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Orp-East : indications for a dwelling

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Résumé

Pour la concentration d'objets lithiques d'Orp-East, la présence d'une habitation peut être démontrée par la combinaison de différents indices. La concentration correspond à une zone centrale très dense, mais son étendue entière représente une densité de trouvailles plus élevée que des zones environnantes. La quantité des objets lithiques diminue rapidement en périphérie. À certaines places, le nombre des artefacts augmente directement à l'intérieur de la frontière, liée à une baisse claire du nombre des artefacts au dehors. La distribution des objets de taille supérieure et des lignes de raccord entre les remontages se rapportent à la périphérie de l'étendue lithique. Un nombre considérable de pièces brûlées de grès se trouve en dehors de ces confins. Ces signes qui trahissent une ancienne barrière effective entre les répartitions indiquent l'existence d'une structure d'habitat.

Mots-clés : Paléolithique supérieur, Magdalénien, structure de campement, structure d'habitat, répartition de la densité des artefacts, lignes contours de la densité, remontages des artefacts.

Abstract

At the Magdalenian find concentration of Orp-East a combination of different methods of spatial analysis reveals indications for a former separation of the main accumulation of finds from the surrounding area. The find scatter has a very dense central area, but its whole area has a higher find density than its surroundings. There is a marked sudden decrease of find density at its edges. In places the number of finds rises directly inside the border of the concentration of artefacts, connected with a clear drop of the find numbers outside. The distribution of larger objects and the refitting lines between artefacts respect the edges of the find scatter. A considerable number of burnt sandstone slabs is just found outside of it. These indications for a formerly effective limitation of the find concentration is interpreted as showing the former presence of a dwelling structure.

Keywords: Upper Palaeolithic, Magdalenian, settlement structures, dwellings, mapping of artefact density, density contour lines, refits of artefacts.

1. Introduction

The Magdalenian site of Orp (commune of Orp-Jauche; Brabant) is situated 35 km SE of Leuven on a loess covered plateau, north of the Ruissau de Jauche, a small tributary of the Petite Gete river. The site was excavated in 1979 by the Laboratorium voor Prehistorie of the Katholieke Universiteit Leuven in collaboration with the "Service National des Fouilles" and the municipal administration of Orp-Jauche. Two find concentrations were discovered less than 4 m distant from each other, of which only Orp-East will be discussed here. The excavation results have been published in detail by P. M. Vermeersch *et al.* (1984; 1987).

While some artefacts occurred in the plough horizon, the vast majority of the archaeological material of both concentrations was situated in the B2 horizon of the soil. Both concentrations were affected by gelivation, but refitting of frost-cracked artefacts (nearly

300 pieces of the eastern concentration) by the excavators indicated that displacement only occurred over small distances (Vermeersch *et al.*, 1984, 197).

In both concentrations blades were struck from large carefully-prepared blade cores, they often have striking platforms "en éperon". There are a lot of well-made bladelets from specialised cores. The inventory of tools is characterised by a great number of burins (among them many Lacan burins), numerous blade end-scrapers and quite few truncations, becs, borers and backed bladelets (Vermeersch *et al.*, 1987: 44). The similarity of the artefact inventory of the Orp sites to that of the U5 unit of Étioilles has been noted, and a possible contemporaneity has been proposed (Vermeersch & Maes, 1996) - the two TL-dates on heated flint of Orp-West (13.3 ± 1.1 ka) and Orp-East (12.2 ± 0.8 ka) and the ^{14}C dates obtained for archaeological level N20 of Étioilles (with U5 / P15) (Rodriguez & Roblin-Jouve, 2004: 29) are not in contradiction to this assumption.

2. Limits of the find concentration

The most prominent feature of Orp-East is the very dense U-shaped concentration of finds in its

centre (fig. 1). This central part contains not only a vast mass of flint debitage, but also many sandstone slabs, most of which are burned, and some thermally altered flint artefacts. P. M. Vermeersch *et al.* (1984;

