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A Middle Palaeolithic site with small bifaces at Oosthoven–*Heieinde* (Northern Belgium)

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1. Introduction

At Oosthoven (Oud-Turnhout, prov. Antwerp) several lithic artefacts were collected during amateur surveys on a field at the locality *Heieinde*. These finds included several small bifaces and consequently a small-scale excavation was undertaken at the location in 1993 by the *Katholieke Universiteit Leuven* to contextualise these artefacts (Van Peer & Verbeek, 1994). This paper will give an overview of the results of this excavation campaign, the characteristics of the lithic assemblage, the wider European context of the finds and the potential for further work at the site.

2. The excavation

The site of Oosthoven-*Heieinde* is situated 2 km north of the centre of the village of Oosthoven (fig. 1), northwest of the nature reserve *De Liereman*. The terrain is a slight slope, culminating to 31 m above sea level (A.S.L.), adjacent to a small stream known as 'Oosthovense Loop'. Several lithic artefacts were found exposed on the southern slope surface between 25 and 26 m A.S.L., suggesting the outcrop of Pleistocene sediments at this location due to slope evolution.

In the spring of 1993 a small test pit was dug to gain a better understanding of the stratigraphic position of the artefacts. In the test pit several lithics were found associated with a thin erosion layer on top of sands. Following the positive results of this test pit, indicating that some of the site was still in buried position, a larger trench, comprising 200m², was dug in the summer of 1993. In this excavation trench six main stratigraphic units could be distinguished (fig. 2-3):

A: plough zone;

C: orange-yellow consolidated sands, with thin layers of grey loam and numerous frost cracks;

D: grey sands with horizontal layering, truncated by an erosional level (black dots on figures 2-3 represent dispersed gravels);

E: grey homogenous coarse sands, heavily cryoturbated;

F: cryoturbated peat;

G: homogenous green sands.

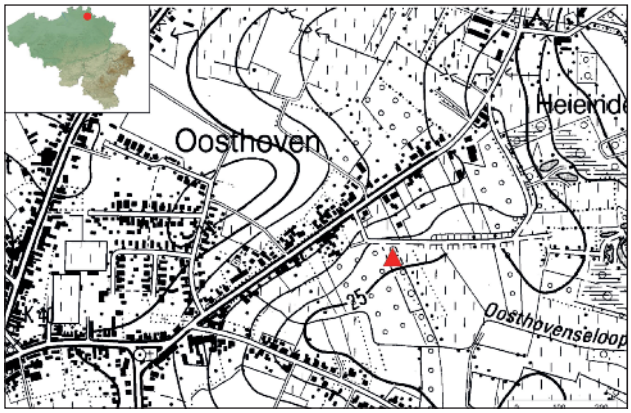
The layering in unit D is linked with a system of gullies flowing in a southwestern direction. These gullies have been filled with redeposited sediments from unit E, interpolated with grey loam layers. In the southern part of the excavation trench the sequence is slightly different with unit D being absent and the erosional layer truncating the tops of units E and F.

This erosional layer with dispersed gravels has been recorded in several stratigraphical sequences in the area and is likely to correlate with the Beuningen gravel bed which has been dated to around 22/16.000 B.P. (Bateman & van Huissteden, 1999).

In the southern part of the trench, lithic artefacts were associated with this erosional gravel layer while in the northern part the lithics are found predominantly at the base of the layered sands (unit D). In the southern part, the erosional level truncates the top of an undisturbed peat layer. Artefacts here are in fresh condition indicating that they have not been transported. Therefore, it can be assumed that originally the artefacts were associated with this peat layer. Therefore dating this peat layer is crucial to dating the assemblage.

Two samples (a piece of charcoal from the erosional layer [UtC-3315] and a fragment of wood from the peat layer [UtC-3316]) were radiocarbon dated but delivered

Fig. 1
Location of the site of Oosthoven–*Heieinde* (Oud-Turnhout, Northern Campine, Belgium).



