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The Middle Palaeolithic Valley Settlements at Veldwezelt-Hezerwater Belgian Limburg: Excavation Campaign 2000

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Introduction

The sites of Veldwezelt-Hezerwater are located in the western part of the *N.V.* Vandersanden brickyard quarry, which exploits the loess deposits of the south-east facing side of the Hezerwater Valley. The scientific research of the quarry started in 1995. From 14 July until 16 August this year, a third excavation campaign took place at the sites of Veldwezelt-Hezerwater. The results of the preliminary findings of the Excavation Campaign 2000 are outlined in the report that follows.

The excavation campaign was directed by the *Laboratorium voor Prehistorie* at the *Katholieke Universiteit Leuven* in collaboration with the *Instituut voor het Archeologisch Patrimonium (IAP)* of the *Vlaamse Gemeenschap*, the *Provinciaal Gallo-Romeins Museum* of Tongeren, the *Fonds voor Wetenschappelijk Onderzoek – Vlaanderen* and the University of Lethbridge, Canada.

This year's excavation team was made up from an international party of students. There were students from the *Katholieke Universiteit Leuven* (Belgium), from the University of Lethbridge (Canada), from the *Open Universiteit* (Belgium), from the *Universiteit Leiden* (The Netherlands) and from University College London (United Kingdom).

A. Context and Aims of the Research at Veldwezelt-Hezerwater

Saale loesses are only rarely preserved. When preserved, they are always weathered into a grey-brown forest soil stronger than the Holocene soil by colour, clay content and decalcification depth (Rocourt Soil). Above this soil there always occurs a humic horizon, rich in volcanic minerals with enstatite, in which often several layers can be distinguished (Warneton Complex). Then follows the succession of autochthonous and reworked loess deposits, rich in periglacial phenomena. All known sites are set in a very flat, mostly even slightly concave topography (Gullentops, 1998; Gullentops *et al.*, 1998).

The archaeological open air sites of Veldwezelt-Hezerwater, which are preserved from erosion only because they were situated in loess-derived sediments deposited in a concave topography, show the same stratigraphical succession as in the above mentioned description. The complex succession of sediments and palaeo-soils, which can be observed at Veldwezelt-Hezerwater, is probably due to the fact that past climates fluctuated with rapid shifts of temperature (Petit *et al.*, 1999) and precipitation.

The main aims of this year's excavation campaign focused on the study of the newly exposed profile walls and on the study of the relationship between the different artefact assemblages, which were found during the first and the second excavation campaign respectively in 1998 (Vanmontfort *et al.*, 1998) and in 1999 (Bubel *et al.*, 1999; Vanmontfort *et al.*, 1999). During the Campaign 2000 ninety m^2 were excavated. The excavation of the sites is organised using the checkerboard system, thus creating continuous profiles every two metres both north-south and east-west, which has proven essential as the sedimentological and the pedo-stratigraphical context of the artefact assemblages is very complex.

B. The Principal Elements of the Stratigraphy

This year's excavations extended along the gently sloping valley-wall of the Hezerwater. The different sections allow a profile (fig. 1 et 2) to be drawn only slightly oblique to the valley-wall and nearly at right angles to the first transverse profile (Vanmontfort *et al.*, 1998: 6, fig. 2).

The valley-side is made up of a 4 meters thick layer of Meuse gravel, which forms a terrace in which the Hezerwater Valley is incised. The base of the incision consists of fluvial deposits from this small brook. The bottom gravel is covered by stratified alluvial sands and silts. Laterally these pass into aeolian silts blown against the valley-side with sand laminae blown in from the alluvial plain. The last gravel bed of the Hezerwater demonstrates the continuing aggradation of the valley-bottom under wet periglacial conditions. Locally this is overlaid by a disordered mass of terrace gravel. It represents rock-fall from a frozen block of Meuse gravel from the nearby valley-wall. This produced shock-waves with small thrust-planes in the underlying

alluvial sands and silts. The debris was later surrounded by waterlaid aeolian silts.

A small gully (or a lateral meander cut?) produces a slope, stable enough to be fixed by an incipient soil, denoting a phase of temperate conditions. Both the VLL and the VLB horizons (Vanmontfort *et al.*, 1998: 6, fig. 2.) contain artefacts and especially the VLB horizon contains numerous charcoal pieces, identified as *Pinus silvestris*. The gully is first filled by coarse silts with discontinuous granules laminae (GSL) denoting colluvial activity, followed by a general cover of loessic silts. These silts are completely transformed by a succession of at least two orange-brown soils.

The last, VBLB, also contains artefacts and charcoal pieces, identified as *Betula sp.* Next follows a dark, humic zone, HZB, with charcoal of *Pinus silvestris* and containing the expected volcanic minerals with enstatite. At its base, a characteristic fully bleached white horizon, BHB, contains charcoal of *Pinus silvestris* and *Betula sp.* In a small depression the humic horizon can be further divided.

The succession of mature soils and humic horizons in a colluvial context, denotes a long period of temperate climates with different forest covers. It is thought to give a fairly complete image of the climatic fluctuations of the long Last Interglacial, correlating to MIS 5. The underlying sediments belong to the Saalian stage and the presence of a well developed interstadial succession allows a preliminary conclusion that more than MIS 6 may be represented.

