



**Universiteit
Leiden**

The Netherlands

Analecta Praehistorica Leidensia 42 / Eyserheide : a Magdalenian open-air site in the loess area of the Netherlands and its archaeological context

Rensink, Eelco; Bakels, Corrie; Kamermans, Hans

Citation

Rensink, E. (2010). Analecta Praehistorica Leidensia 42 / Eyserheide : a Magdalenian open-air site in the loess area of the Netherlands and its archaeological context, 276. Retrieved from <https://hdl.handle.net/1887/32956>

Version: Not Applicable (or Unknown)
License: [Leiden University Non-exclusive license](#)
Downloaded from: <https://hdl.handle.net/1887/32956>

Note: To cite this publication please use the final published version (if applicable).

ANALECTA
PRAEHISTORICA
LEIDENSIA 42

PUBLICATION OF THE FACULTY OF ARCHAEOLOGY
LEIDEN UNIVERSITY

EELCO RENSINK

EYSERHEIDE

A MAGDALENIAN OPEN-AIR SITE IN THE LOESS AREA OF
THE NETHERLANDS AND ITS ARCHAEOLOGICAL CONTEXT



LEIDEN UNIVERSITY 2010

Series editors: Corrie Bakels / Hans Kamermans

Editor of illustrations: Joanne Porck

Translation: Kelly Fennema

Copyright 2011 by the Faculty of Archaeology, Leiden

ISSN 0169-7447

ISBN 978-90-818109-0-6

Subscriptions to the series *Analecta Praehistorica Leidensia*
and single volumes can be ordered exclusively at:

P.J.R. Modderman Stichting
Faculty of Archaeology
P.O. Box 9515
NL-2300 RA Leiden
The Netherlands

This publication was made possible with a grant from Cultural Heritage Agency, Amersfoort

Magdalenian sites are as yet a rare phenomenon in the hills of the Meuse-Rhine loess area. In this area of over 10,000 km², we are dealing with six excavated sites and a few surface complexes, while a small number of sites is known from the Pleistocene sandy soils north of the area with loess deposits. If only from the perspective of rarity, they deserve our full attention in the future during surface surveys and the inspection of loess profiles which are the result of non-archaeological digging. But also when making an inventory of often extensive collections of amateur archaeologists, close attention is required. They form a rare and valuable source of information on the earliest human occupation of the Meuse-Rhine loess area after the Glacial Maximum of the Weichsel ice age. The constant erosion of the loess landscape will in the decades to come lead to 'new' sites coming to the surface and into the sight of (amateur) archaeologists. Looking at the position in the landscape of the known sites, new discoveries can be expected on or at the edge of loess-covered plateaus, above a (former) stream valley and at 'the entrance' to a small dry valley. The chance of finds actually coming to the surface depends on the thickness of the covering loess layer and thus the depth of the archaeological layer in relation to the present-day surface. But also modern land use plays an important role. For discovering surface finds, an important condition is that fields are ploughed and well washed by rain, as is shown by the discovery of the sites of Orp-le-Grand, Mesch, Eysersheide, Sweikhuizen-GP and -KW, Beeck, Kamphausen and Galgenberg. In landscape zones where the loess layer is still (largely) intact or where there is other land use (pasture land, forest), Magdalenian sites will for the time being remain unnoticed.

The site of Eysersheide and the other open-air sites of the Meuse-Rhine loess area have yielded but a small part of the rich material culture of the Magdalenian, as known from sites (among which many caves) in southwest and central Europe. This is partly explained by the susceptibility of the archaeological material to degradation processes in loess soils. In all sites, faunal remains and other organic materials have not been preserved as a result of Holocene soil formation and the position of the archaeological layer near

the present surface in completely decalcified loess. As a result, we have no idea which remains from which animal species were left behind in the camp sites and which types of organic tools were made and used by the occupants. In addition, special find categories, such as fossil, ornamental molluscs or small sculptures of ivory have not been preserved (insofar they were originally present!). Also not known from the northern loess sites are engravings in stone, a conspicuous element in more southerly French, German and Belgian Magdalenian sites. In the author's opinion, this absence of engravings cannot be explained by the absence of geological formations in the area, containing stones suitable for engraving. Local deposits of the Meuse and Rhine offer a large and varied supply of stones, and some of these may have been used for this purpose. In addition, the homogeneous, eluvial cortex of specific types of flints, including Sempelveld flint and Valkenburg flint, was in principle suitable for engraving. Nevertheless, in Eysersheide no incised lines are visible in the cortex of artefacts made of these flints. And finally use could be made of chalk, which is a softer stone that can be collected locally in the area with Cretaceous deposits. That chalk was used for engraving is demonstrated by a piece of chalk in Etiolles, bearing engravings of amongst others a horse (Taborin et al. 2001). In Eysersheide and the other loess open-air sites no engravings in chalk were found though.