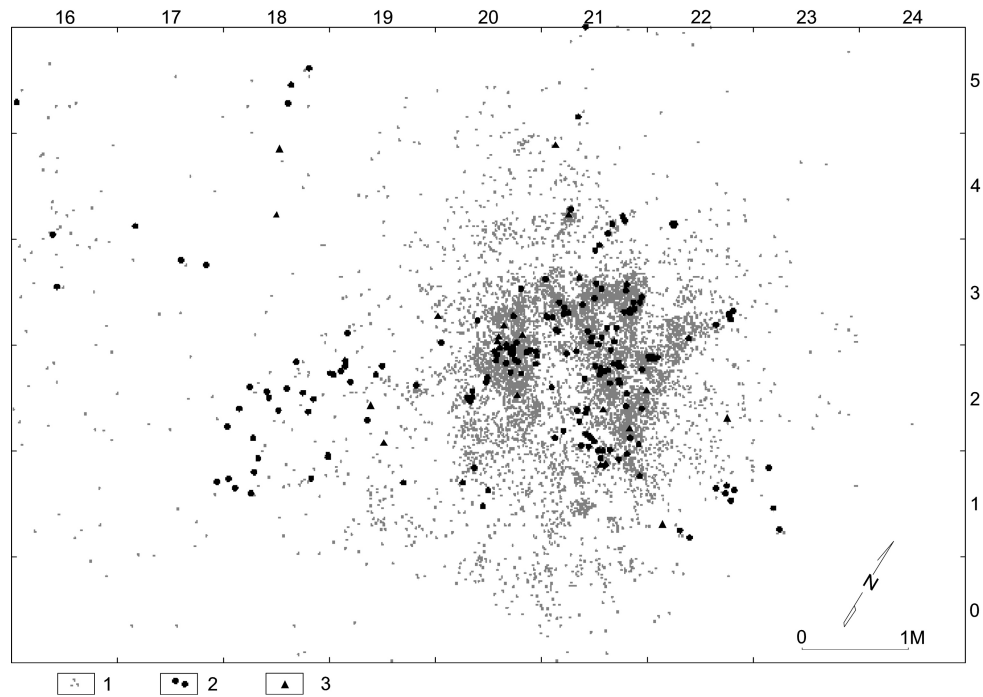


Fig. 1 — Orp-East. Horizontal distribution of all finds recorded individually. 1: artefacts; 2: sandstone slabs; 3: pieces of quartzite.

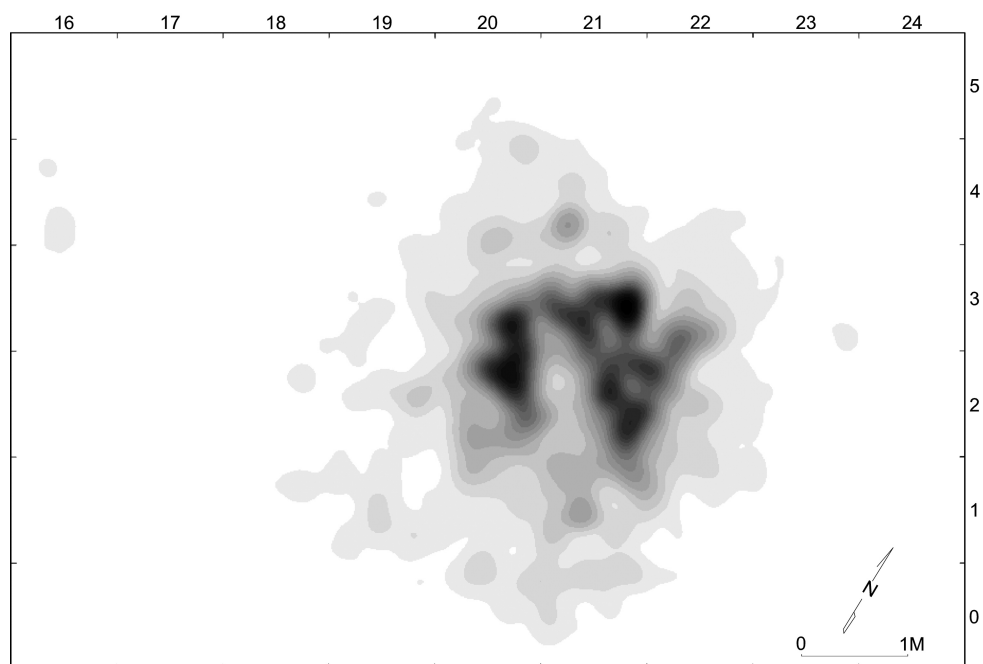


Fig. 2 — Orp-East. Density map of all artefacts recorded in three dimensions, displayed using Nearest Neighbor for discrete data (search radius 25 cm; classified by natural breaks; 20 classes).