The overlying loess or loess-derived sediments, which are in general more yellow and sometimes still calcareous, belong consequently to the Weichselian stage. In the transverse section (Vanmontfort *et al.*, 1998: 6, fig. 2) a complex stratigraphy has been established, with numerous erosional hiatuses. The new sections give considerable new detail of these erosional phases. In the lower Hesbaye Member different gully types are present: V-shaped being most typical of mild conditions; arc-shaped coinciding with soil mobility in cold conditions; while the splendid chest-shaped gully type is due to thermokarst, indicating the melting of permafrost and the end of very harsh conditions.

Together with the layered facies, all these phenomena indicate important water activity, in fact, important snow-cover. Several horizons contain remains of microfauna and abundant mollusc shells. From the final horizon (WFL) of one gully-fill, artefacts and an important number of mammalian remains have been recovered. Horse and rhinoceros are the most typical elements here. It can be concluded that the Hesbayan-climate was cold and wet but not at all life inhibiting.

As with the transverse profile, a general erosion marks continuously the base of the very characteristic Kesselt Suite covered by up to 5 meters of typical loess of the Brabant Member. The cold and dry environment of this latest stadial of the last glaciation was very inhospitable to life.

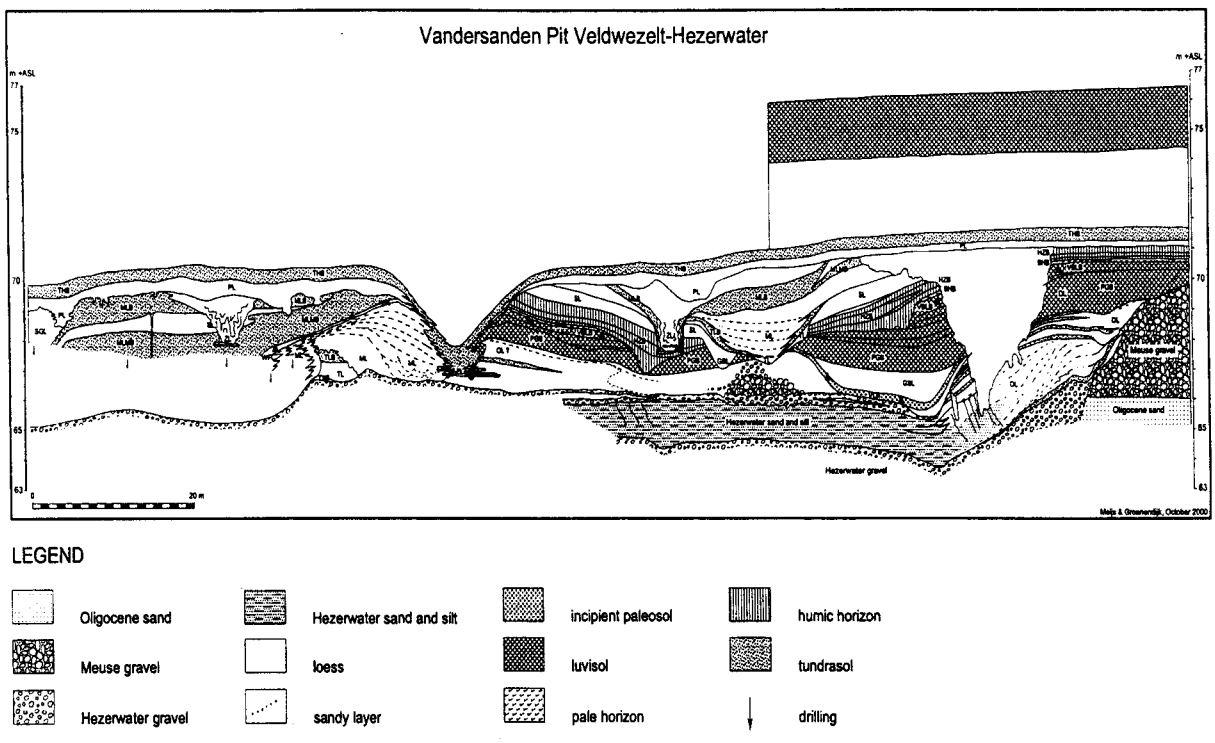

Fig. 1 – West profile of the Veldwezelt-Hezerwater Quarry.