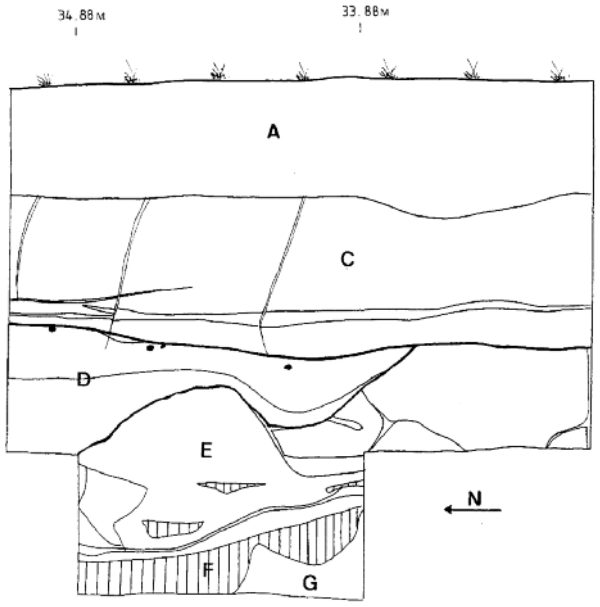


Fig. 2
Stratigraphical sequence in the northern part of the excavation trench (Van Peer & Verbeek, 1994).

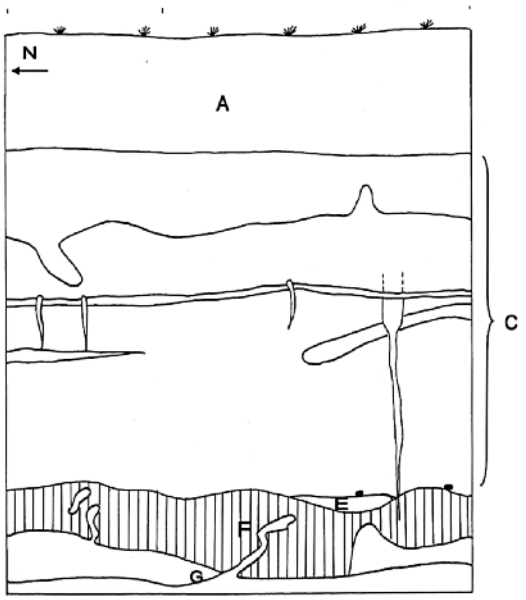


Fig. 3
Stratigraphical sequence in the southern part of the excavation trench (Ruebens, 2005).

indecisive results (Van Peer & Verbeek, 1994). Therefore the exact chronological position of the assemblage of Oosthoven-*Heieinde* remains unknown but, based on the correlation with the peat layer wich must have been formed during a warmer period. A position within an interstadial of the Last Glacial can evidently be argued.

3. The lithic assemblage

Only a low density of artefacts, less than one per m², is present at Oosthoven-*Heieinde*. The majority of the artefacts were found in the southern part of the trench, originally in association with the peat layer. The topography of the peat layer differs from the present slope. Bore holes north of the excavation trench confirmed that the peat was formed in a slight depression. Moreover at the southern edge of this depression a concentrated presence of charcoal and a burnt tooth fragment suggest the association of a combustion zone with the lithic assemblage.

Besides charcoal and one undetermined tooth fragment the archaeological material at the site of Oosthoven-*Heieinde* consists of 107 lithic artefacts (tabl. 1). Most are heavily patinated but the edges are generally fresh. The artefacts found in association with the peat layer are unpatined and very fresh, suggesting an in situ position while the other artefacts have been more reworked by taphonomic processes (Van Peer & Verbeek, 1994).

The majority of the artefacts are made on locally available flint (98,1 %), although one sandstone and one quartzite artefact are present as well. The flint is generally of high quality although some artefacts are made on frost fragments indicating a secondary context origin (e.g. the nearby river gravels).