1987) distinguished two accumulations of burned material, one within each wing of the central area. These accumulations of burned finds were interpreted as two separate hearths. The dense central part of the find concentration shows two narrow zones, which are poor in artefacts, and these were interpreted to be indicative of a tent wall (Vermeersch *et al.*, 1984: 197, fig. 5). The main part of the dwelling was sought to be in the find-poor area east of the northeastern of the two fire places, hearth B, which was in accordance to the model of A. Leroi-Gourhan (Leroi-Gourhan & Brézillon, 1972: fig. 174; Leroi-Gourhan, 1984). This interpretation was questioned by D. Stapert (1989: 13), who tested it with his ring & sector method. He chose the southwestern hearth, hearth A, as centre for measuring the ring distribution of Orp-East, which never had been proposed to have been situated in a tent. Neither of the two hearths fulfill the important requirement of his method to be a central hearth within a dwelling.

The well preserved hearth of the evident dwelling of Le Closeau, *locus 46*, which belongs to an early phase of the Final Palaeolithic (*bipointe* phase), inspires a new look on the hearth of Orp-East. In Le Closeau, *locus 46* the hearth is within an extended working zone, which is nothing more than a mass of artefacts and bones, which are mixed with some burned material from the hearth. The actual hearth in the middle of the debris has only few finds (Bignon, 1998: fig. 3). The central area of Orp-East is apparently a similar structure, and the relatively find-poor area in its centre may be regarded as the place of the hearth. A well preserved and documented hearth of this type of Mesolithic age is known from Duvensee W 13 (Bokelmann, Averdiek & Willkomm, 1985) and a less well preserved and excavated example is from Hartmannsdorf 26 (Wenzel, 2002). The

relatively find-poor centre of the hearth of Orp-East is encircled by many tools and cores (fig. 6). The area of hearth B of Vermeersch *et al.* is in a similar way surrounded by pieces of burnt flint (Vermeersch *et al.*, 1987: fig. 31) and is relatively find-poor (fig. 2). In regard of this similar features there may have been indeed a second, smaller fire place just about a half metre NE of the big hearth and there may have been a “central complex of fire places” as in *Kil* of Gönnersdorf (Sensburg, 2004: 71, fig. 32). The hearth around 21E-3N yet seems to have been the dominant installation.

Outside its central part with hearth and working zone, Orp-East still appears to be a compact find concentration (fig. 1). The number of flint artefacts which have been recorded individually drop at most parts of its margins from twenty and more per 1/4 m² to less than ten (fig. 3A). The isopachs of find density (fig. 4) reflect this situation: they follow each other with short distance. On the east side of the concentration, where the distance between isopachs is not as small, there is a gap between the outermost find density line and the other isopachs, which follow each other in a more regular manner. This too seems to indicate a marked decrease in find density. Recording the number of artefacts per 1/4 m² in transects shows the drop in the number of artefacts from a low level to an even lower niveau at the western border of the concentration (fig. 5A). But there are also small peaks of increasing and falling artefact numbers at its southern border (fig. 5B), being indicative of a former obstacle where the artefacts gathered. The compact distribution of the stone artefacts is also revealed by a density map of all artefacts recorded in three dimensions which was displayed using Nearest Neighbor for discrete data (fig. 2). This method of mapping has the advantage