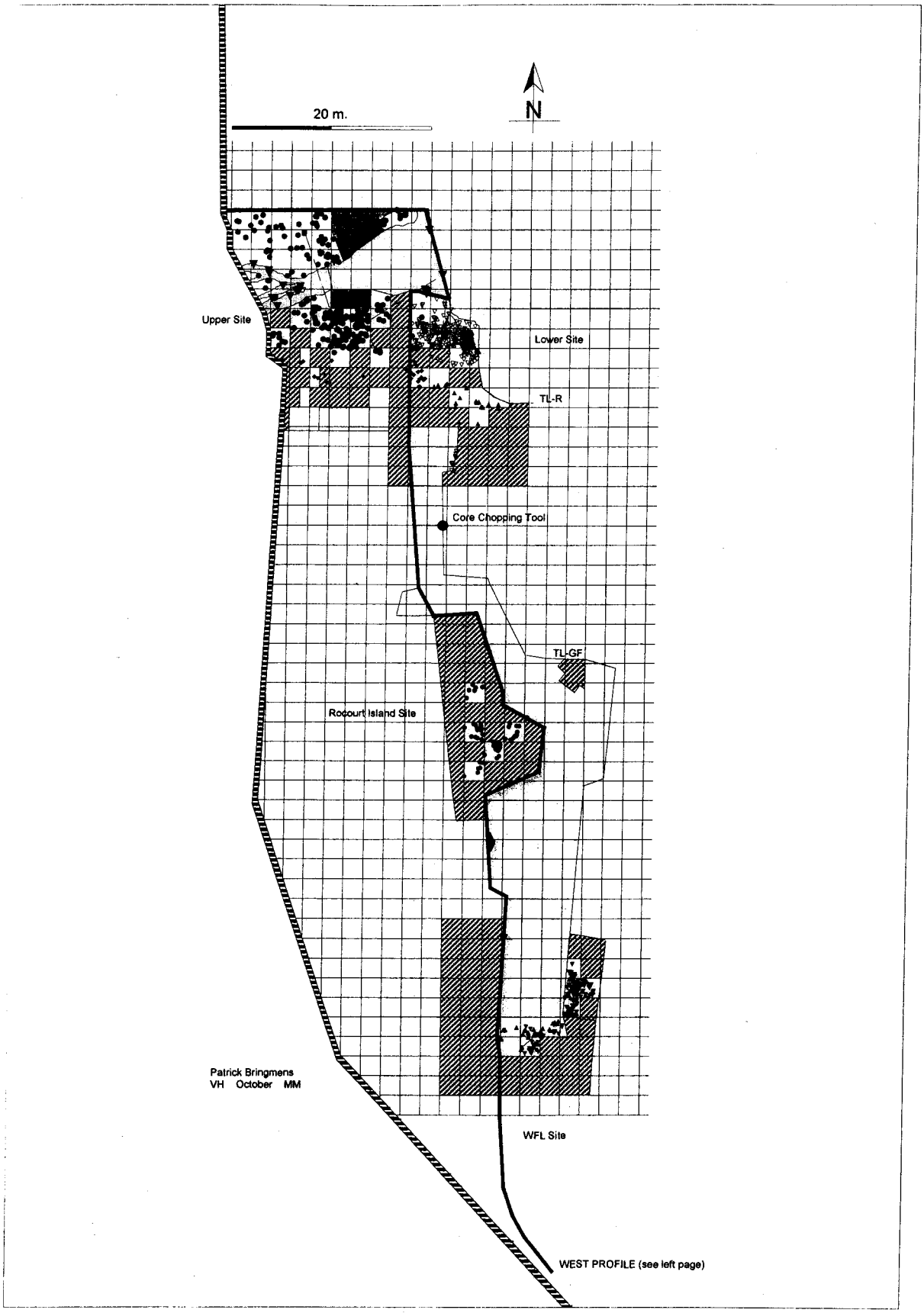

Fig. 2 – Layout of the Veldwezelt-Hezerwater Sites.

It can be concluded, that the Hezerwater sections provide the most complete evidence of complex climatic changes during the last 200,000 years, which are now accessible on the Continent.

C. The Archaeological Material

C.1. The Core-Chopping Tool

A large flint core-chopping tool weighing 2 kg

Fig. 3a – Front side of the Core-Chopping Tool from Veldwezelt-Hezerwater (drawing M. Van Meenen, I.A.P.).

was found on top of the huge pile of Meuse gravel rock-fall. As it was not included into the gravel, we presume that it was deposited on top of it. Possibly, the nodule was flaked in order to obtain an implement with a useful working edge (fig. 3a et 3b).

On stratigraphical grounds, we can say that this core-chopping tool is the oldest artefact ever found at Veldwezelt-Hezerwater, because no other artefacts