Different reduction methods were used to obtain flakes from the flint nodules. Ten Discoidal cores have been found, indicating that this was the most commonly used reduction method. Secondly several remnants of the Levallois reduction system are present (cores, flakes and preparation flakes). Thirdly, four small blades cores have been identified although blades are not present on the site. Finally there is one irregular core, representing an unsystematic debitage technique (Ruebens, 2005).

Besides 19 cores also 33 unretouched flakes are present, including several retouch and biface thinning flakes, indicating that the knapping took place on the site itself. There are 22 flake tools, including 11 side scrapers of which three have been bifacially retouched. One Mousterian point, made on a Levallois flake, one backed knife, one atypical burin, one denticulate and several pieces with abrupt retouch complete the toolkit (fig. 4-5).

Bifacial tools form by far the best represented tool category at Oosthoven–*Heieinde* with 18 specimens. The majority of these bifaces (13) are characterised by the contrast between a finely and continually retouched tip and an unworked, often cortical, base. Moreover all the Oosthoven-*Heieinde* bifaces have small dimensions with an average length of 42,13 mm. Besides these 13 partially retouched bifaces, two bifaces are invasively retouched and more symmetrical in shape and there are also three unifaces, with invasive retouch only on one side. This dominance and variety of bifacial tools (bifacial scrapers, partial bifaces, symmetrical handaxes and unifaces) give

Cores	Tested Nodule	1	0.93%
	Core Fragment	1	0.93%
	Discoidal Core	10	9.35%
	Levallois Core	2	1.87%
	Blade Core	4	3.74%
	Irregular Core	1	0.93%
	TOTAL	**19**	**17.76%**
Debitage	Retouch flakes	3	2.80%
	Levallois preparation flakes	3	2.80%
	Biface thinning flakes	3	2.80%
	Other	22	0.56%
	TOTAL	**31**	**28.97%**
Tools	Typical Levallois Flake	2	1.87%
	Mousterian point	1	0.93%
	Single convex side scraper	2	1.87%
	Double biconvex side scraper	1	0.93%
	Convex convergent side scraper	2	1.87%
	Offset side scraper	1	0.93%
	Ventral side scraper	2	1.87%
	Bifacial scraper	3	2.80%
	Atypical burin	1	0.93%
	Backed knife	1	0.93%
	Denticulate	1	0.93%
	Abrupt retouch	4	3.74%
	Chopping tool	1	0.93%
	TOTAL	**22**	**20.56%**
Bifaces	Partial (unworked base)	13	12.15%
	Symmetrical (Mousterian)	2	1.87%
	Uniface	3	2.80%
	TOTAL	**18**	**16.82%**
Fragments		17	15.89%
TOTAL		**107**	**100.00%**

Tabl. 1
Composition of the lithic assemblage of Oosthoven-Heieinde (Ruebens, 2005).

the site a very specific character that requires comparison with other Middle Palaeolithic handaxe-bearing entities to come to a better understanding of the affiliations of the Oosthoven-*Heieinde* assemblage.

4. Bifacial tools in Europe during MIS 5d-3

The assemblage of Oosthoven is positioned at a time period (M.I.S. 5d-3) which is characterised by a general reappearance of bifacial tools in both Western and Central Europe. While in the Early Middle Palaeolithic bifacial tools became a marginal phenomenon, in the Late Middle Palaeolithic they once again form a common part of the toolkit (Monnier, 2006; Iovita & McPherron, 2011). In general two macro-regional entities rich in bifacial tools can be distinguished at this time (Soressi, 2002; Richter, 1997):

the Mousterian of Acheulean Tradition (M.T.A.) characterised by symmetrical handaxes with core area in southwest France;

the 'recent Micoquian' or *Keilmessergruppe* (K.M.G.) with a variety of bifacial tools (including foliates and backed bifacial knives) centred in Germany.

