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The Early Middle Palaeolithic Site of Kesselt - *Op de Schans* (Belgian Limburg) Excavation Campaign 2008

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Abstract

During the summer of 2008, a second excavation campaign took place at the early Middle Palaeolithic site of Kesselt - *Op de Schans* (Limburg, Belgium). Two small knapping spots, found in identical stratigraphic positions were examined. The results of this campaign support previous findings and allow the reconstruction of the ancient land surface on which four clusters of lithic artefacts were scattered. Their position within the chronostratigraphic sequence suggests an attribution to the transition MIS-9 / MIS-8.

Keywords: Prov. of Limburg (B), Kesselt - *Op de Schans*, early Middle Palaeolithic, 4 lithic concentrations, knapping floor, reduction sequences.

1. Introduction

Following the discovery of some lithic artefacts during a survey in the brickyard quarry of Kesselt - *Op de Schans*, a first excavation campaign was set up in 2007 by the Prehistoric Archaeology Unit of the Katholieke Universiteit Leuven in collaboration with the Flemish Heritage Institute (VIOE) (Van Baelen *et al*., 2007). During this campaign 3 small concentrations of flint artefacts, scattered on the same old land surface some 10 m below the present land surface, were found and investigated. Unfortunately, the excavation of the most southern cluster (ODS 2) had to be stopped prematurely due to flooding.

The investigation of this cluster was resumed in the summer of 2008, during which a second excavation campaign took place. Besides completing the information on the nature and the extension of cluster ODS 2, the 2008 campaign aimed at refining the local chronostratigraphical framework and mapping the topography of the ancient land surface in the newly exploited areas. However, during auguring in this recently exploited zone, a fourth small cluster of lithic artefacts (ODS 4) was discovered some 20 metres NE of ODS 3 and was subsequently excavated.

2. Chronostratigraphy

In order to refine the chronostratigraphic framework previously described (Meijs, 2002; Van Baelen *et al.*, 2007), a deep trench was dug along the western quarry edge, north of cluster ODS 3. At the bottom of this trench gravels belonging to one of the Meuse terraces were reached. Their elevation (*ca.* + 78 m Oostende level) supports an attribution to the Rothem-1 terrace which forms part of an outward sliding meandercurve-complex.

The stratigraphic position of the ODS 2 and ODS 4 artefacts is the same as previously described for the other two clusters (Van Baelen *et al*., 2007; fig. 1). In all four cases, artefacts are found at the contact between the so-called charcoal layer, consisting of 2-5 cm thick sediments that were redeposited on an erosion level, and an overlying 20-30 cm thick sandy loess deposit with syngenetic humus formation. While they are dispersed into the underlying deposits, their freshness, the abundant presence of very small chips, the tight clustering (25 m^2) as well as the conjoining evidence suggest that no major taphonomic disturbances have taken place. These observations also support the assertion that the stratigraphic interface mentioned above has constituted the ancient occupation level, dated on chronostratigraphic grounds to the transition MIS-9 / MIS-8. This in turn was followed by a phase of rapid loess accumulation.

The preservation and altimetry of this palaeosurface were evaluated by means of controlled augering, taking place in the newly exploited areas during the 2007 and 2008 campaigns. A 20 cm diameter drill was used and coring positions were set every 4 m along a north-south axis. A 2 m distance separated the different north-south rows, creating a triangular grid. Subsequently, the sediment was wet sifted through 2 mm meshes. Following this methodology, it should be possible to trace lithic