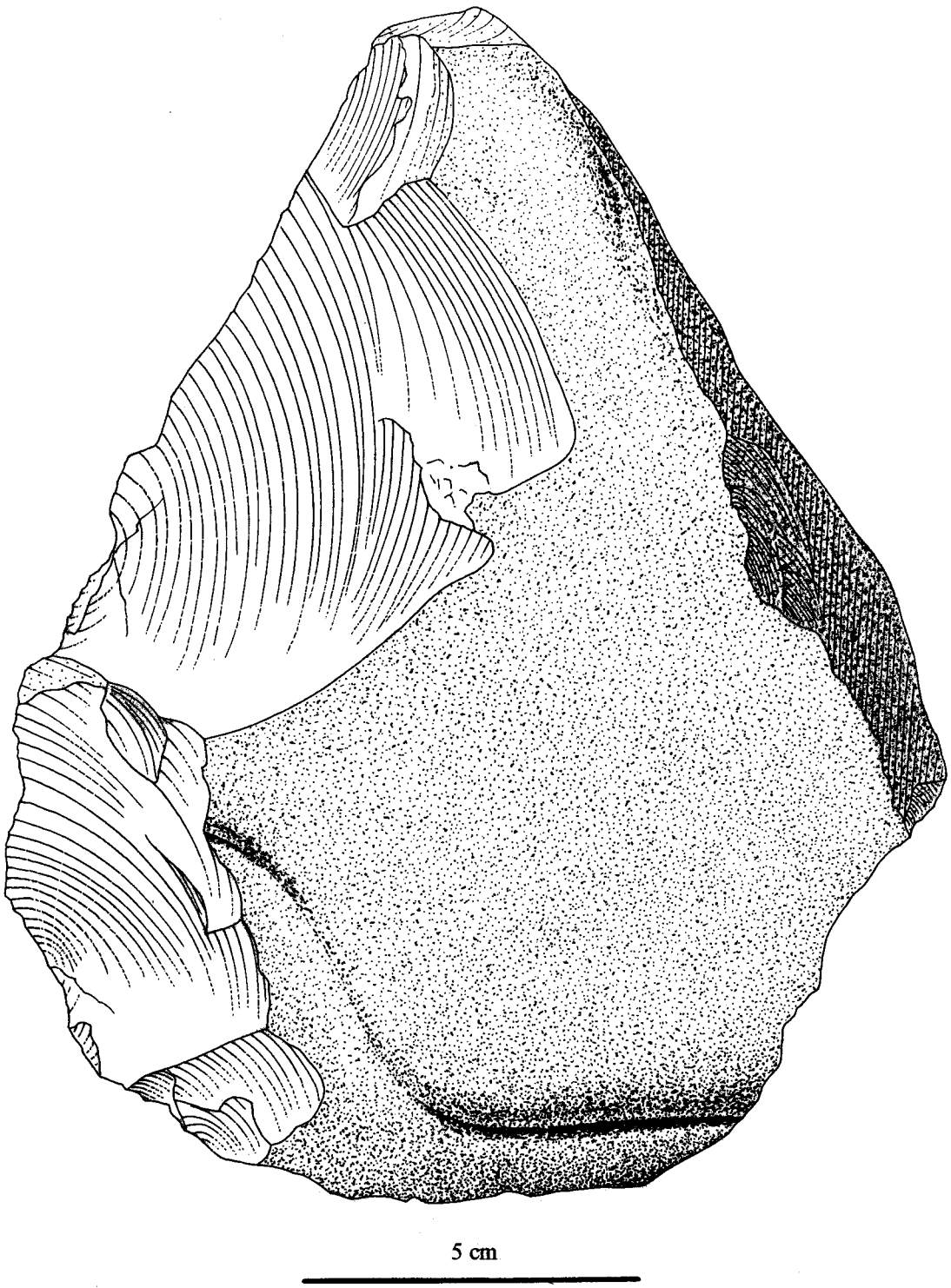

Fig. 3b – Back side of the Core-Chopping Tool from Veldwezelt-Hezerwater (drawing M. Van Meenen, I.A.P.).

have ever been recorded in this stratigraphical position. The core-chopping tool can be dated prior to the lithic assemblages of the Lower Site.

C.2. The Lower Site

The picture of the horizontal (fig. 4) and vertical artefact distribution of the Lower site is not yet very clear. This site is situated in a small gully. Some artefacts were found on top of the underlying gravel, but most of the artefacts came out of both the VLL and the VLB horizons of the incipient palaeo-soil.

The vertical artefact distribution extends over more than 50 cm. Post-depositional processes are probably responsible for this vertical distribution. It is still not sure if we are dealing here with one single or two separate occupations. However, until now no refits have been found between these two horizons. The charcoal patches were mostly present in the upper part of this palaeo-soil.

The excavation of the two soil horizons of the Lower Site on the south facing gully-side yielded about 100 artefacts. The raw material is similar to the gravel from the nearby Meuse terrace deposits. Beside several small flakes and blades, a small bipolar core for blades (fig. 5) with two carefully prepared striking platforms at both ends was found. Five cores for blades have already been excavated in this area.

Several artefacts have also been found in the profile of the north facing gully-side. The relation between the artefact assemblages from the south and north facing gully-sides is not clear yet, but will be established next year when excavating the centre of the Lower Site. In order to establish the westward artefact spread, a deep pit was dug on the Upper Site in order to reach the level of the Lower Site. At a depth of 2,5 m under the level of the Upper Site a few small blades were found, but no artefact concentration was encountered.

The small dimensions of the artefacts of the Lower Site are clearly determined by the character of the locally available raw material used for flaking. The edges of all the flaked artefacts are sharp, suggesting a restricted artefact movement. Several refits have been found, but it is still not clear if the artefacts of the two different soil horizons of the Lower Site represent one single or two separate lithic assemblages.

Until now, no archaeological connection between the Lower and the Upper Site has been established. In other words, the two levels of the Lower and the Upper Site seem to be the result of at least two separate occupations.