The number of stone artefacts known from the Magdalenian sites in the Meuse-Rhine loess area differs greatly from each other. Which meaning should be attached to this exactly is not clear. At the start of the excavations, two sites (Kanne and Alsdorf) were already considerably disturbed by non-archaeological digging and thus could no longer be investigated completely. At the excavation locations of Mesch and Eysersheide, a few dozen Magdalenian artefacts have been collected from the surface in the years following the excavations. This indicates that artefacts were dispersed over a larger area than excavated as a result of ploughing. Moreover, we should take into account erosion, through which small artefacts, including backed bladelets and small fragments of tools, are under-represented in the inventories. Needless to say, small artefacts may also have been

overlooked in squares of which the sediment was not sieved. And finally, the sites of Koningsbosch, Beeck, Kamphausen and Galgenberg are exclusively known from surface finds. The conclusion is that any further examination of the sites will be based on incomplete datasets. Therefore we should be cautious when interpreting quantitative and qualitative differences in the finds between sites.

Among the Magdalenian open-air sites of the Meuse-Rhine loess area, Eyserheide occupies a special position. In this respect can be pointed out the appealing results of the investigation of raw materials, refitting and use-wear traces. In the first place, the inventory is distinct from those of other excavated sites (such as Orp-le-Grand, Kanne and Mesch) by the large diversity of flint materials that were worked at the site. The location of the site in the vicinity of primary Cretaceous deposits containing different types of flint is reflected in the composition of the raw materials. Also thanks to this diversity, numerous artefacts could be refitted, thus considerably increasing the possibilities of technological analyses. Thanks to large compositions of refitted artefacts (RMUs M3, M6, M9, S1 and S3), a comparison proved possible and meaningful between technological characteristics of the flint assemblage of Eyserheide and those of Magdalenian sites southeast of Paris (Pincevent, Verberie, Marsangy and Etiolles). Trends in flint working and technological operations that have been described for the French sites have also been recognised in the finds of Eyserheide. Regarding morphological and metric characteristics of the worked terrace flint, there are parallels between Eyserheide and Pincevent in particular. Other similarities are the distinction between *débitage élaboré* and *débitage simplifié* and indications of a less careful way of working (*chûte de soin*) during the last stage of core reduction. From technological studies can be inferred that the classic way of Magdalenian stone working, *le débitage magdalénien classique*, saw general application around 13,000 BP in the loess sites at the northern fringe of Magdalenian territory. And finally, Eyserheide is to date the only site in the Meuse-Rhine loess area where artefacts have been investigated on use-wear traces and for which the analysis has yielded positive results (Sano, see chapter 5). The results point to working of antler, bone and/or ivory, that is materials that have decayed as a result of post-depositional processes, and not to very intensive or repeated use of the artefacts investigated.

The site of Eyserheide and the other open-air sites of the Meuse-Rhine loess area fit into the ‘big story’ of the colonisation of and dispersal over the northern parts of Europe of groups of Magdalenian hunters and gatherers at the end of the Weichsel ice age. Ameliorated climatic

conditions after the extreme cold of the Last Glacial Maximum and after a hiatus in human occupation of many thousands of years, have led to humans visiting for the first time again areas in Northwest Europe. Thanks to the rejection of numerous conventional and ‘highly problematic’ radiocarbon dates and the availability now of a large number of ‘new’, and far more reliable AMS radiocarbon dates of (humanly modified) organic material (for the Belgian Ardennes, see Charles 1996), our insight into the chronology of the process of colonisation has increased tremendously in the past decades. Magdalenian hunters and gatherers arrived around 13,600 BP in the Thuringia Basin and around 13,400 years BP in the German Central Rhineland (Housley et al. 1997). The occupation of the Belgian Ardennes started presumably around the same time as that of the Central Rhineland, while the Paris Basin was visited for the first time by people from the Magdalenian a few centuries later, around 13,000 BP. This time span corresponds with the end phase of the Pleniglacial (*die Endphase der jungpaläolithischen Steppe*, Bosinski 1987), and is characterised by a dry, steppe-like environment in which different species of herbivores lived (‘Mammoth Steppe’ cf. Guthrie 1990). At the beginning of the Late Glacial interstadial (climatic event GI 1e as recorded in the Greenland GRIP ice core, Meiendorf interstadial), the temperature increased considerably in a short time-span of a few dozen years. This sudden warming is dated to around 14,700 cal BP. In response, the diversity in vegetation and fauna increased, in particular in river valleys and in other more sheltered areas of the landscape. It is important to note that this period of far-reaching climatic and environmental changes followed a few (C^{14}) centuries *after* Magdalenian hunters and gatherers moved into parts of Northwest Europe, in a period of still cold climatic, stadial conditions. Radiocarbon dates further show that regions were not occupied simultaneously or for an equally long time. In contrast to the Belgian Ardennes and the German Central Rhineland, for instance, the majority of the excavated sites (among which Pincevent, Verberie, Ville-Saint-Jacques, Marolles) in the Paris Basin is dated to *after* the Meiendorf interstadial (or Bølling interstadial).

