

MIDDLE PALAEOLITHIC FINDS FROM THE NORTHERN NETHERLANDS

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I. INTRODUCTION

In this article six Middle Palaeolithic finds from the Northern Netherlands are described. As far as the author is aware, these constitute all the Middle Palaeolithic finds made in the region up until now. In the course of time many other finds have been attributed to the Middle Palaeolithic, but of these a high proportion are forgeries, while the rest consist of pseudo-artefacts, objects from later periods, etc.

The first Middle Palaeolithic find in the Northern Netherlands was the hand-axe from Wijnjeterp, found in 1939. The other objects were found, as far as can be ascertained, between 1960 and 1971. All six are isolated artefacts not found *in situ*. For details of observations regarding the geology and natural surface modifications on these flints see Stapert, 1976 (this volume).

For their part in the realization of this article I am greatly indebted to the following persons and institutions: the British Museum, for the opportunity to study the "two hand-axes from Bathmen", and for providing photographs and drawings of them; Mr. J. G. de Bruyn (Teyler's Museum, Haarlem) for information concerning the "two hand-axes from Bathmen"; Mr. P. Houtsma, for information concerning the findspot of the hand-axe from Wijnjeterp; Mr. F. W. E. Colly (B.A.I.) who took all the other photographs except for that of the point from Havelterberg, which was taken by Mr. G. Oosterveen (Provincial Government of Drente); Mr. H. R. Roelink (B.A.I.) who made the drawings, except for those of the "two hand-axes from Bathmen"; Mrs. Engelen Veger who typed the manuscript; Mrs. Sheila M. van Gelder-Ottway who translated the text into English; finally of course the owners who gave me the opportunity to study their artefacts.

2. THE FINDS

2.1. THE HAND-AXE FROM WIJNJETERP (PROVINCE OF FRIESLAND) (figs. 1 and 2)

This hand-axe was found by H. van der Vliet in 1939, during reclamation of an area near "De Poasen" in the neighbourhood of Wijnjeterp (mu-

nicipality of Opsterland). The object was found in loose soil, including boulder-clay, which had come from a recently dug ditch. In 1949 the object was recognized by Dr. A. Bohmers (at that time a staff member of the B.A.I.), and subsequently in 1950 an investigation was made on the spot. In 1954 there appeared a publication on the artefact by Bohmers and Wouters, following an earlier short article by Van der Vliet (1952). Later, it was republished by Bosinski (1967). The hand-axe is now part of the collection of the *Oudheidkamer* in Gorredijk (Friesland).

The coordinates of the find-spot are unfortunately not known precisely (nor is there any location-sketch in the Bohmers file at the B.A.I.), but according to P. Houtsma they can be estimated approximately as: 563.10/205.85 (Topographical Map of the Netherlands 1:25,000; no. IIE-Drachten). The find-spot is located along the southern fringe of the valley of the Oud Diep or Koningsdiep (see fig. 12).

During the investigation a profile was exposed at right angles to the above-mentioned ditch. The following stratigraphy was established:

- 0 - 30 cm: disturbed
- 30 - 125 cm: cover-sand
- 125 - 140 cm: boulder-sand: "Brown loamy zone, with pebble layer, and flints with wind-polishing". "Flints with wind-gloss on one side as in the case of the hand-axe. The hand-axe has therefore come from this layer".*)
- 140 - deeper than 180 cm: Boulder-clay. "Unlayered, blue, sandy, few stones, flints without wind-gloss".*)

All the evidence indicates that the hand-axe was situated in or on top of the boulder-sand. This does not provide us with any dating however of which we can be completely certain. Although the first half of the last glacial is the most probable, a dating in the last part of the penultimate glacial or the last interglacial cannot be wholly

* Citations from the description of a drawing of this profile, present in the Bohmers file, B.A.I.

excluded (see 4).

No other Middle Palaeolithic material was found during the investigation, nor during later exploration in the vicinity.

Measurements of the hand-axe:

Maximum length	:	12.27 cm
„ width	:	8.1 cm
„ thickness	:	4.1 cm
Width in the middle	:	8.0 cm
Width at $\frac{1}{4}$ distance from top	:	6.9 cm
Width at $\frac{1}{4}$ distance from base	:	7.9 cm
Distance between point of maximum width and base	:	4.3 cm
Distance between point of maximum thickness and base	:	6.7 cm
Thickness in the middle	:	4.1 cm
Angle of side-edges	:	C.75° and 65°
(though these angles vary considerably along both sides)		
Weight	:	376.2 g

Indices according to Bordes (1961):

L/a	:	2.85
n/m x 100	:	99
L/m	:	1.51
m/e	:	1.98

On the basis of these figures the hand-axe belongs to the group *bifaces ovalaires*.

There are no signs of recent damage (though several sub-recent). The flint contains among other things a sea-urchin fossil, clearly visible on face II. The piece of flint from which the artefact was made was not much bigger than the hand-axe, in view of several remains of cortex (stippled on the drawing) and frost-split faces pre-dating manufacture (shaded in grey on the drawing) on both faces. The shape of the original nodule resulted in one face of the hand-axe being rather flat, so that the implement is D-shaped in cross-section. The base is a cutting edge.

The raw material was not ideal for working, as is evident from among other things many frost-cracks which were already present in the flint before manufacture: several flake-scars have been influenced by these cracks (e.g. they stop abruptly sideways at such a crack). Inconvenient angles were also present in various places along the edges, which must have made working difficult. Yet a number of scars of reasonably successful smooth

flakes are visible, and the sides are fairly straight. Many flake-scars (flat, with diffuse percussion-bulb impressions) suggest "soft percussion" as the technique applied. But there are also a number of scars of more or less unsuccessful flakes, with hinge- or step-fractures. The somewhat "primitive" appearance of the implement as a whole is largely due to the poor quality of the raw material.