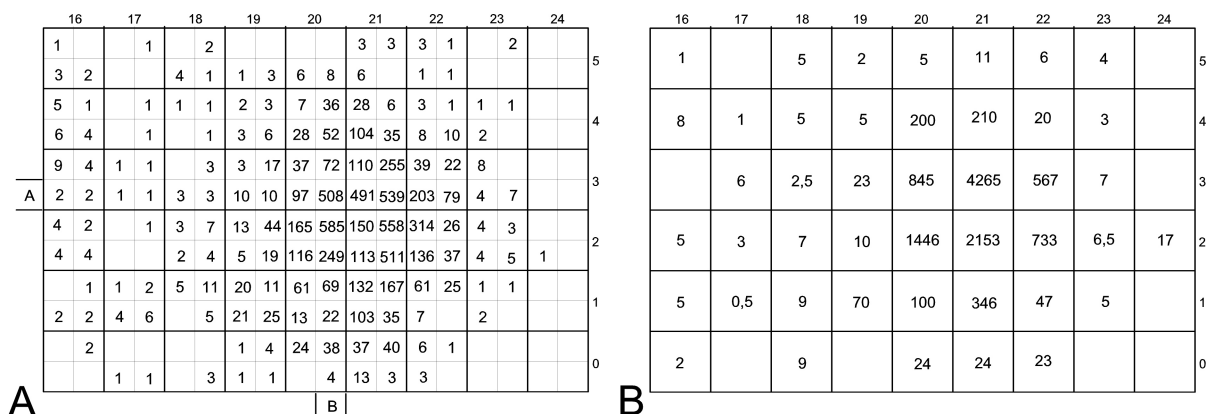


Fig. 3 – Orp-East. A: number of all flint individually recorded artefacts per 1/4 m²; B: weight of flint chips per 1 m² (g) (Vermeersch *et al.*, 1987, fig. 7; raw data for a section of the map).

of not blurring the structures by assigning the numbers of artefacts to the centre of grid cells. Therefore it shows clearly the zones where the artefact density increases towards the border in the south-western part of the find concentration.

Tools and cores are abundant in the central part of the find concentration, but a considerable number of these artefacts is to be found at its edge (fig. 6). These areas rich in larger objects are separated by a zone with a lower density of this kind of finds.

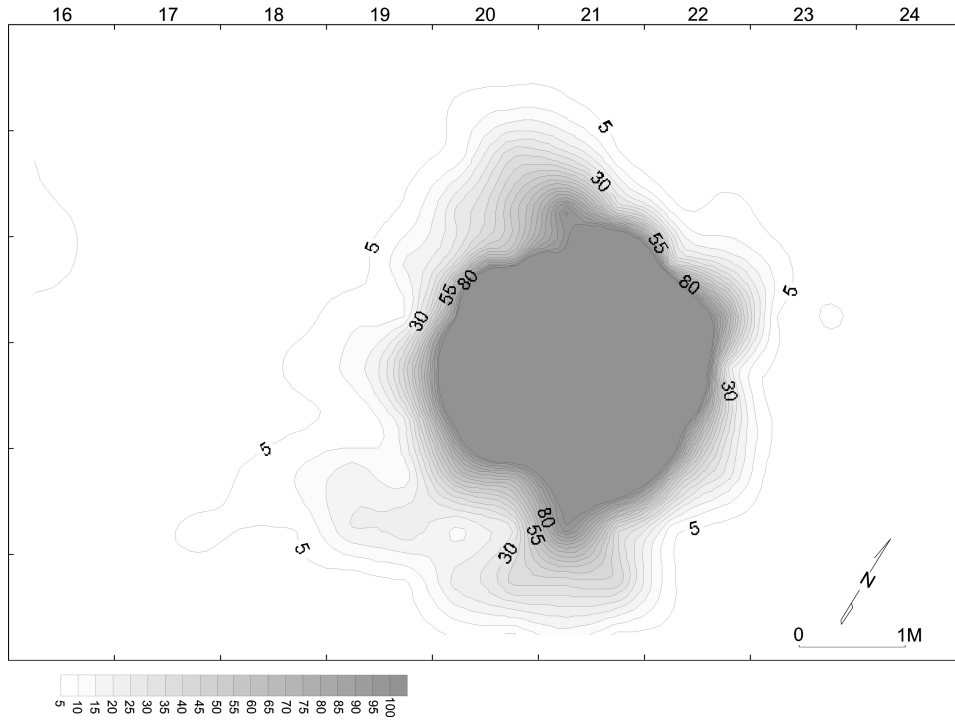


Fig. 4 – Orp-East. Isopachs of all individually recorded artefacts mapped in equidistant groups with Surfer gridded by Kriging. All groups with more than 100 artefacts were united and a small distance was chosen in order to evaluate the periphery of the concentration.