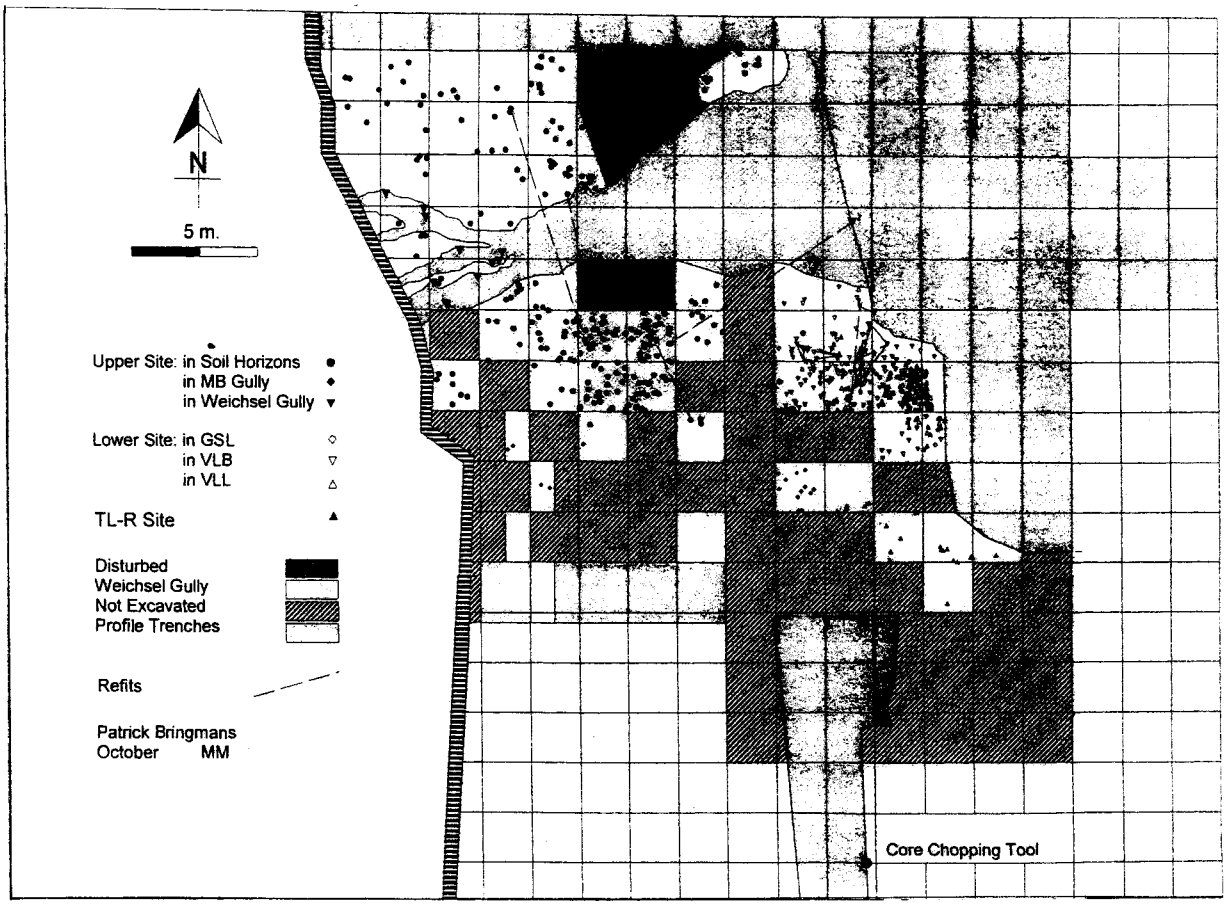

Fig. 4 – Horizontal distribution of the artefacts from the Lower, Upper and TL-R Sites.

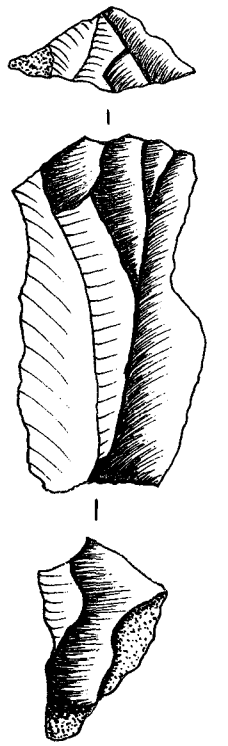

Fig. 5 – Lower Site (VLL): Small core for blades with two opposite striking platforms (drawing P. Bringmans).

C.3. *The Upper Site*

Although most of the artefacts were excavated in the VBLB-horizon, with a maximal vertical artefact distribution of less than 20 cm, a few artefacts were found in other horizons of the interglacial soil-complex. The continued study of the stratigraphy and the lithic material shows that all the artefacts excavated in the PGB, the OBHB, the RB, the RBHB, the RHZB, the VBLB, the BHB, the OHZB, the MB, the MHZB and the BHZB soil-horizons (Vanmontfort *et al.*, 1998: 6, fig. 2.) probably belong to a single occupation level. This means that post-depositional and erosional processes played a role in the creation of a vertical artefact distribution of more than 50 cm.