Belgium and its surrounding areas are located in between the core areas of these two distinct handaxe-bearing entities and influences from both can be recognised in the archaeological record of the region. In Belgium, over 180 Middle Palaeolithic find spots have delivered bifacial tools, indicating the common occurrence of these tool types. The majority of these sites, as is also the case with Oosthoven-*Heieinde*, lack detailed chronostratigraphical information (Ulrix-Closset, 1975; Van Peer, 2001). Outside of Belgium, but still in between the M.T.A. and K.M.G. core areas, several well-excavated sites with

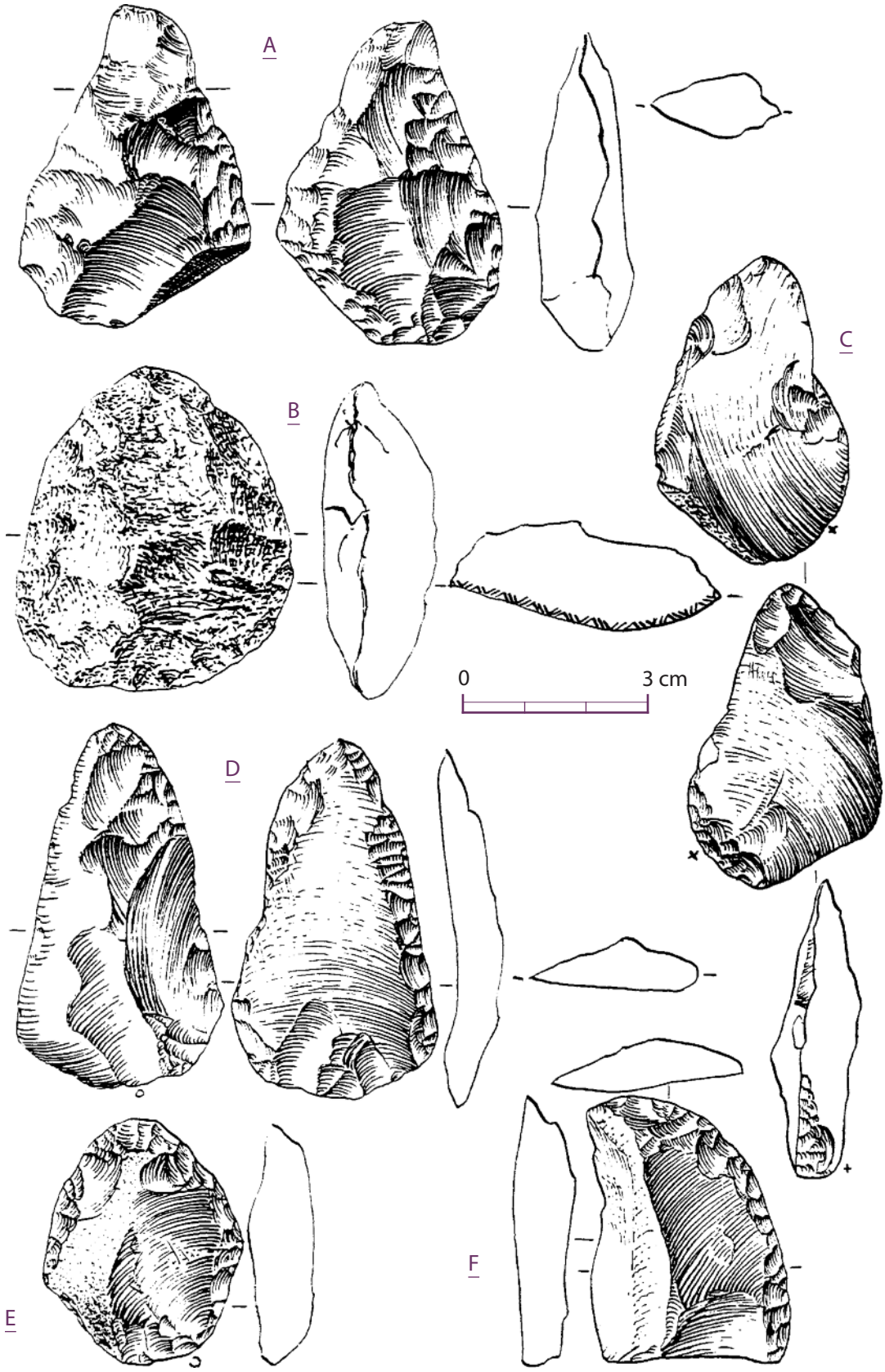


Fig. 4
Middle Palaeolithic tools from Oosthoven–*Heieinde* (A: biface, B: uniface, C: Mousterian point, D-F: side scrapers; Van Peer & Verbeek, 1994).

bifacial tools are known. For example the sites of Lynford (Norfolk, UK) and *Saint-Amand-les-Eaux* (Nord-Pas-de-Calais, France) each contains around 60 symmetrical handaxes closely linked with the southwest France M.T.A. industry (Boismier *et al.*, 2003). Other sites, such as *Saint-Julien-de-la-Liègue* (Upper Normandy, France) and *Saint-Brice-sous-Rânes* (Lower Normandy, France) are dominated by a large quantity of small bifaces of