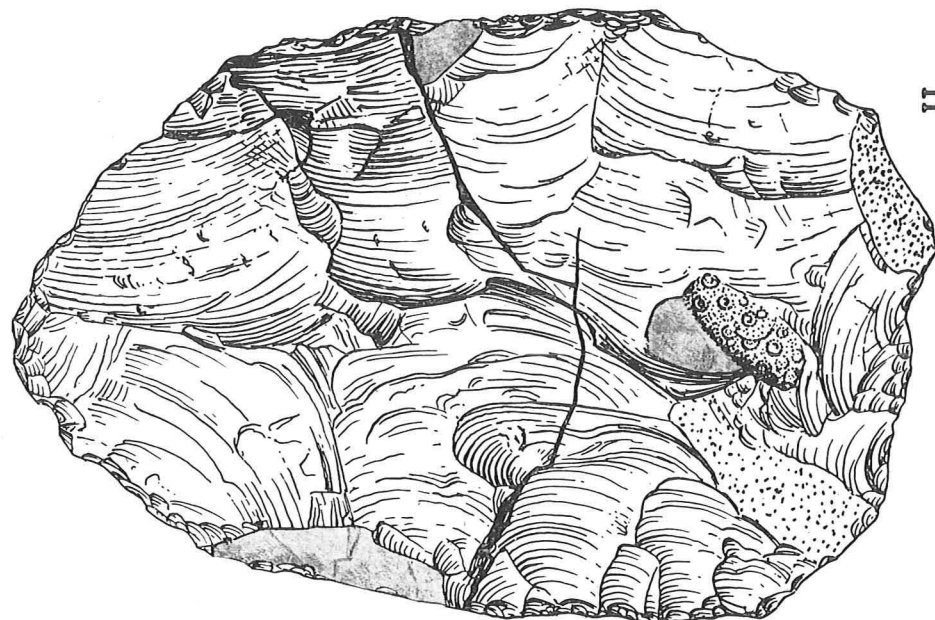
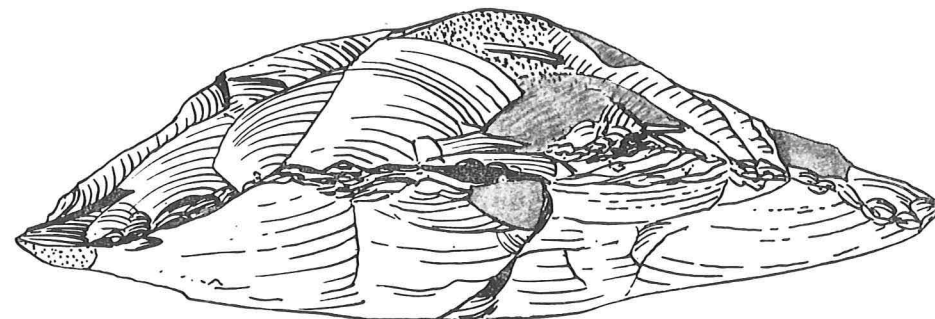
The entire artefact is covered with brown patina, ranging from yellow to mid-brown in colour, except for places where white patina is present, although there too the brown patina glimmers through, indicating that the brown patina is probably older than the white. There is much white patina especially on face I, particularly along the edge of the left side; on face II there is less white patina along the edge of the same side. The white patina on face I displays a sort of "shadow pattern": within one flake-scar more intense white patina is present near the ridge furthest away from the edge of the left side, and little or no white patina near the opposite ridge. Assuming that the origin of white patina is related to moving soil-water (downwards) we can reconstruct the approximate position of the hand-axe in the soil at the time when the white patina was formed: the hand-axe was in a slanting position with the edge of the left side of face I pointing upwards.

The hand-axe is covered on both sides by wind-gloss which is variable in intensity; there is a clearly higher gloss on face II than on face I. At the time when the wind-gloss originated, when the object was therefore lying for the most part on the surface, face II must have been particularly exposed.

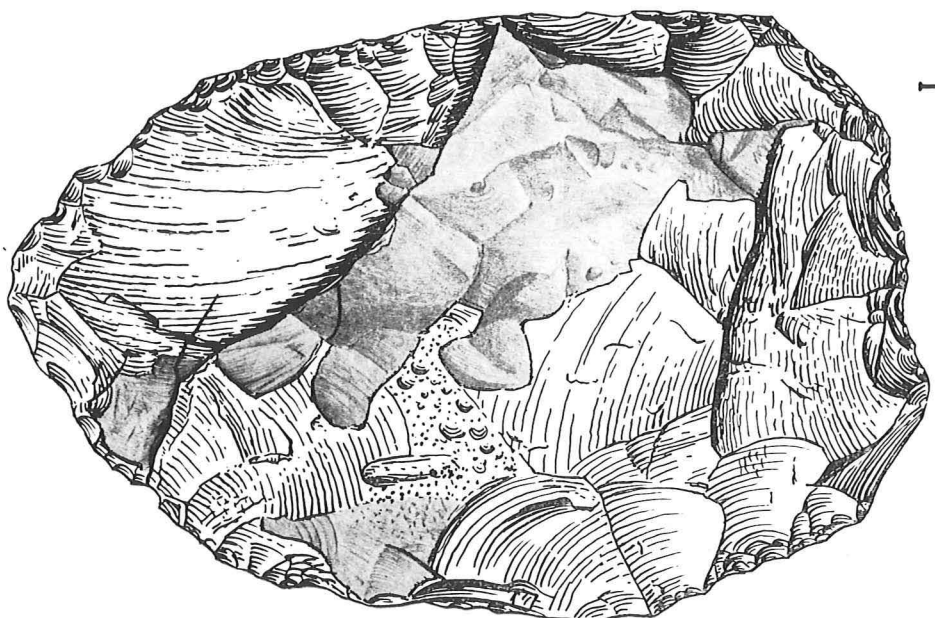
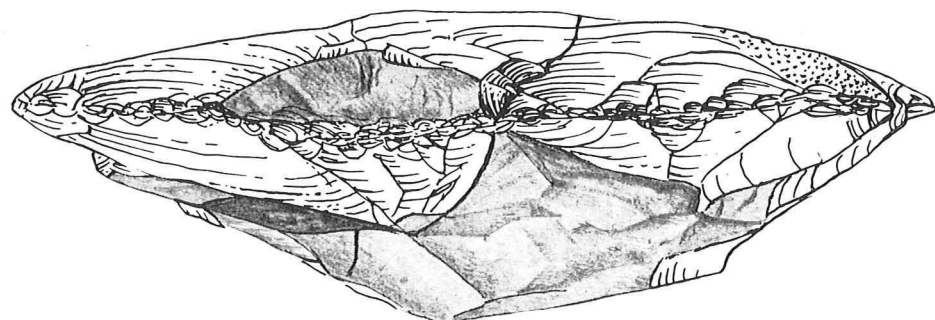
Since there is subrecent damage with brown patina present but not wind-gloss, the wind-gloss must have originated earlier than the brown patina. The most probable order of succession in which these different surface modifications arose is therefore: 1. wind-gloss, 2. brown patina, 3. white patina.

The wind-gloss is not noticeably less lustrous inside the patches of white patina than outside; the formation of white patina has apparently little effect on wind-gloss already present. Many small pits are visible especially within patches with in-





II



I



Fig. 1. The hand-axe from Wijnjeterp (province of Friesland). Visible features include wind-gloss and brown patina. Photograph by F. W. E. Colly, B.A.I., Groningen. Scale: 1:1.
Fig. 2. The hand-axe from Wijnjeterp (province of Friesland). Drawing by H. R. Roelink, B.A.I., Groningen. Scale: 1:1.