The boundaries of the Upper Site (fig. 4) are now becoming clear too. No artefacts were found south of 104 N and west of 94 E. The northern and the eastern boundaries will always remain problematic because of the fact that north of 122 N and east of 116 E, the interglacial soil-complex was for the greater part eroded. Another feature that blurs our image of the horizontal artefact distribution is the deep Weichselian gully that cuts through the centre of the Upper Site.

The lithic assemblage of the Upper Site is primarily characterised by the predominance of the Levallois debitage method (fig. 6). The large concentration of artefacts in the central area of the Upper Site comprises large and small Levallois flakes, debitage waste and chips, but no retouched tools. All the lithic material of this area belongs to the same raw material unit and all long-distance refits are connected with this sector. This is probably a spot were prehistoric man produced his blank Levallois flakes. The majority of all the artefacts excavated on the Upper Site can be assigned to at least seven different Levallois reduction sequences.

The essence of the Levallois techniques used on the Upper Site of Veldwezelt-Hezerwater is that the outer covering of irregular cortex or skin of the flint nodule was removed. Then a continuous striking platform was prepared around the perimeter of the selected nodule. The systematic shaping of the upper surface of the core was produced by successive centripetal blows delivered from various points around the perimeter of this prepared striking platform. Then Levallois flakes were produced according to the Preferential Method or the Recurrent Unidirectional and Bidirectional Method (Boëda, 1995).

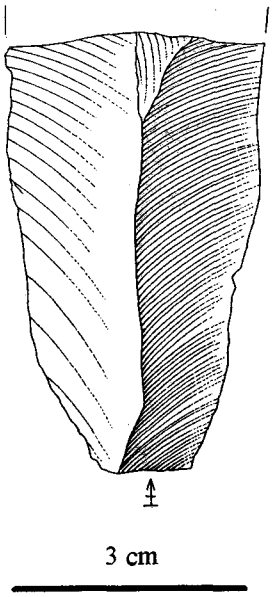

Fig. 6 – Upper Site (WG): Broken Levallois blade. (drawing M. Van Meenen, I.A.P.).

C.4. *The Rocourt Island Site*

The pedo-stratigraphical situation on this site is more or less comparable with the situation on the Upper Site. But the vertical artefact distribution, from the overlying bleached horizon just under the humic horizons, down to the top of the PGB, amounts to more than 75 cm. Most of the larger artefacts were excavated in the upper part of the profile. The horizontal artefact distribution

grained chert. The lithic material is made up of one irregular core, one Levallois core (fig. 11:3) flaked according to the Preferential Method (Boëda, 1995) and one small Levallois core (fig. 11:1) flaked according to the Recurrent Bidirectional Method, Boëda 1995).

On this last core, a small broken blade found last year could be refitted. Several cortical flakes, ordinary flakes and one big Levallois flake with a faceted butt (fig. 11:2) have also been excavated.