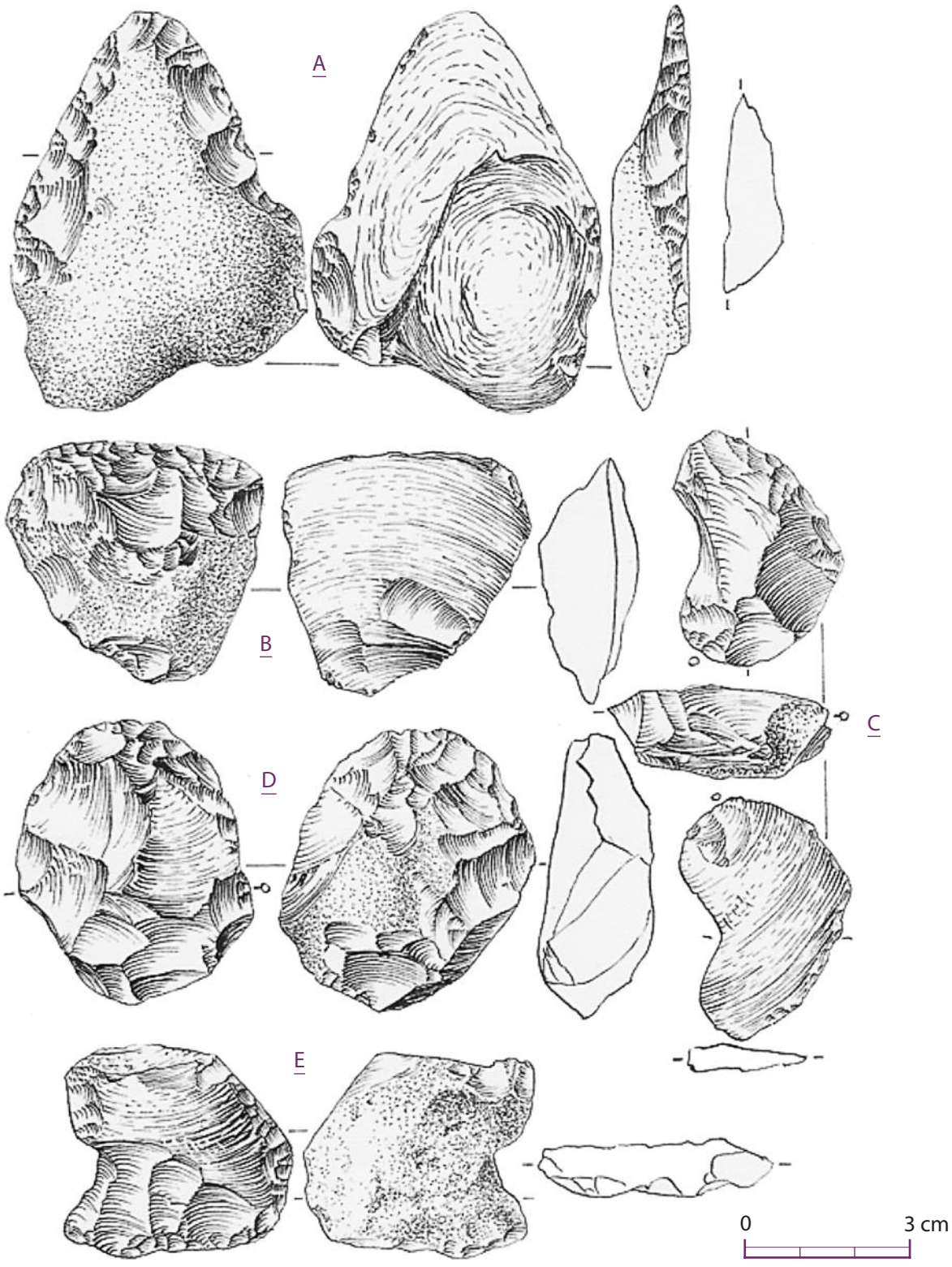


Fig. 5
Middle Palaeolithic artefacts from Oosthove–*Heieinde* (A: side scraper; B: offset scraper; C: Levallois preparation flake; D and E: discoidal cores; Van Peer & Verbeek, 1994).

various forms (Cliquet, 2001). Furthermore some sites are also characterised by a more general application of the bifacial retouch technique (e.g. *Champlost*, Burgundy, France; *Gouédo*, 1999) and *grotte du Docteur* (Meuse Valley, Belgium; Ulrix-Closset, 1975), often resulting in rather reduced tool forms, something that is also the case at Oosthoven-*Heieinde*. These last two entities contain elements that can be interpreted as a K.M.G. influence (e.g. foliate points, backed bifacial tools and asymmetric shapes).

Despite its small size and poor chronostratigraphical understanding, the assemblage of Oosthoven-*Heieinde*

fits in with this more intense use of the bifacial retouch technique in Europe during the late Middle Palaeolithic and is a good illustration of the complicated nature of biface-rich industries at this time period.

5. Conclusion

The Middle Palaeolithic site of Oosthoven-*Heieinde* is isolated both in terms of its techno-typological characteristics and its geographical location. The site, located on a sandy slope near a small river, is situated in the northern part of Belgium, close to the Dutch border, an area where not many Middle Palaeolithic sites are known at the moment. The location was once visited by Neandertals who left behind a lithic assemblage characterised by the use of Discoidal, Laminar and Levallois reduction