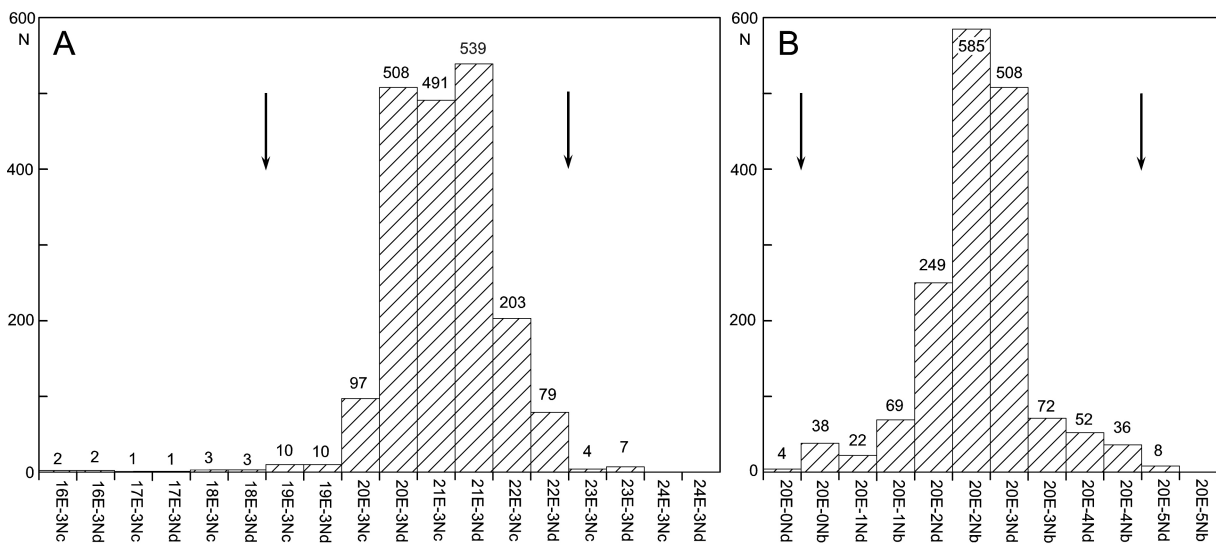


Fig. 5 – Orp-East. Number of artefacts and burnt flints per 1/4 m² in transects. For the location of the transects see fig. 3A. The arrows indicate the presumed position of the tent wall.

Only a few tools and cores are to be found outside the find concentration. Delimitation in the sense of the barrier effect of D. Stapert (1989: 12) must have been effective. The borders of the find concentration are also accentuated by several refit lines ending there or running closely parallel to them (fig. 7).

The find density, the distribution of larger objects at the border and the refit lines stressing this border define a zone which was formerly limited to this space and thus suggest a dwelling. It had a hexagonal ground plan of 4,5 m length and maximally 3,8 m breadth (fig. 8). Its longitudinal axis is orientated NNW - SSE. As a barrier effect seems to be especially evident in the SSE part of the find concentration, one may assume an entrance there (Stapert, 1989: 20), which would have been directed towards the Ruissau de Jauche but is not proven by refittings.

3. The inner structure of the find concentration

The excavators already have noticed that certain classes of artefacts differ in respect of their distribution within the find concentration (Vermeersch *et al.*, 1987: 50). The backed bladelets have their main point in square 20E-3N, in the NW corner of the central working zone, while the majority of the

scrapers (and also of the laterally retouched pieces) is to be found SE of the small cluster of backed bladelets. Cores and debitage are abundant. Flint knapping seems to have been a major activity, which was also the case in Étioilles, W11 (Julien *et al.*, 1988). The cores are not only confined to the central working zone, but there is also a considerable number of them in the NNW half of the supposed tent. Pieces of burnt flint are nearly restricted to the central zone of activity, while many burnt sandstone slabs have been deposited outside the inhabited space. The central working area of Orp-East is very strictly confined, as it is the case with Andernach-3 (Gelhausen, Kessler & Wenzel, 2004). Tents known from recent times suggest that big logs may have enclosed the central working area in order to prevent a distribution of the debris accumulated there (Faegre, 1979: 144; Grøn, Kutsnetsow & Klokkernes, 2003: 19).