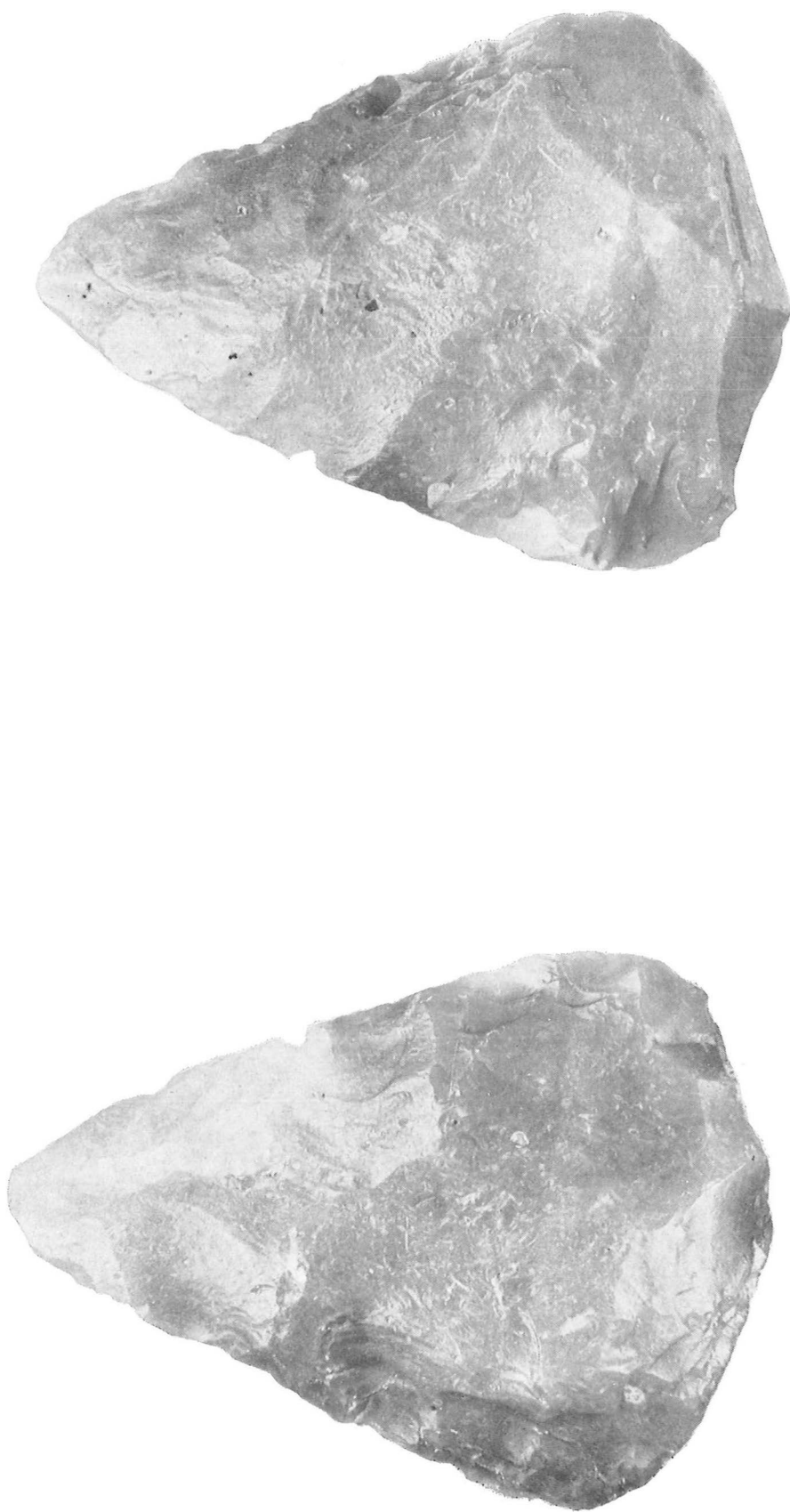


Fig. 3. The hand-axe from Anderen (province of Drenthe).
Photograph by F. W. E. Colly, B.A.I., Groningen.
Scale: 1:1.

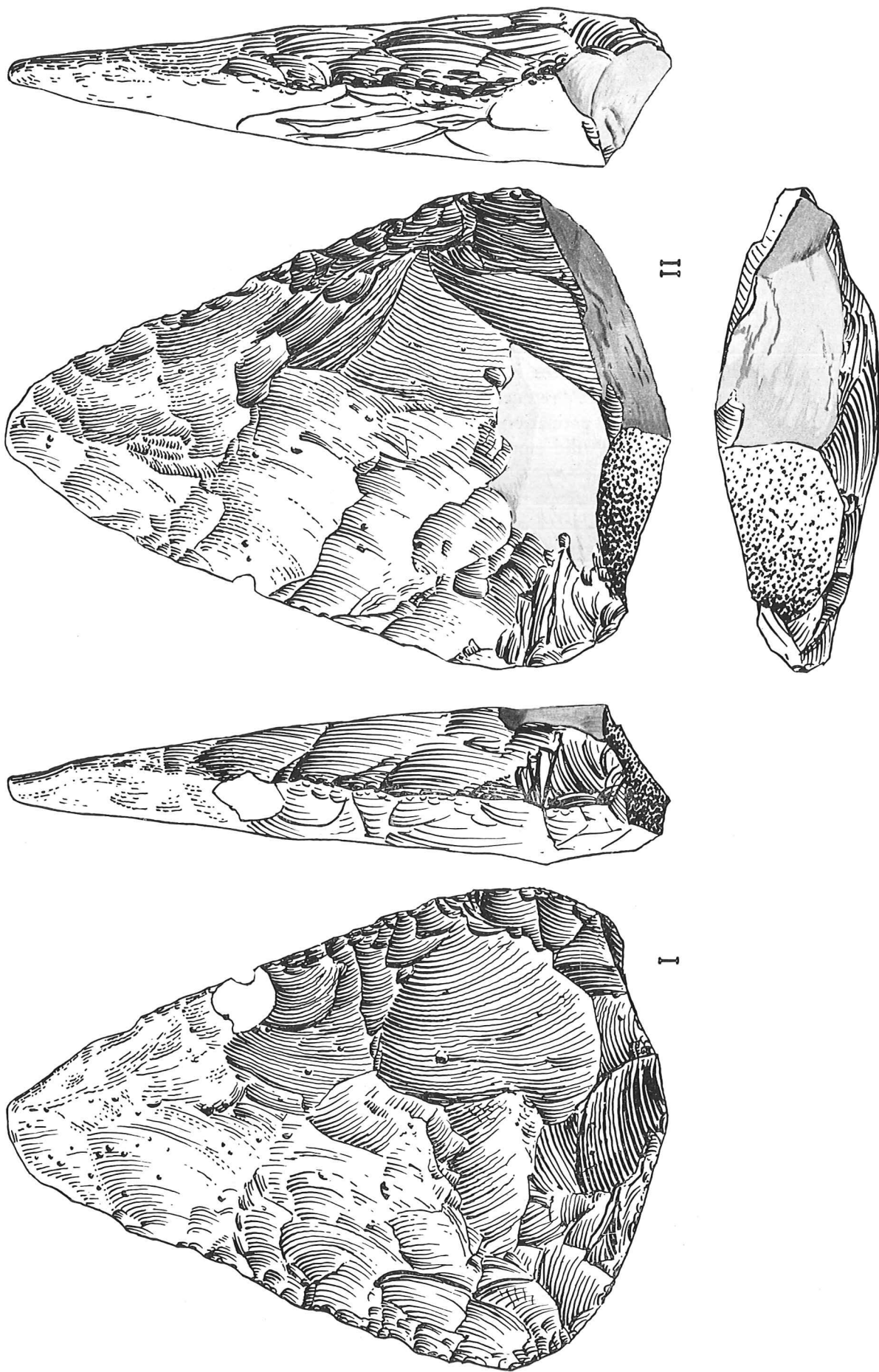


Fig. 4. The hand-axe from Anderen (province of Drenthe).
Drawing by H. R. Roelink, B.A.I., Groningen. Scale: 1:1.

tensive wind-gloss; these pits are round to oval depressions with a flat bottom, up to about 1 mm in diameter, though usually smaller. Small pits such as these appear to be associated with wind-gloss (Stapert, 1976, this volume). They occur densely clustered together in small groups here and there, thus resembling "honeycomb-weathering".

The side-edges of the hand-axe are rather blunted as a result of soil movements such as cryoturbation and gelifluction, to which processes is attributable much fine and some crude "retouch"; from the differences in degree of patination it can be seen that these "retouch" did not all originate simultaneously.

With the aid of a stereo microscope small pressure cones can be seen in many places, and a few scratches. Ridges and side-edges are very clearly rounded to some extent, not as a result of river action but probably due to solution.