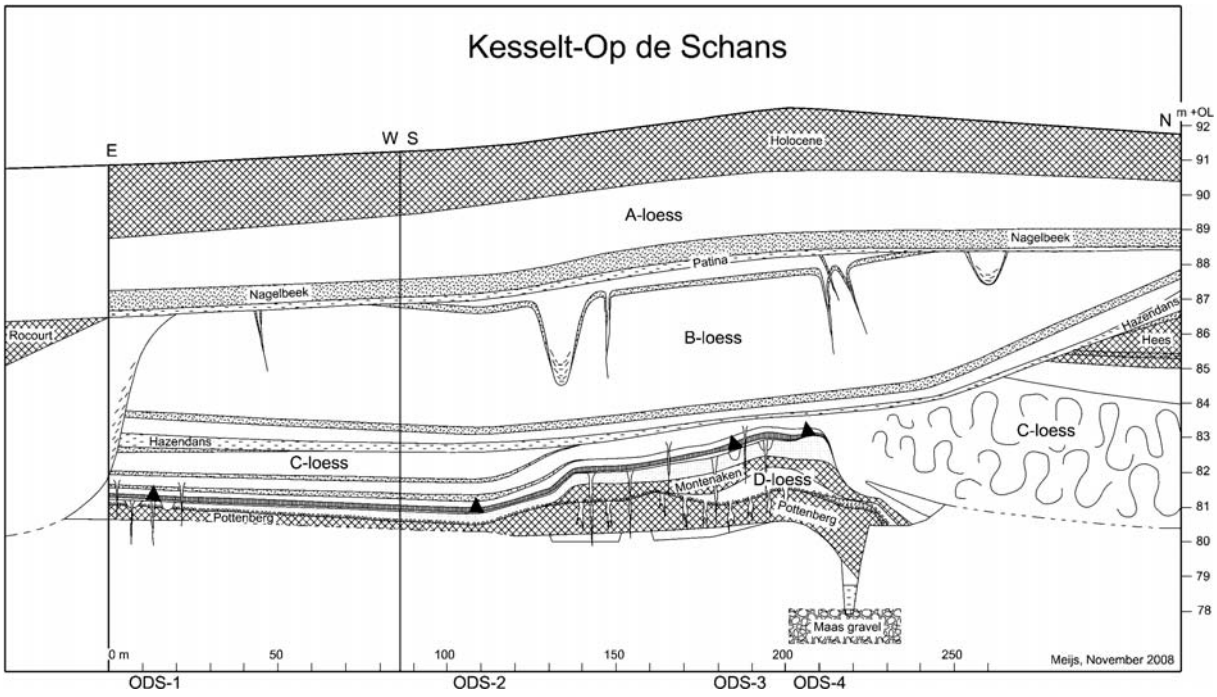

Fig. 1 — Vertical section at Kesselt - *Op de Schans*.

concentrations exceeding 4 m in diameter. As two clusters could be identified this way (ODS 3 in 2007 and ODS 4 in 2008), it proved to be a successful way to assess the presence of small concentrations of lithic artefacts.

Elevations of the occupation interface as measured in the drilled cores confirm the paleotopographic reconstructions of 2007 (fig. 2). The lithic clusters were found in the depression (ODS 1-2) as well as on top of the slope (ODS 3-4). North of ODS 4, a large gully could be observed, starting from the bottom of the C-loess and cutting through the archaeological horizon and the layers beneath.

3. The excavation of ODS 2 and ODS 4

Due to time pressure the small cluster of ODS 4 was excavated in squares of ¼ m² and spits of 10 cm until the top of the underlying Montenaken luvisol was reached. Consequently, the sediment was dry-sieved using 5 mm meshes. In total an area covering 23,25 m² was excavated, enabling the retrieval of 99 flint artefacts (fig. 3) which allowed the reconstruction of a nearly complete reduction sequence. A rounded nodule of dark grey flint showing some light grey, often coarse grained inclusions and an abraded cortex was used as raw material. Dorsal flake scars as well as conjoining evidence indicate that the nodule was reduced bidirectionally, mostly without preparation of the striking surface. As no particular attention was paid to the management of distal or lateral convexities, the large – and often invasive – flakes frequently have overpassed lateral edges. These removals, characterised by the presence of cortex on one of their lateral edges, are found throughout the reduction sequence.

At ODS 2 a total of 53,5 m² (2008: 37,5 m²) was excavated by manual shovelling in units of 1 m². Artefacts were recorded three dimensionally using a total station; the sediment was wet-sieved through meshes of 2 mm. This way, more than 730 artefacts (fig. 3) were found, most of them belonging to a raw material unit consisting of a fine grained dark grey to black flint type with light grey inclusions. When evaluating their horizontal dispersion, it is observed that most small flakes and chips are present in the centre of the concentration, while the larger pieces (cores, larger flakes, and side scrapers) are usually found around the edges. Just north of the centre of the concentration a test pit dug during loess exploitation activities caused a disturbance. Although this disturbance seemed to be rather limited, several artefacts were found in the infill, lying next to the test pit. When evaluating the whole assemblage, the homogenous character of its raw material, the large number of chips

