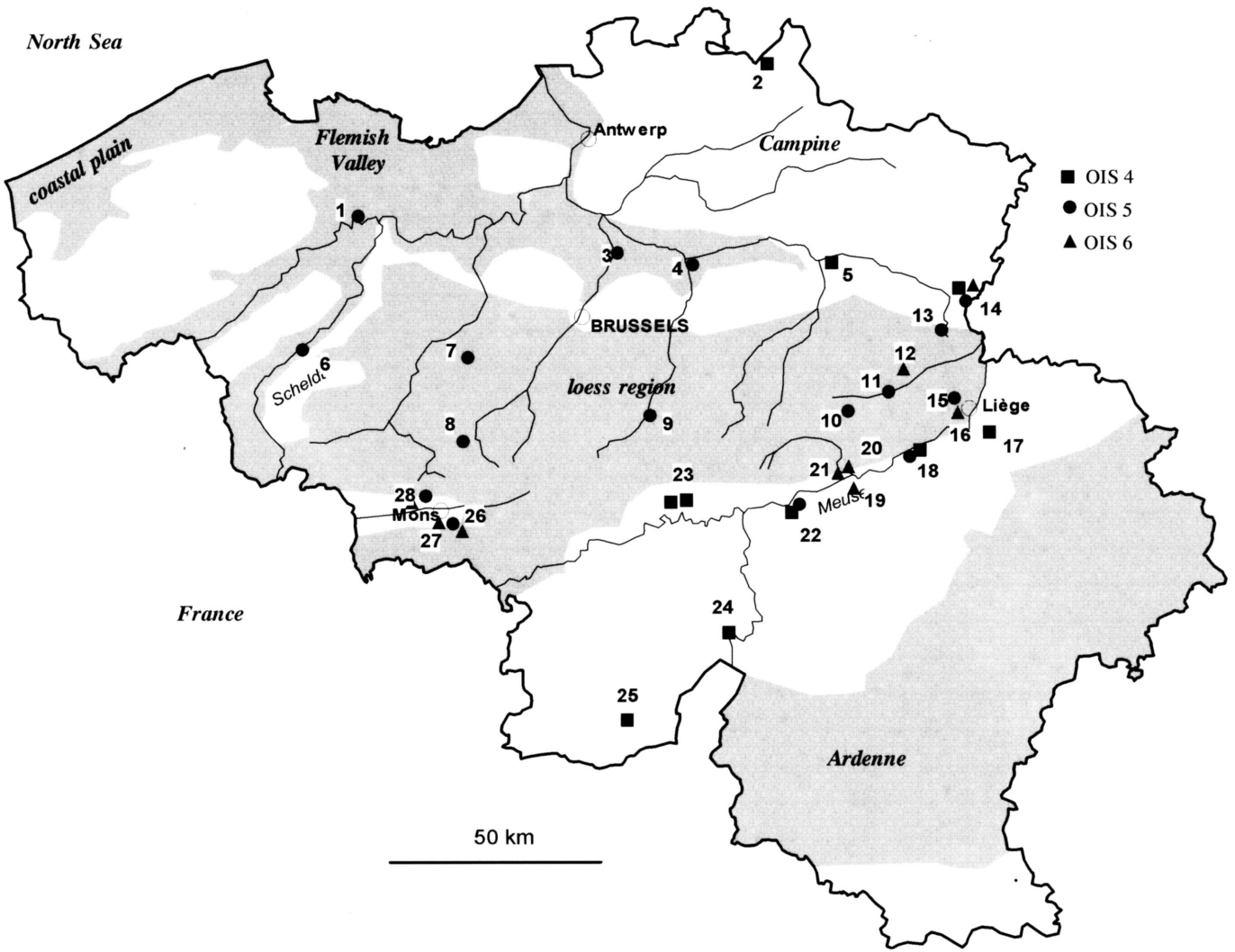

Fig. 2.
Middle Palaeolithic sites according to main OIS stages.
Sites du Paléolithique moyen selon les principaux stades OIS.