The surface modifications present on this flint which were brought about after it had been left behind are, to sum up: wind-gloss, brown patina, white patina, small pits, "cryoturbation retouch", "pressure cones", scratches and rounding.

2.2. THE HAND-AXE FROM ANDEREN (PROVINCE OF DRENTE) (figs. 3 and 4)

This hand-axe was found in 1962 or 1963 by G. van Veen (of Anderen) during the levelling of a hedgerow. The find-spot is situated about half a mile NNW of Anderen (municipality of Anloo), along the southern fringe of the valley of the Scheebroekerloopje, a small side-valley of the Rolderdiep. The coordinates are approximately: 558.38/241.80 (Topographical Map of the Netherlands 1:25,000, no. 12G - Gieten).

The hand-axe is the property of H. Lanjouw (of Anloo), and is exhibited in the Drents Museum in Assen. An interim publication has already appeared (Stapert, 1976A).

From information provided by the finder, it is evident that the hand-axe was not found *in situ*: the object came to light during the uprooting of a tree in a hedgerow. The filling of the hedge-bank included boulder-clay which must have originated from the adjacent ditch. The hand-axe will thus

have been moved when the ditch was dug, subsequently ending up in the filling of the hedge-bank.

From borings made on the spot the following stratigraphy can be deduced:

- 0 - 50 cm top-soil
- 50 - 60 cm brown cover-sand
(B-horizon of podsol)
- 60 - 100 cm orange-brown boulder-sand,
few stones
- 100 - > 120 cm grey boulder-clay,
weathered at the top

In the boulder-sand flints are present with wind-gloss and brown patina, so the hand-axe, which displays these same surface modifications, must have come from that level or from immediately on top of it.

The hand-axe is finely worked, flat and triangular. There is one recently damaged patch along one side (left white on the drawing), from which it is evident that the raw material is a light-grey opaque bryozoan flint, a type of flint that is very common in the boulder-clay, so there is no reason to suppose that the hand-axe has been transported over any great distance.

The base is not a cutting edge, but consists of a flat face, about 2 cm wide in the middle, formed by a cortex fragment and an old frost-split face (cortex is shown stippled in the drawing, frost-split faces shaded grey). This face makes an angle of ca. 60° with the sagittal axis of symmetry (through the tip and the line of greatest width). The cortex is ca. 1 mm thick and light grey-brown in colour. Next to the base on face II there is a frost-split face which must have originated after the production of the hand-axe (see below). It cannot be ascertained whether the hand-axe was made from a flake, because the place where one might expect to find a percussion bulb is missing on account of this frost-split face. Nor are there any other indications available suggesting that the hand-axe was made from a flake, although the regular and thin longitudinal cross-section seems to point to this. Especially on face II (on the right) a number of "step fractures" are visible, but otherwise the flake scars indicate a well controlled percussion technique. There are quite a lot of fairly wide and relatively long flake scars, and

on these some shorter flakes, some of which end in "hinge fractures". The flake scars are flat with diffuse percussion bulb impressions and few distinct percussion waves, so it is most probable that "soft percussion" was applied during the working process.

Measurements of the hand-axe:

max. length	:	11.83 cm
max. width	:	8.67 cm
max. thickness	:	2.85 cm
width in middle	:	6.9 cm
width at $\frac{1}{4}$ distance from top	:	4.2 cm
width at $\frac{1}{4}$ distance from base	:	8.6 cm
thickness in middle	:	2.2 cm
distance from base to point of max. width	:	2.5 cm
distance from base to point of max. thickness	:	2.0 cm
edge-angle, left (of face I) (measured over 1 cm)	:	c. 53°
edge-angle, right (measured over 1 cm) (average c. 59°)	:	c. 65°
weight	:	249.0 g

Indices according to Bordes (1961):

L/a	:	4.73
n/m x 100	:	79.6
L/m	:	1.36
m/e	:	3.04

On the basis of these figures the hand-axe falls into group I: "*triangulaires*" and can therefore be described as a triangular hand-axe, although it closely approximates to group II *subtriangulaires*. According to Bordes (1961; 1968), triangular, flat hand-axes can be dated with reasonable accuracy in France. They are characteristic for his "*Moustérien de tradition acheuléenne, type A*", and should be placed in the French *Würm I*. Unfortunately the French subdivision of the last glacial cannot yet be satisfactorily correlated with the Dutch, and for this reason all that can be said at present is that from a typological viewpoint, this hand-axe could belong to a late phase of the first half of the last glacial, e.g. in the Moershoofd interstadial, which can possibly be correlated with the French *Würm I/II interstadial* (Waterbolk, 1971).

From the above-mentioned recent damage it is evident that the hand-axe is covered with brown patina, which is darker on face I than on face II. A somewhat greenish tinge is also visible locally (especially near the base, on both sides).

In addition the whole implement is covered with wind-gloss, with face I clearly displaying a higher sheen than face II in this respect. Wind-gloss is absent from the above-mentioned frost-split face on face II (near the base); this does however display brown patina. This means that the wind-gloss originated earlier than the brown patina, and that this particular face originated (by means of frost-splitting) after the formation of wind-gloss, and is thus secondary. Small pits, up to 2-3 mm in diameter, are visible all over the hand-axe, especially where intense wind-gloss is present (several of the larger pits are shown in the drawing).

Along the side-edges, various "cryoturbation retouches" are visible, which are rather coarse; sometimes they are conspicuous as a result of a lesser degree of patination than the rest of the surface.

A most remarkable phenomenon is that all the ridges and edges in the point region (from about one-third distance from the top) are distinctly rounded; this rounding increases towards the top and also extends over the faces, in which respect face I is clearly more rounded than face II. Sets of subparallel, fine scratches are visible, especially near the top, though also elsewhere on both faces of the hand-axe. These are hardly visible at a magnification of 50x, so to examine this phenomenon a scanning electronmicroscope was used. By this means it became evident that these scratches are present most abundantly near the point, where for the most part they run more or less parallel to the central axis of the hand-axe. Yet there are also fine scratches present running in various other directions, and isolated bigger scratches oriented randomly. The sets of fine scratches occur especially on or near ridges and other protruding parts of the surface. The scratches are often present mainly on one side of a ridge, especially when the direction of the scratches is approximately at right angles to the ridge. Here and there the surface is somewhat shiny inside the clusters of scratches. This gloss is not as high as



Fig. 5. The hand-axe from Exloo (province of Drenthe).
Photograph by F. W. E. Colly, B.A.I., Groningen.
Scale: 1:1.