Which reasons exactly underlie the migrations of Magdalenian hunters and gatherers from the cultural core areas in southwest Europe to more northerly areas and along which routes these migrations exactly occurred is difficult to ascertain from the available data. One possibility is that human groups moved gradually in a northerly direction in the tracks of important game, such as reindeer, horse and saiga antelope (for overviews, see Delpech 1989, 1992). New AMS radiocarbon dates of the Magdalenian site of Maszycka Cave near Krakow in southern Poland (T. Terberger, pers. comm. 2011), point to the possibility of alternative scenarios,

namely a rapid migration to the southern margins of the North European plain already in the second half of the 17th millennium cal BC. Also in view of the position in the landscape of numerous sites along rivers and smaller watercourses, it is likely that the valley bottoms functioned as important migration routes for both groups of humans and herds of animals. We can also imagine that roughly south-north orientated valleys of large rivers, like the Rhine and Meuse, had a 'guiding' role in the exploration of areas (far) north of the existing habitats. Moving into northern areas, in first instance without any knowledge of the natural landscape and the raw material and food resources present there, required flexibility and adaptations (adaptive responses) of the groups of hunters and gatherers concerned. Whether the colonisation would be successful or not was only partially dependent on climate, vegetation and herewith connected the nature and availability of primary food sources. Of more importance was the 'cultural baggage' of the groups of hunters and gatherers concerned in terms of for instance social relationships, communication and exchange of information (Gamble 1991). An example is the ability to share with other members of the group new experiences regarding location and time of availability of natural food sources. To translate these experiences into efficient strategies of exploitation, with possible consequences for the size and composition of groups, degree of mobility, choice of location of the camp sites, hunting practices and specific elements of material culture, was very important. In this connection, great importance should be attached to the role of small, pioneering groups of humans who as first ones explored unknown and, for a long time, unoccupied landscapes at the very edge of their annual range (annual territory). For instance during short hunting trips, the potential could be determined of landscapes in terms of exploitation of food sources, raw materials and such like. By having these explorations carried out by small groups, risks of food shortages for larger social units could be avoided. After their return, 'new' information could be exchanged with members of the own group and/or members of other groups, during aggregations at specific locations (of which Andernach and Gönnersdorf could be examples) in the course of the annual mobility cycle. This way the foundation could be laid for a decision on a more structural presence or stay in northern 'marginal' areas.

The site of Eysersheide and the nearby open-air loess sites are remnants of smaller camp sites which, also in view of their position on the northern edge of the extensive cultural territory of the Magdalenian, fit in well with the picture of a pioneer phase of occupation (see chapter 8). With a view to a functional interpretation of the site of Eysersheide, data on the nature and origin of the used flint are considered very

important. Although in all cases of local provenance (< 5 km), nodules of five types of flint and several pieces of other types of stone (siltstone, quartzitic sandstone) were carried from different source locations and different directions to the location of the camp site at the margin of a loess plateau (fig. 7.4). This observation, together with a high degree of typological diversity of the retouched tools, are an indication of a temporary, central function of the camp site in the settlement system of Magdalenian hunter and gatherers. Also the results of use-wear analysis seem to fit into the picture of a multi-functional camp site, where the use of non-modified blades and flakes (as far as determined in the group of Orsbach flint) also played an important role. Because of these characteristics, an interpretation of the Eysersheide site as a temporarily occupied base camp of a small social unit (one nuclear family) is considered most likely. This interpretation is preferred to that of for instance flint exploitation site or special purpose site, as in a general sense the sites of the Meuse-Rhine loess area are referred to.

Of the types of flint worked in Eysersheide, artefacts have also been recovered from other sites in the eastern part of the Meuse-Rhine loess area. It concerns Sijpeveld flint in Sweikhuizen-GP and -KW and Kamphausen, and Orsbach flint in Kamphausen and Beeck. The distance of these sites to the nearest source locations varies from 10 to 30 km. Eysersheide is located in the natural source area of these two types of flint and shows a significantly more extensive use and working. It is quite possible that Eysersheide was one of the camp sites where cores, blades and/or tools of Sijpeveld flint and Orsbach flint were produced, that were subsequently taken away to camp sites *outside* the area of flint-bearing Cretaceous deposits. Given this transport over distances of minimally 10 km, both types of flint were not only of local but also of regional importance. A different role was played in the technological organisation of Magdalenian groups by Rijckholt flint with 'eluvial cortex'. Artefacts of this flint were not found in Sweikhuizen-GP and -KW, nor in the German open-air sites in the eastern part of the Meuse-Rhine loess area, but they were retrieved in Andernach and Gönnersdorf despite the clearly larger distance (100-120 km) of both sites to the source area. Moreover, in Andernach CII and Gönnersdorf CII in particular we are dealing with sizeable quantities of artefacts. On this basis we seem to be dealing with an 'export product' of supra-regional importance.