4. Results

At Orp-East the actual find concentration has a hexagonal shape of 4,5 m length and a maximum width of about 3,8 m. Arguments for the interpretation of this structure as a dwelling structure come from the density of finds, the distribution of

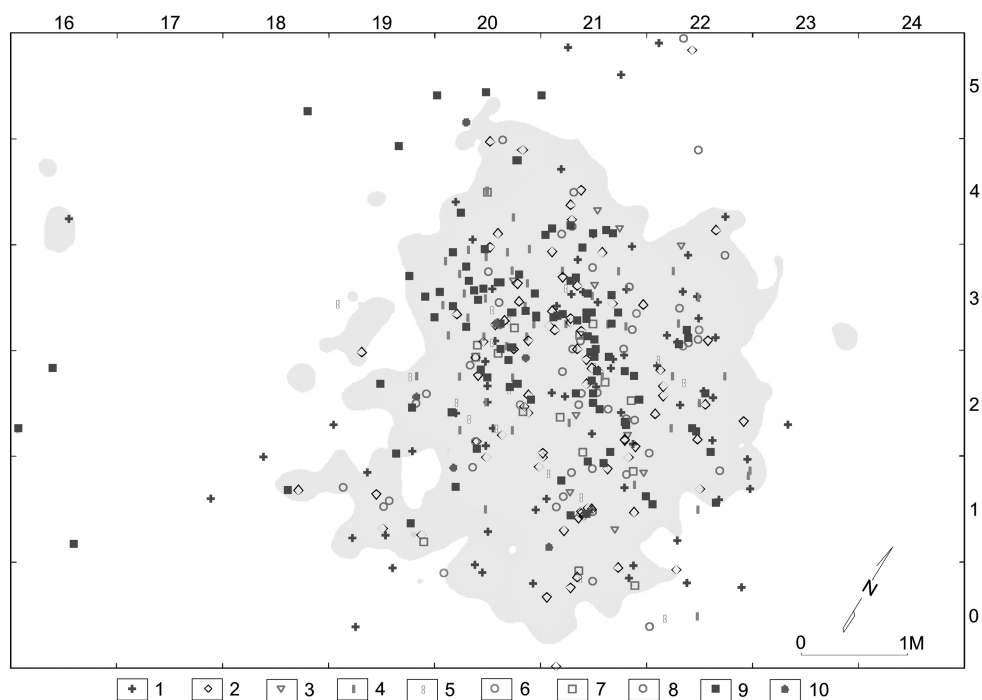


Fig. 6 — Orp-East. Horizontal distribution of tools. 1: scrapers; 2: burins; 3: becs / borer; 4: backed bladelets; 5: notched pieces; 6: composite tools; 7: truncated pieces; 8: laterally retouched pieces; 9: cores; 10: hammer stones. Underlaid is the density map of fig. 2. The position of these artefacts was taken from Vermeersch *et al.* (1987, fig. 34), except for burins and cores.