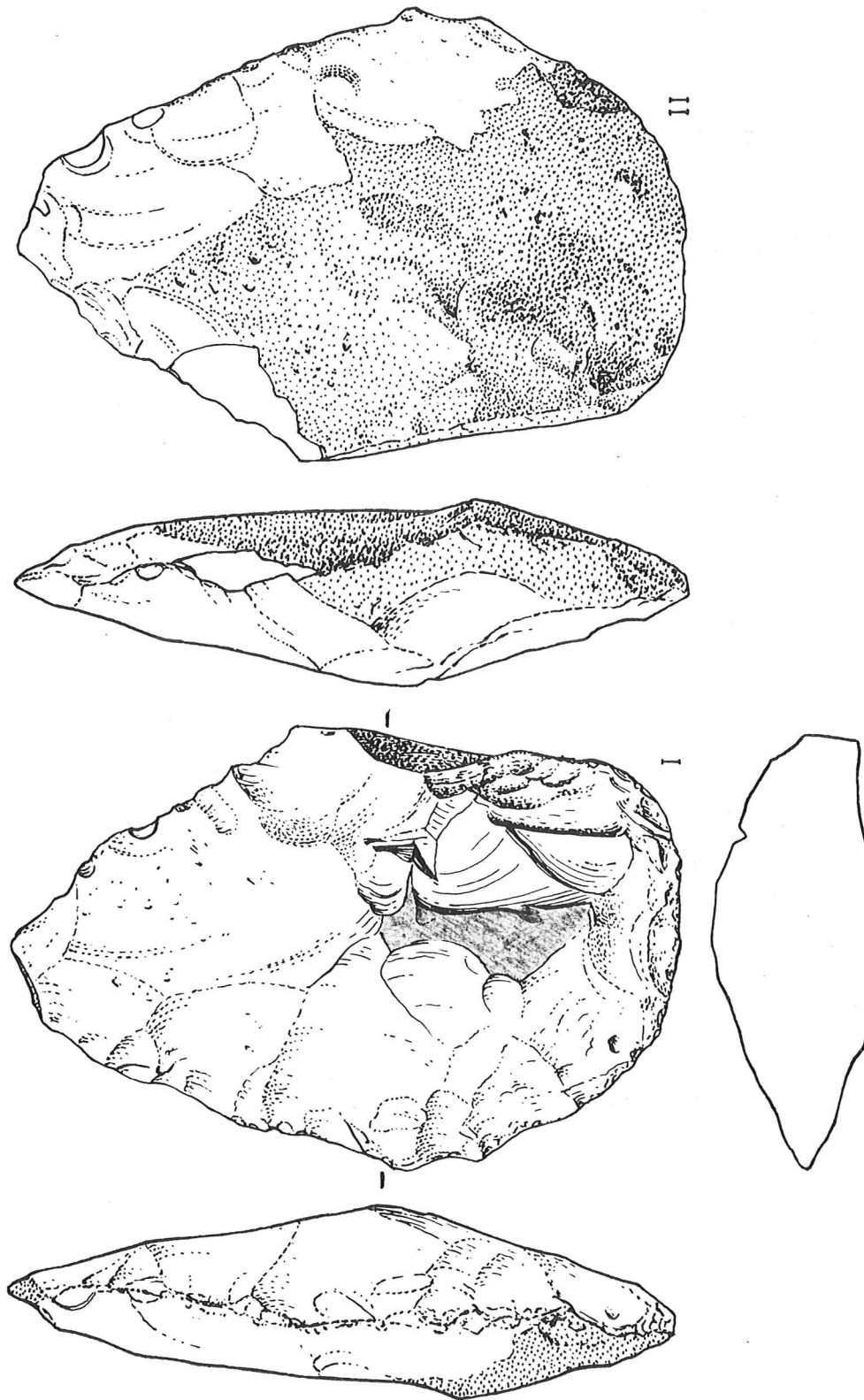


Fig. 6. The hand-axe from Exloo (province of Drenthe).
 Drawing by H. R. Roelink, B.A.I., Groningen.
 Scale: 1:1.

that occurring in patches of "friction gloss". In fact near the point there is also a small patch of friction gloss, on which the striping is in a completely different direction to that of the fine scratches running close by. In view of the fact that these fine scratches are also present inside scars interpreted as "cryoturbation retouch", they must be secondary, and therefore cannot be traces of use. In contradiction to that hypothesis is also the fact that sets of these scratches occur over the whole surface, in the middle of the faces and close to the base as well, and that these various sets of scratches run in completely different directions with respect to one another. What we are dealing with here is therefore most probably a natural process, which produces very large numbers of fine scratches. It is not clear whether the marked degree of rounding of the point region is directly connected with the scratches. There are certainly many scratches present in the point region, but these also occur elsewhere, while furthermore there are patches near the point without distinct scratches. Nevertheless some connection seems likely. In the author's present opinion, extreme gelifluction seems to be a probable hypothesis for the origin of the scratches, while flowing melt-water could possibly account for the marked rounding of the point. It is notable however that such a phenomenon occurs only very seldom in the case of natural flints from boulder-sand. It is intended that observations made on this hand-axe using the scanning electronmicroscope will be published more extensively elsewhere; the foregoing should thus be regarded as provisional.

With the aid of a microscope are further visible quite a lot of pressure cones (especially near the top) and some fine frost-cracks (possibly secondary). Ridges and side-edges are everywhere somewhat rounded (probably due to solution).

The natural surface modifications on this implement are, to sum up: wind-gloss, brown patina, secondary frost-splitting, "cryoturbation retouch", rounding, small pits, pressure cones, scratches, "friction gloss" and pronounced partial roundedness.

2.3. THE HAND-AXE FROM EXLOO (PROVINCE OF DRENTE) (figs. 5 and 6)

This object was found in 1965 by Mr. J. A. de Jong (Opeinde) among a small heap of stones which a farmer had put along the edge of his field, about 1 km north of Exloo (municipality of Odoorn). In 1965 the field concerned was excavated to a depth of ca. 80 cm for the purpose of sand extraction. On that site there was originally c. 1 m. or less cover-sand on top of boulder-clay and boulder-sand.

The find-spot (fig. 12) is situated along the western fringe of the valley of the river Hunze. The coordinates are approximately 546.18/254.58 (Topographical Map of the Netherlands 1:25,000; no. 17F - Exloo). No publication has previously appeared on this object, which is now in the collection of Mr. J. A. de Jong.

That the object is an artefact can only be accepted with some difficulty; the possibility that we are here dealing with a (natural) pseudo-artefact is slight, but cannot be wholly excluded. In the first place the raw material is of poor quality (opaque, light grey, somewhat coarse-grained bryozoan flint); secondly the object is severely weathered; and thirdly the working is only partial, and as a result of the severe weathering not equally distinct all over.

Measurements of the hand-axe:

Maximum length	: 10.13 cm
Maximum width	: 6.37 cm
Maximum thickness	: 2.58 cm
Width in the middle	: 6.18 cm
Width at 1/4 distance from base	: 5.55 cm
Width at 1/4 distance from top	: 4.30 cm
Distance between point of maximum width and base	: 4.3 cm
Distance between point of maximum thickness and base	: 4.7 cm
Thickness in the middle	: 2.6 cm
Angle of side edges	
left (of face I)	: c. 60°
right (near top)	: c. 55°
Weight	: 157.7 g

Indices according to Bordes (1961):

L/a	: 2.36
n/m x 100	: 97.0
L/m	: 1.59
m/e	: 2.47

If the side with the transverse old cortex-face would have the same shape as the other side, then the index $n/m \times 100$ would be about 0.8, and the hand-axe could then be classified as a *biface subcordiforme*. With the present measurements the value of $n/m \times 100$ is very high, so this artefact falls within the category of *bifaces ovalaires*. The base has been worked more or less into a cutting edge.

Although the hand-axe gives the impression of being very crude, there are nevertheless a number of flat flake-scars with diffuse percussion-bulb impressions, which suggest soft percussion technique. The angle of the edge of the left side (of face I) is moreover rather acute, and this side-edge itself fairly straight. Along the right-hand side, the implement is for the most part only worked on one face, and there is a transverse old cortex-face. Coming from this face there are some smaller flake-scars with hinge- or step-fractures. On face I is preserved a remnant of an old frost-split face (with yellowish patina and wind-gloss), and on surface II a large part of cortex, a very pitted surface with white patina and wind-gloss.