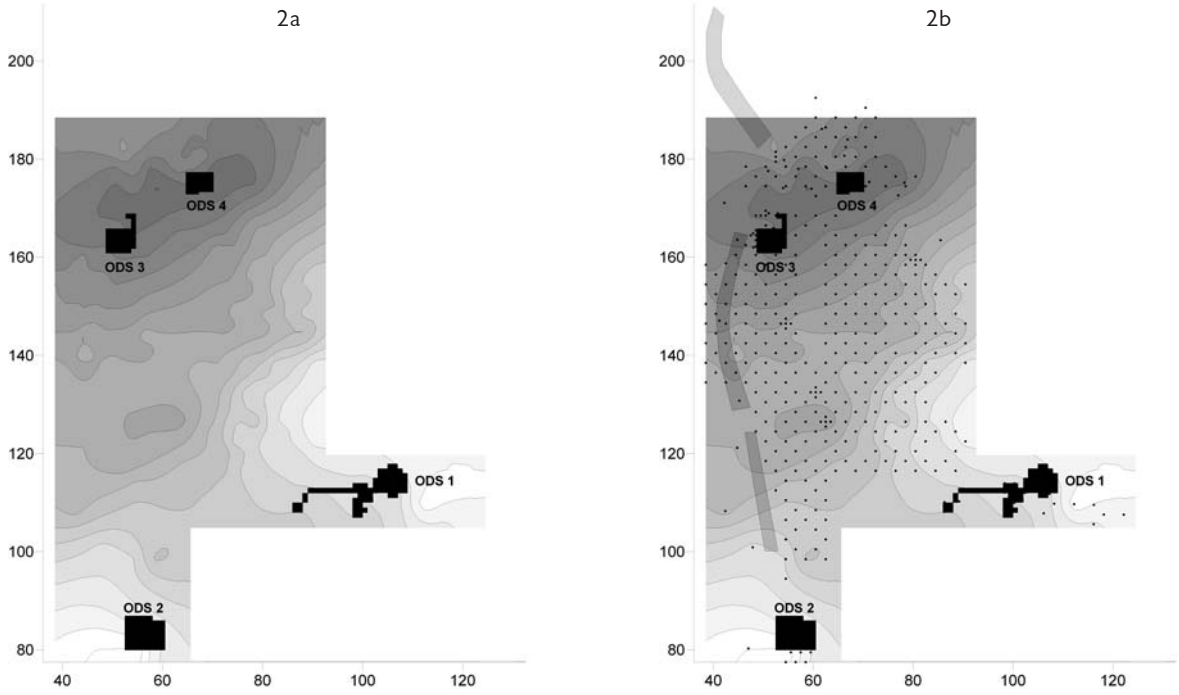

Fig. 2 — Reconstruction of the palaeotopography at Kesselt-*Op de Schans* (interval 0,15 cm) with indication of the four excavated areas (a), the coring positions and the location of the trenches from the 2007 and 2008 campaign (b).

and the conjoining data indicate a locus of on-site knapping slightly larger than ODS 4. However, alongside these data there is also evidence that certain end products such as large flakes, scrapers or Levallois flakes were introduced in the excavated area, a pattern also observed at ODS 1 and 3. Most of these products are made in raw materials differing from the prevailing raw material units (i.e. 'exotic' raw materials). Conversely, conjoining evidence also seems to suggest that some large flakes belonging to the reduction sequences have been transported outside the excavated areas as well.

4. Discussion & conclusion

Based on the features of their lithic technologies, the four ODS assemblages must be qualified as Middle Palaeolithic, even if a degree of technological variability is attested. Moreover, the discoid reduction sequences observed at ODS 1 and 2, as well as the ODS 4 sequence all contain attributes pointing to an increased control over the flaking process, previously not witnessed during the Lower Palaeolithic. At ODS 2, for example, flake production is characterised by careful preparation of the striking platform: many flakes display a crushed and / or facetted butt-edge, a few others are characterised by a *chapeau de gendarme* butt. This type of butt, normally found only later in the Middle Palaeolithic, allows the production of large yet thin flakes and seems to indicate an increase in morphological control over the end products. The ODS 4 assemblage on the other hand, seems to show some similarities with the simple prepared core technology described by White and Ashton (2003) for the lithic material from Botany Pit, Purfleet. This reduction strategy is characterised by the removal of large flakes from a core, consisting of two hierarchically organised surfaces. The flakes are detached from the upper surface; the lower surface functions as a striking platform. Contrary to the Levallois method (Van Peer, 1992; Boëda, 1994) or to the complex discoid method at ODS 2, preparation of the striking surface is minimal or absent and no distal or lateral convexities are maintained throughout the sequence. White and Ashton argue that this simple prepared core or proto-Levallois technology precedes the development of more complex and elaborated forms of prepared core technology later in the Middle Palaeolithic, thus constituting an argument in favour of an *in situ* development of prepared core technology in Northwest Europe. However, they do not exclude the existence of other parallel routes attaining the same result. Besides Purfleet, evidence from other northwest European sites dating around