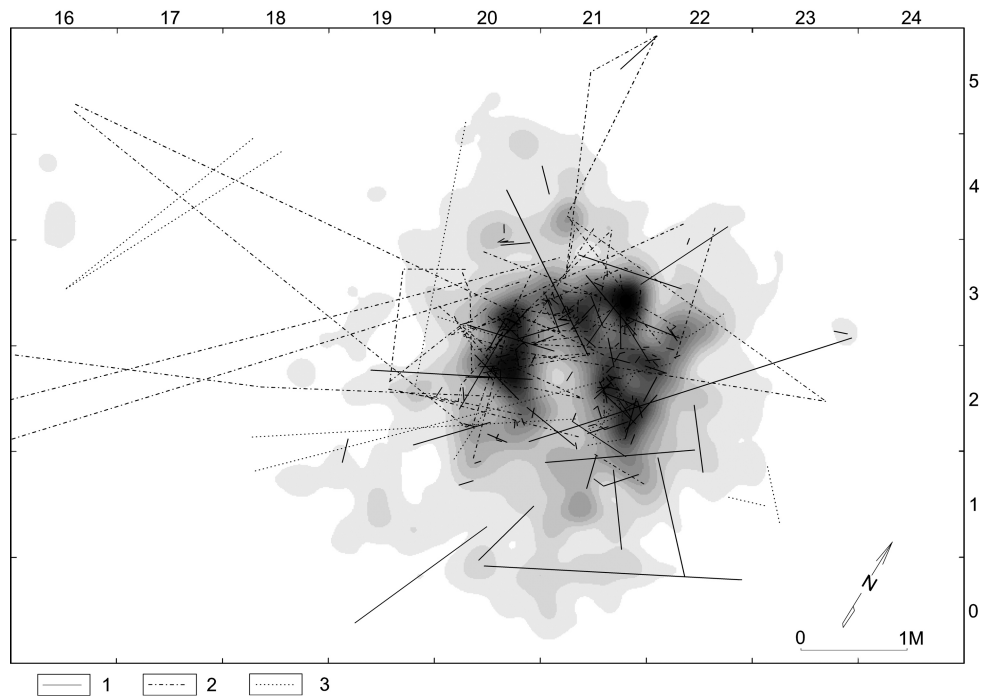


Fig. 7 — Orp-East. Horizontal distribution of refit lines. 1: broken artefacts; 2: flaking sequences; 3: refits between burned flints and sandstones. Underlaid is the density map of fig. 2.
Refits combined and slightly modified after Vermeersch *et al.*, 1987: figs. 31-33.

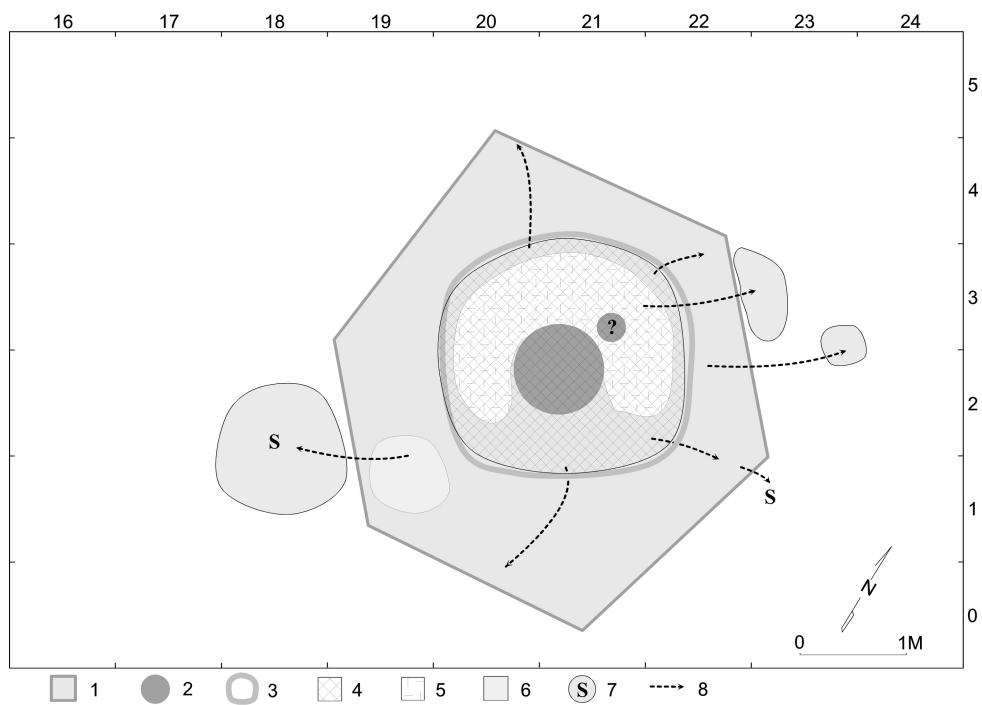


Fig. 8 – Interpretation of Orp-East. 1: idealized ground plan of the tent, 2: fire places, 3: find-rich zones around the central fire place, 4: zone of activity around the fire place, 5: backward toss zone, 6: areas from which material has been cleared out, 7: accumulations of stones / artefacts, 8: supposed direction of clearing activities.

larger objects at the edges of this find scatter and the refit lines which define a zone formerly limited to this space. The dwelling feature has a central hearth with an extended working zone, which was possibly accompanied by a nearby smaller fire place to its NE. The zone of activity around the central hearth is very find-rich and strictly delimited. The reconstructed dwelling of Orp-East is slightly smaller than many evident and latent dwellings of the Magdalenian and the Federmessergruppen (Jöris & Terberger, 2001; De Bie & Caspar, 2000; Gelhausen, Kegler & Wenzel, 2004; Grimm, 2004). It shares with these dwelling features the clearly defined area with a high density of finds around the hearth and the partition in zones of activity as defined by the distribution of tools.

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