The recognizable flake-scars are severely weathered; they are extremely pitted and display white patina and wind-gloss. Ridges and side-edges are rounded (presumably due to solution).

Along the sides fairly abundant and often coarse "cryoturbation retouch" is present. These scars are often conspicuous since they are less severely weathered than the rest of the surface, though wind-gloss and faint white patination are exhibited. There is one subrecent damaged patch (left white on the drawing), with only a thin white patina. It appears from this that the weathering has hardly penetrated to a depth of 1 mm, while the surface has yet become completely pitted. It is also clear that the wind-gloss originated earlier than the white patina.

In view of the remains of cortex and of frost-split face, pre-dating manufacture, the raw material (a piece of frost-split flint) cannot have been much thicker than the hand-axe is now. On face I the surface in some places consists of a very homogeneous and compact material resembling milky quartz. Within these areas the flake-scars are much more sharply defined (see the drawing), and the surface is also much less pitted. No observa-

tions can be made with the stereo microscope on account of the extremely pitted state of the surface.

The natural surface modifications present on this implement are, to sum up: white patina, extreme pittedness, wind-gloss, rounding and "cryoturbation retouch".

2.4. THE POINT FROM HAVELTERBERG
(PROVINCE OF DRENTE)
(fig. 7)

This implement was found on the surface in 1970 by Mr. H. Snijder (of Ruinerwold), at the foot of a slope of the Havelterberg (municipality of Havelte), almost 2 km north of Havelte. Here there is in general less than 2 m and in some places less than $1/2$ m of cover-sand present on top of boulder-clay and boulder-sand. Apparently hardly any cover-sand is present at the find-spot. The coordinates of the find-spot are approximately: 533.825/212.675 (Topographical Map of the Netherlands 1:25,000; no. 16H - Havelte).

The Havelterberg is part of an ice-pushed moraine ridge dating from the penultimate glacial (Ter Wee, 1962); the find-spot is located at the foot of the southern slope, with no valley present in the immediate vicinity.

The implement is now in the collection of H. Snijder, who is unwilling to lend it out under any conditions; consequently it could not be studied thoroughly, nor is there any drawing of it available. Furthermore there is some suspicion regarding the authenticity of other items in his collection, for which reason the find-spot on figure 12 is indicated as uncertain (see also 5). No publication on this implement has appeared previously.

The implement can be described as a Mousterian point made on a flake with a faceted striking platform remnant. The flaking angle is about 90° ; there is a large and distinct bulb of percussion and a large bulbar scar, indicating that hard percussion was probably applied.

One could possibly classify this implement as a *racloir convergent* (according to Bordes, 1961), but the pointed part is rather thin in longitudinal section. The two retouched sides meet at an angle of about 70° .



Fig. 7. The Mousterian point (or *racloir convergent*) from Havelterberg (province of Drente). Photograph by G. Oosterveen, Provincial Government of Drente, Assen. Scale: 1:1.

Measurements of the point:

Maximum length	: 5.7 cm
Maximum width	: 4.6 cm
Maximum thickness	: c. 1.0 cm
Length of remnant of striking platform	: 2.7 cm
Maximum thickness of remnant of striking platform	: 0.8 cm

The retouch angles of the sides are not equal. On the right (of face I) of the implement, retouch flaking is fairly steep and scalar, while on the left retouch flaking is rather flat at a more acute angle.

There are no recent damaged patches, though several subrecent. The whole object is covered by a thick white patina, and by wind-gloss. There are fairly numerous small pits present in the surface (some of which exceed 1 mm in size). Along the sides "cryoturbation retouch" is visible, so that it cannot be ascertained whether some of the small scars present are possibly the result of use (for example as with some of the fine "retouch" on the ventral surface).

Ridges and side-edges are to some extent distinctly rounded (probably due to solution). In addition some old rust patches are present. In view of the fact that the implement could not be borrowed, no observations could be made with the stereo microscope.

The natural surface modifications observed on this implement are, to sum up: white patina,

wind-gloss, old rust patches, small pits, "cryoturbation retouch", rounding.

2.5. *THE SIDE-SCRAPER FROM EMMEN (PROVINCE OF DRENTE)*
(figs. 8 and 9)

There is little information available concerning this implement. It is the property of the *Oudheidkamer Twente*; the inventory number is 836, and the object was inventoried in 1971, but it was found much earlier. On the inventory note there is however no mention of find-spot, discoverer or circumstances of the find.

The implement is illustrated in Bruyn and Bunte (1961), without any further information however. It was probably found near Emmen, according to Mr. A. Bruyn.

The implement is a convex side-scraper, with bifacial retouch; it was made out of a piece of frost-split flint, with a natural back (formed by the cortex).

Measurements of the scraper:

Maximum length	: 6.55 cm
Maximum width	: 4.10 cm
Maximum thickness	: 1.87 cm
Angle of retouched edge (in middle)	: c. 60°
Weight	: 49.8 g

Frost-split faces pre-dating manufacture are present on both faces. There are several recent dam-

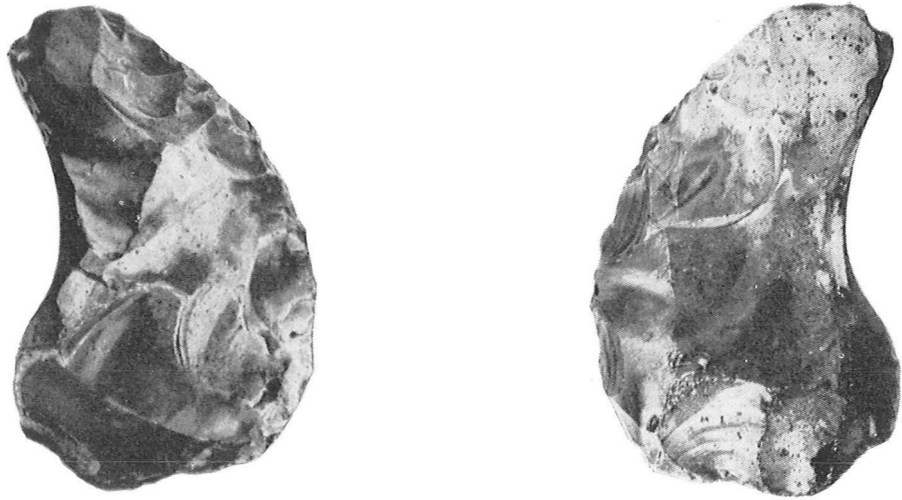


Fig. 8. The convex side-scraper from Emmen (province of Drenthe). Photograph by F. W. E. Colly, B.A.I., Groningen. Scale: 1:1.