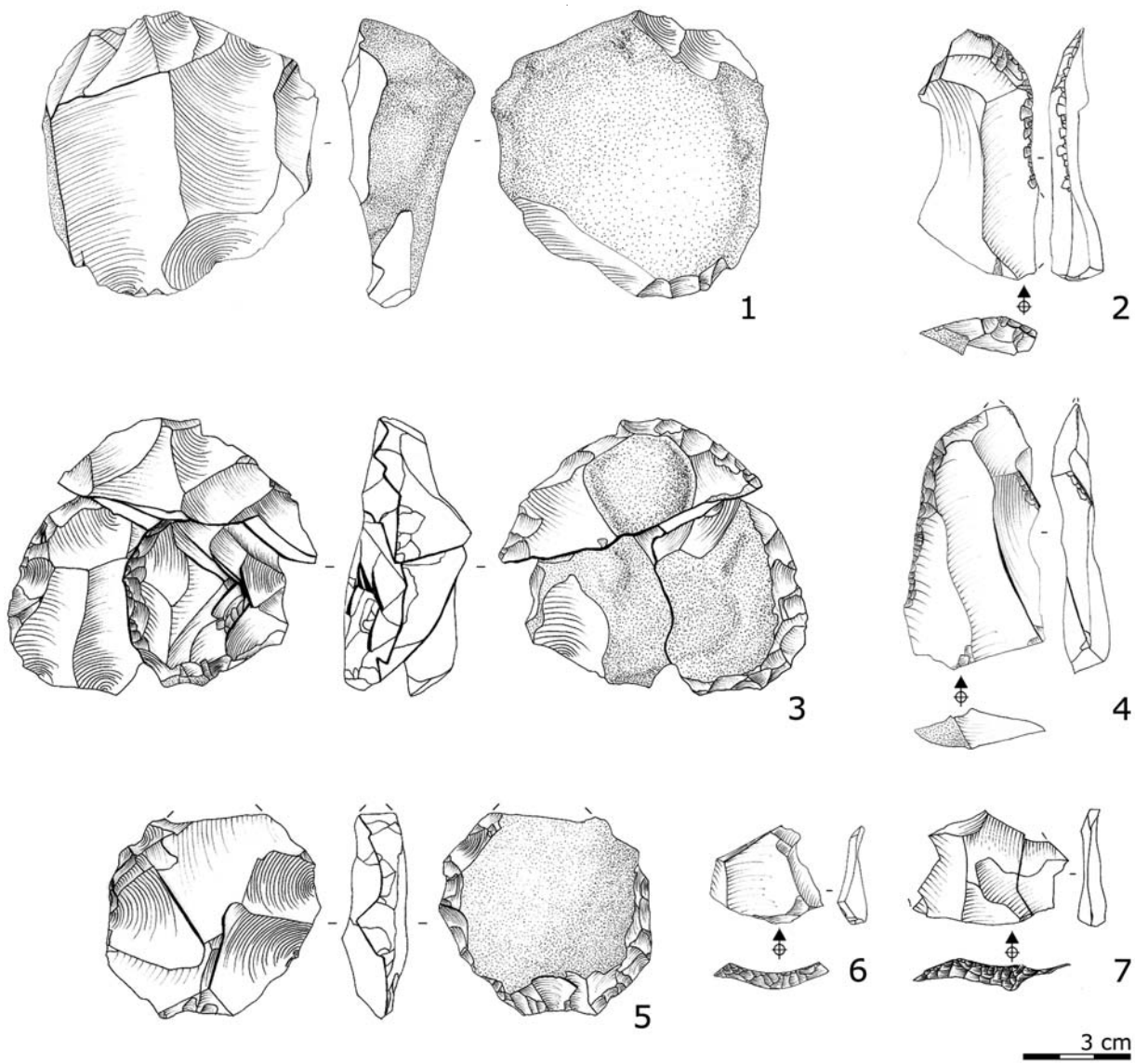

Fig. 3 — Lithic material from Kesselt - *Op de Schans* (1 : ODS 4; 2-7: ODS 2).

the period 300-250 ka BP, such as for example Markkleeberg (Baumann & Mania, 1983), Mesvin IV (Cahen & Michel, 1986; Ryssaert, 2006) and Maastricht-*Belvédère* (De Loecker, 2006; Roebroeks, 1988; Schlanger, 1996), also support this tendency towards an increased flaking control. In addition to these earliest examples of prepared core technology, the high resolution data from Kesselt - *Op de Schans* contribute to the reconstruction of cognitive and behavioural strategies employed during early Middle Palaeolithic times.

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