The faunal assemblage of the WFL Site com-

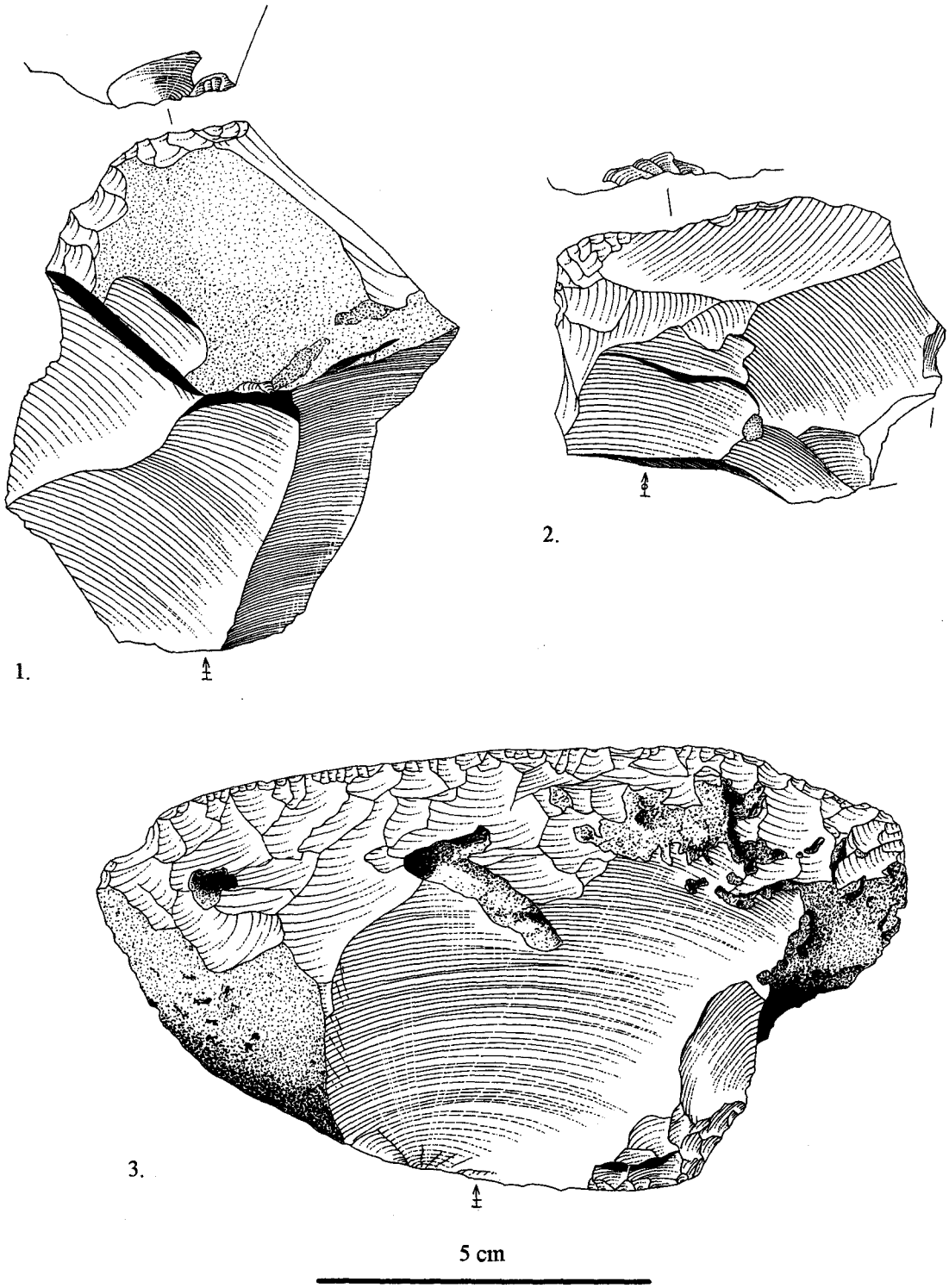

Fig. 9 – TL-GF Site: 1-2. Retouched flakes; 3. Quina transverse side scraper (drawings M. Van Meenen, I.A.P.).

prises microfauna and many animal bones and teeth. The aeolian sediments of the WFL Site contain a significant calcareous component and this makes good bone preservation possible.

Although the faunal remains still have to be analysed in detail, we now believe that on preliminary assessments; horse, woolly rhinoceros and mammoth make up most of the faunal assemblage. The question remains whether the animal bones and the lithic material are contemporaneous. The preservation of the faunal material is not such that evidence of human butchering activities can be determined from the bones at present.

Conclusions

The Veldwezelt-Hezerwater Excavation Campaign 2000 has once more disclosed important remains of at least four different Middle Palaeolithic valley settlements. It is amazing to realise that humans were living and producing their tools, at this spot in the Hezerwater Valley, at different times during the Saalian, the Last Interglacial and the Weichselian.

The floral and faunal remains suggest that the climate was temperate or even cool. The south-east facing valley-side of the Hezerwater held vital resources that attracted prehistoric man to this spot. It goes without saying that further research in the field and in the laboratory will have to corroborate these preliminary findings.

Acknowledgements

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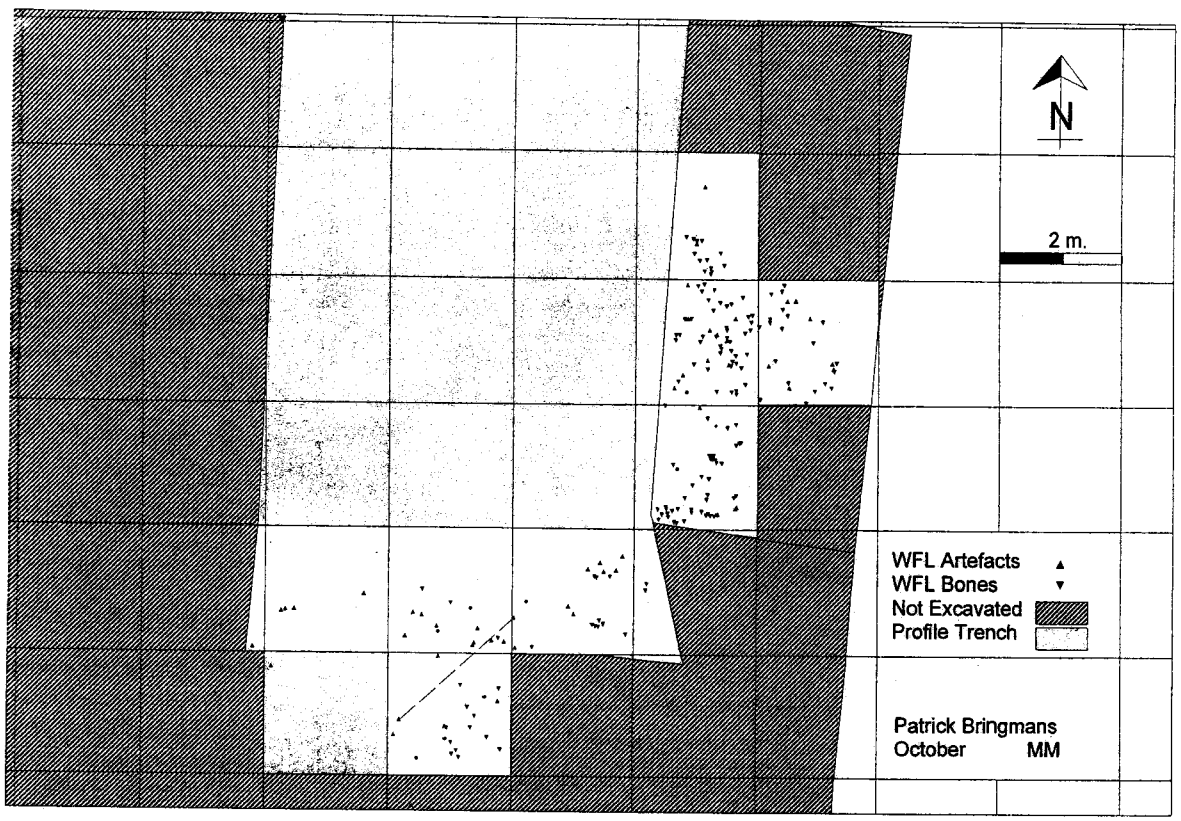