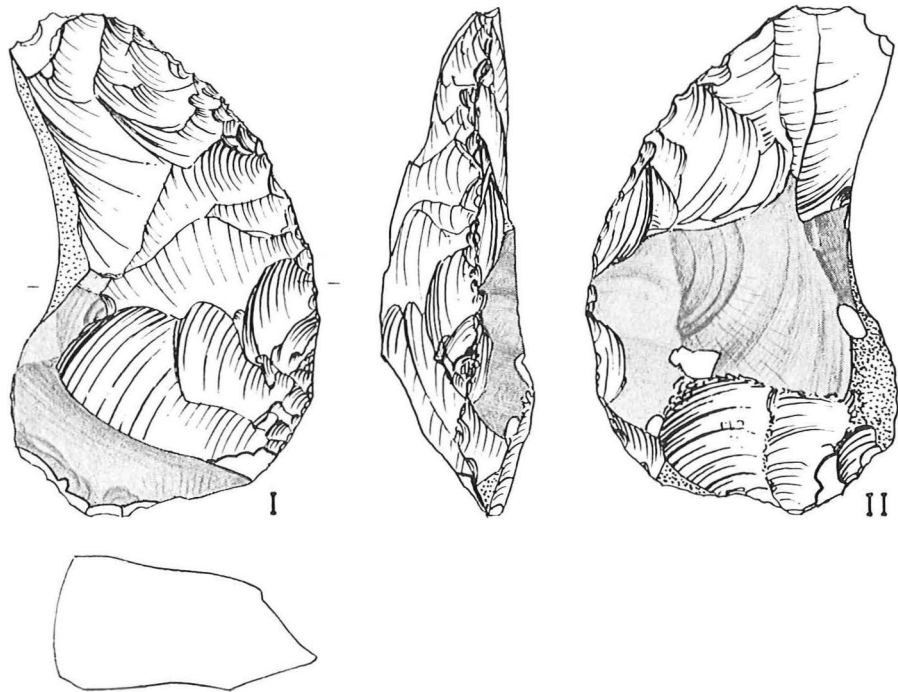


Fig. 9. The convex side-scraper from Emmen (province of Drenthe). Drawing by H. R. Roelink, B.A.I., Groningen. Scale: 1:1.

aged patches, from which it can be seen that the raw material is dark-grey, homogeneous, fine-grained flint. The cortex is thin (± 0.5 mm), dark brown and densely pitted.

The implement has been retouched into a regular convex shape by means of fairly flat re-touching.

The surface has a patchy appearance due to a mixture of white and brown patina. In addition

the entire surface is covered by wind-gloss. Several subrecently damaged areas display only wind-gloss, so in the case of this implement the white and brown patina presumably developed earlier than the wind-gloss.

There are many small pits visible. Along the sides some fine "cryoturbation retouch" can be seen. Ridges and side-edges are to some extent clearly rounded (presumably due to solution).

With the aid of the stereo microscope some scratches and many pressure cones can be discerned. The implement has evidently sustained damage due to cryoturbation and/or gelifluction, as is also witnessed by the fact that in the distant past tiny chips from ridges were pressed off from the surface. These damaged patches all show wind-gloss. In addition there are in many places patches where "friction-gloss" is present.

On this flint the natural surface modifications present are, to sum up: white patina, brown patina, wind-gloss, small pits, "cryoturbation retouch", scratches, pressure cones, "friction-gloss", rounding.

2.6. THE POINT FROM DELDENBROEK (PROVINCE OF OVERIJSEL) (figs. 10 and 11)

This implement was found in 1971 by Mr. G. Holland on the unmetalled road, the Zomerweg, in Deldenerbroek (municipality of Ambt Delden). The flint was therefore not discovered *in situ*; the sand on the Zomerweg has come from sand-pits within the municipality of Ambt Delden however.

The flint is now the property of the *Oudheidkamer Twente*, and the inventory number is 1971-6. It has been published preliminary by Verlinde (1975).

Measurements of the point:

Maximum length	: 8.85 cm
Maximum width	: 5.79 cm
Maximum thickness	: 1.24 cm
Width in the middle	: 4.8 cm
Distance between point of maximum width and base	: 2.5 cm
Angle of side-edges:	
right (of face I)	: c. 45°
left	: c. 40°
Weight	: 69.2 g

On face I a large part of the cortex is preserved (thin, densely pitted surface with wind-gloss) and on surface II various frost-split faces predating manufacture; it is therefore evident that the implement is not made on a flake but on a frost-split piece of flint.

The implement is bifacially worked round almost

all the edges, and the base is also a cutting edge. An especially interesting feature is that of the flake-scars from the base on surface II, which were probably designed to make that part thinner (see the longitudinal section), for example to facilitate hafting. The implement is not symmetrical: one side is convex while the other has been worked to make it concave. There is no true point, but this may have disappeared as a result of blunting during soil movements such as cryoturbation or gelifluction, which in view of the various surface modifications present must have affected this flint appreciably.

Since the pointed part is rather thin in longitudinal section, the preferable term for this implement is probably that of point (see also Ulrix-Closset, 1975), but it is also possible to classify the implement as a *racloir convergent* (Bordes, 1961).

If the two retouched sides were to be extended, then they would meet at an angle of approximately 60°.

There are no recent damaged patches, but several subrecent, which give the impression that the raw material is grey, homogeneous and fine-grained flint. Under the cortex there is a darker zone, up to ± 5 mm in thickness.

The entire flint is covered by brown patina and wind-gloss. Both of these surface modifications are developed to approximately the same degree on both faces. A subrecently damaged patch near the base shows wind-gloss but hardly any brown patina, indicating that the brown patina may predate the wind-gloss on this flint.

Especially on surface II, though also on surface I, many small pits are present which are clearly visible to the naked eye. Along the edges extensive "retouch" is visible, attributable to cryoturbation and/or gelifluction; in some places small "teeth" have also been formed here and there along the retouched sides (see Adrian, 1948).

Several scratches can be seen with the aid of the stereo microscope. In addition there are relatively many pressure cones present, especially along the sides. Ridges and side-edges are clearly rounded (presumably due to solution).

The natural surface modifications present on this implement are, to sum up: wind-gloss, brown patina, "cryoturbation retouch", pressure cones, small pits, scratches, rounding.