The use of *en éperon* preparation of the striking platform, on the basis of characteristics of the butt of blades (*talons en éperon*), has been demonstrated in all excavated Magdalenian sites of the Meuse-Rhine loess area. This links these locations from a technological point of view to sites in more

southerly regions, among which the Belgian Ardennes, the Paris Basin, and the German Central Rhineland. By using *en éperon* technique, the flint workers not only achieved a technical and functional aim, namely obtaining an optimal cutting surface in the shape of blades with parallel regular lateral edges with a length of 12 to 15 cm. But this working practice, at the northern fringe of the cultural distribution area, also provided continuity of an ‘everyday’ and characteristic element in the cultural tradition of the northern Magdalenian. The application of *en éperon* technique is not an exclusive feature of the Magdalenian but goes back in time to the Aurignacian, Gravettian and the Protomagdalenian (= Périgordien VII). For the latter phase, *en éperon* preparation of the striking platform of cores has been demonstrated in Laugerie-Haute (Dordogne), Abri Pataud, Le Blot (Haute-Loire), and Les Peyrugues (Lot) in southern France (Surmely and Alix 2005). The sites are dated to around 22,000 BP, at the beginning of the Last Glacial Maximum, and are a few thousand years older than the earliest phase of the Magdalenian (0). In these sites, traces of *en éperon* preparation have been observed on large and regular blades, the butt of which shows a characteristic spur (*talons en éperon*). They have been described as “les beaux produits de plein débitage”. For comparable specimens Surmely and Alix (2005) refer to the Magdalenian of the Paris Basin: “A notre connaissance, les seuls spécimens comparables, d’un point de vue qualitatif et quantitatif, à ceux du Protomagdalénien ne se rencontrent que dans quelques gisements du Magdalénien d’Ile-de-France, comme Etiolles et Les Tarterêts, où le débitage laminaire est tourné vers la production de grandes lames.”

Following the above quotation, there are two periods or cultural phases in the Upper Palaeolithic in which *en éperon* technique was applied in a systematic way and in a pronounced form: the Protomagdalenian in southern France around 22,000 BP and the Magdalenian IV-VI in the period from c. 13,000 BP (Etiolles) to 11,800 BP. However, for instance in southwestern France, also in the intervening phases of the Magdalenian flint knappers used *en éperon* technology, provided that large nodules of good quality flint

were locally available (M. Langlais, pers. comm. 2011). Obviously, we are dealing with a practice in stone technology that was deeply rooted in the cultural tradition of the Magdalenian, aimed at optimising of the process of blade production. Hand in hand with the dispersal of groups of hunters and gatherers over parts of Northwest Europe, good quality flint sources not earlier visited became available for exploitation, like the flint-bearing Cretaceous deposits that are found in the Meuse-Rhine loess area. Thanks to the presence of these sources, *le débitage magdalénien classique* could be continued in previously unoccupied, ‘marginal’ landscapes, far away from the cultural core area in southwestern France.

To conclude this monograph, we return to the site of Eyserheide in the hills of Dutch Limburg. With this study we have been able to demonstrate that (ploughed-out) surface sites can be of great value for the investigation of Late Upper Palaeolithic societies. Regardless of the degree of disturbance, they provide information on the choice of locations of camp sites in the landscape, on the nature and provenance of worked raw materials, and on aspects of stone technology, provided that during the processing full attention is given to refitting. Besides, stone artefacts originating from surface sites are not by definition unsuitable for analysis of use-wear traces, as is shown from the results of the research of K. Sano. When not completely disturbed by ploughing and excavated according to modern standards, they are even important for spatial analysis and interpretation of spatial patterns in terms of the organisation and use of camp sites at the end of the Weichsel ice age. In this context, it is important that the findings of the investigation of Eyserheide, but also those of the nearby located sites in the Meuse-Rhine loess area, are tested. Although future excavations could certainly play a part there, we may also think of renewed research into finds of already excavated sites, for instance aimed at a characterisation and identification of used lithic raw materials and the precise determination of the associated source locations. By putting the data of both excavated and non-excavated (surface) sites in a broader geographical framework, our picture of the Magdalenian occupation of the Meuse-Rhine loess area can be refined further.