Fig. 10 – Horizontal distribution of the artefacts and the bones from the WFL Site.

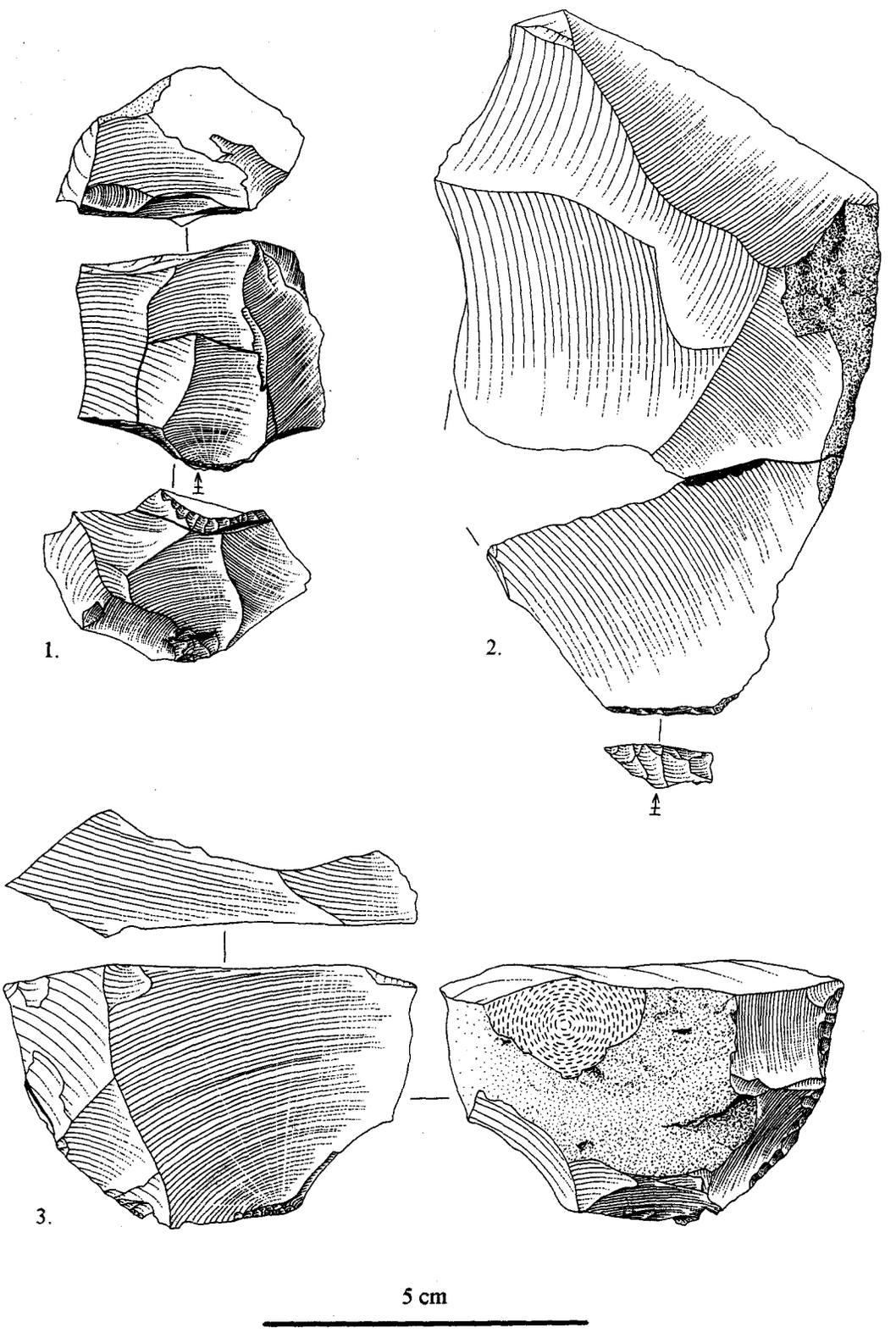

Fig. 11 – WFL Site: 1. Small bipolar recurrent Levallois core with a small refitted broken blade; 2. Levallois flake with a faceted butt; 3. Unipolar lineal Levallois core (drawings M. Van Meenen, I.A.P.)

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