methods and a toolkit dominated by side scrapers and small bifaces. Many of these bifaces are only partially worked and evoke links with both the M.T.A. and K.M.G. industries. Overall, because of the small size of the assemblage (107 pieces) and the lack of detailed chronostratigraphical information, any interpretation related to this site remains preliminary. Further research at Oosthoven-*Heieinde* is crucial to be able to incorporate this assemblage into the wider picture of bifacial tools reoccurring in the more recent phase of the Middle Palaeolithic (M.I.S. 5d-3) in Europe.

6. Perspectives

Oosthoven-*Heieinde* is located in the sandy dunes area of the Northen Campine which is rich in Palaeolithic sites (especially *Federmesser*) and Mesolithic locations (Meirsman *et al.*, 2008). Recently Middle Palaeolithic artefacts were also located two kilometres southeast of *Heieinde*, in the nature reserve *De Liereman*, in a similar topographical position (Meirsman *et al.*, 2008). A more systematic exploration of this sand ridge has a high potential of locating more Middle Palaeolithic artefact concentrations. Also a larger scale excavation at *Heieinde*, especially focused northeast of the current excavation area (where the gullies originated from), could provide a better understanding of the stratigraphical position of the artefacts and would provide new opportunities to date this site, which holds a crucial position to our understanding of the late Middle Palaeolithic occupation of the Western Lowlands and beyond.

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