1. Gent; **2.** Oosthoven; **3.** Zemst; **4.** Rotselaar; **5.** Schulen; **6.** Kluisberg; **7.** Vollezele; **8.** Le Clypot; **9.** Franquenies; **10.** Omal; **11.** Remicourt; **12.** Otrange; **13.** Kesselt; **14.** Veldwezelt; **15.** Rocourt; **16.** Sainte-Walburge; **17.** Fond-de-Forêt; **18.** Engihoul; **19.** Moha 'L'Hermitage'; **20.** Huccorgne 'Abri Sandron'; **21.** Huccorgne 'L'Ermitage'; **22.** Sclayn; **23.** Spy; **24.** Hastière 'Trou du Diable'; **25.** Couvin 'Trou de l'Abîme'; **26.** Spiennes; **27.** Mesvin IV; **28.** Le Rissori.

Raw material source		Haine basin		Local pebbles		distant sources	
		> 10	⩽ 10	> 10	⩽ 10	> 10	⩽ 10
LOCAL REDUCTION	imported blocks serve in Levallois and discoidal reductions; cores and/or Levallois blanks are exported	18	0	0	0	0	0
	prepared cores are introduced and used in exhaustive Levallois reductions terminated by a discoidal stage. Cores are sometimes exported	4	3	0	0	6	15
IMPORTS	cores in advanced states of reduction, tools, flakes	0	0	0	4	0	14

Fig. 3.

Technological structure of the Vollezele assemblage as inferred from a *chaîne opératoire* analysis. Numbers of raw material units are given according to general transportation modes and raw material sources.

Structure technologique de l'assemblage de Vollezele, selon les analyses des chaînes opératoires. Les nombres des unités de matière première sont indiqués selon les modes généraux de dispersion et les sources d'approvisionnement.

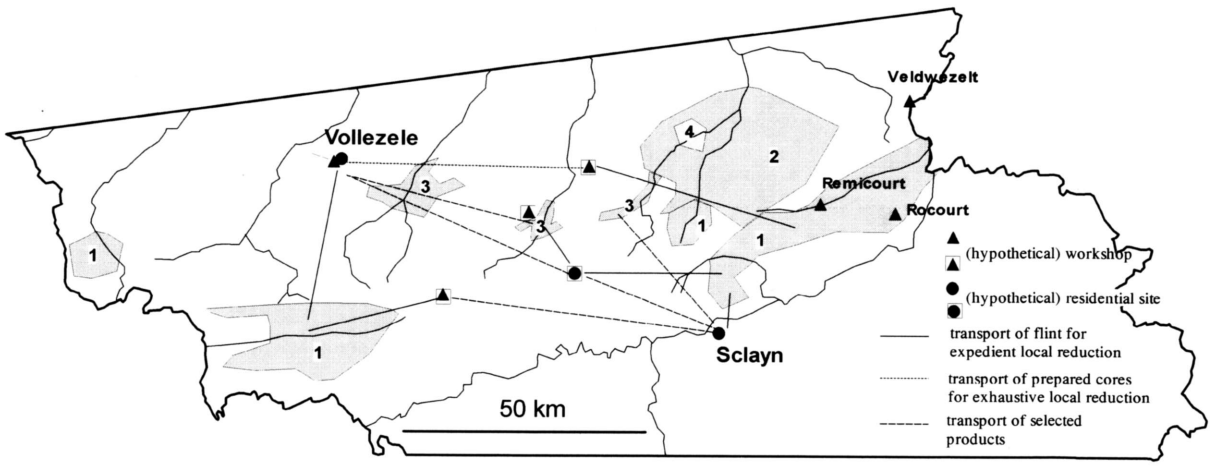

Fig. 4.

An interpretation of the transportation patterns of lithic raw materials between workshop and residential sites of the Charentian with Micoquian influence in Middle Belgium (**1.** flint; **2.** sandstone; **3.** phtanite; **4.** Wommersom Quartzite).

*Interprétation des modes de déplacement des matérières premières lithiques entre ateliers et sites résidentiels du Charentien d'influence micoquienne en Moyenne-Belgique (**1.** silex; **2.** grès; **3.** phtanite; **4.** grès quartzite).*