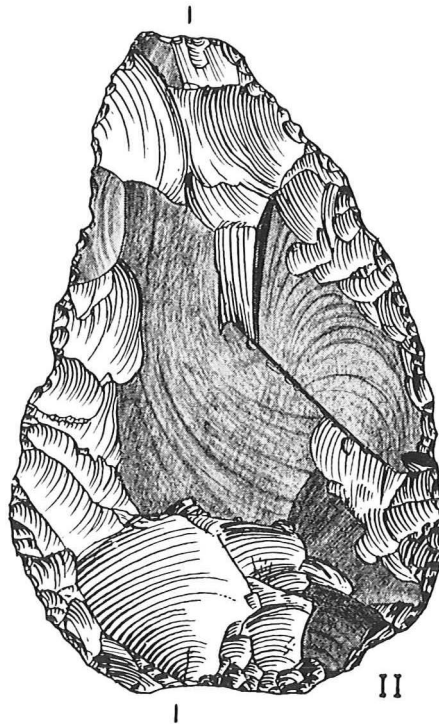
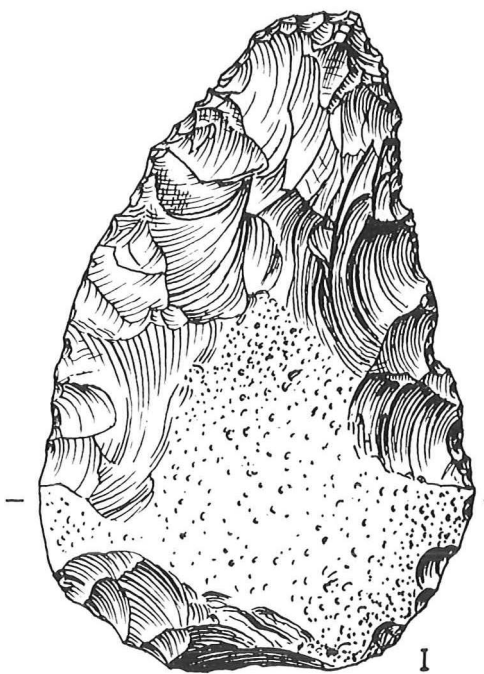
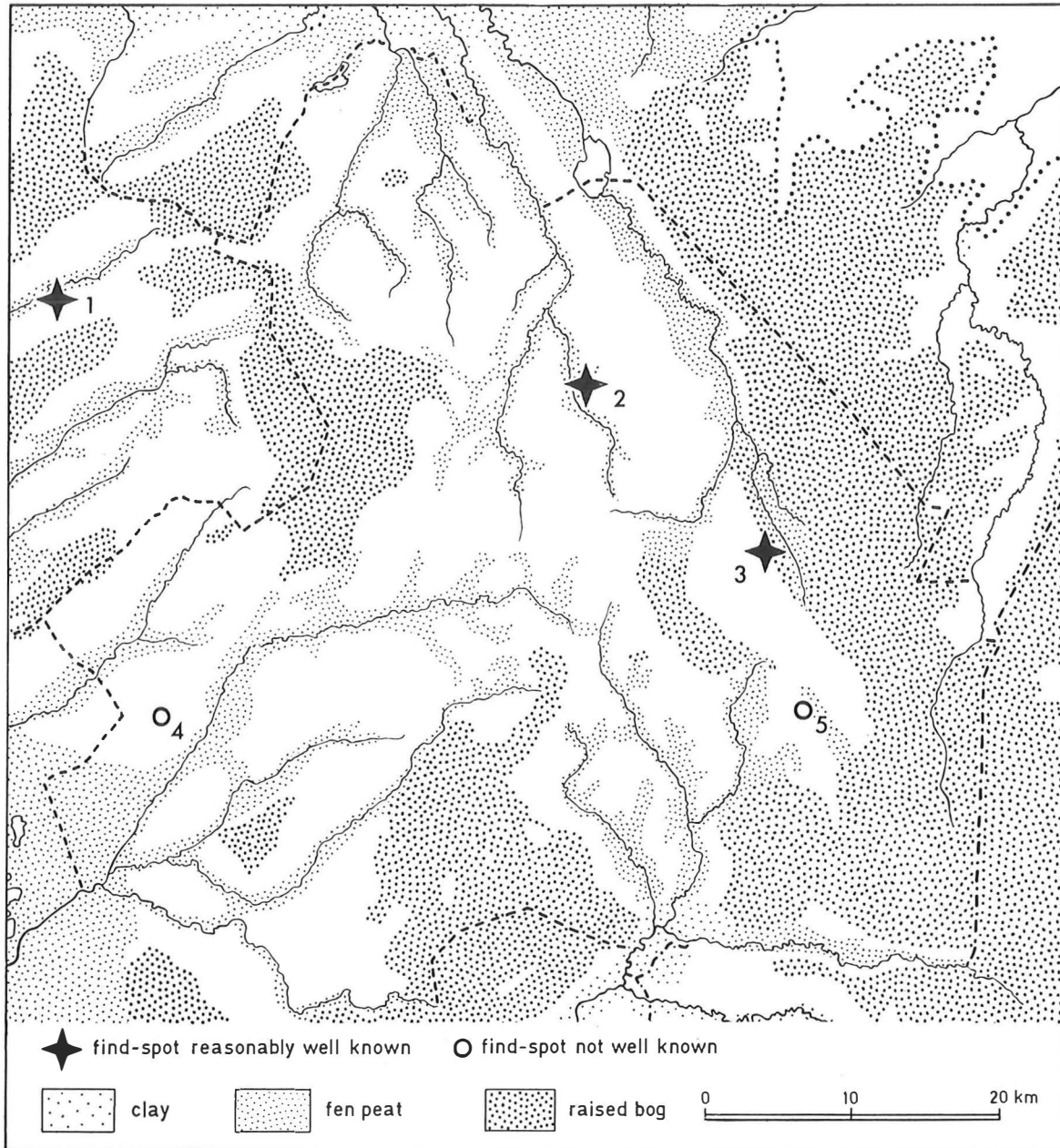


Fig. 10. The point (or *racloir convergent*) from Deldenerbroek (province of Overijssel). Photograph by F. W. E. Colly, B.A.I., Groningen, Scale: 1:1.

Fig. 11. The point (or *racloir convergent*) from Deldenerbroek (province of Overijssel). Drawing by H. R. Roelink, B.A.I., Groningen, Scale: 1:1.



3. GEOGRAPHICAL DISTRIBUTION OF THE FINDS

In figure 12 are shown the find-spots of the implements described above, except for the implement from Deldenerbroek.

It is striking that in those cases where the find-spots are reasonably well known, all the finds came to light along valley fringes. This in itself is not necessarily significant. Not only is the number

Fig. 12. Geographical distribution of 5 Middle Palaeolithic finds from the Northern Netherlands. Not shown is the (unknown) find-spot of the point from Deldenerbroek (province of Overijssel). 1. Hand-axe from Wijnjeterp; 2. Hand-axe from Anderen; 3. Hand-axe from Exloo; 4. Point from Havelterberg; 5. Side-scraper from Emmen. Drawing by H. R. Roelink, B.A.I., Groningen.

of finds too few in that respect, but also the fact that boulder-clay often occurs relatively close to the surface along valley fringes means that in general there is a greater chance of finding any Middle Palaeolithic artefacts there than else where. At the same time an association between Middle Palaeolithic objects and valley fringes seems to be a fairly common situation, also in the case of finds from the southern part of the Netherlands (Stapert, 1975C; 1976B).

4. SUMMARIZING REMARKS ON TYPOLOGY AND DATING

There is little point in discussing the typology of the artefacts in detail. The finds are too few in number for this purpose. Moreover, all of them are isolated finds, while there is no guarantee that they are more or less synchronous.

All that can be said is that several finds (notably the hand-axe from Anderen, but also the point from Havelterberg) can be assigned with a fair degree of certainty to the Mousterian (in the case of the triangular hand-axe from Anderen, to the *Mousterien de tradition acheuléenne, type A* of Bordes, 1968). There is no evidence to suggest that the other finds could not be interpreted as such, and these in any case belong fairly certainly to the Middle Palaeolithic. The hand-axe from Wijnjeterp does admittedly make a somewhat "primitive" impression, for which reason it is attributed by some to the Young Acheuléen (Bosinski, 1967), but this could largely be due to the poor quality of the flint nodule from which this implement was made. It can therefore be said that at the moment there is no convincing evidence to permit the assumption of the presence of material older than Middle Palaeolithic.

This presumably means that we do not have at our disposal any clear indications of occupation before the beginning of the last glacial (see however Bosinski, 1963; 1967).

This provisional conclusion does not contradict the assumed geological position of the finds, i.e. that they come from the boulder-sand. Although the possibility cannot be ruled out that the boulder-sand was formed already to a limited extent during the last part of the penultimate glacial and the last interglacial (Maarleveld, 1960), most

authors appear to agree that this deposit dates mainly from the last glacial (e.g. Cnossen and Zandstra, 1965; Veenenbos, 1954).

In view of the fact that in any case one of the finds (the hand-axe from Anderen) can almost certainly be regarded typologically as dating from the first half of the last glacial (Bordes, 1968), this period seems to be the most probable dating that can be given at present for the material discussed in this article.

This hypothesis is further supported by the circumstance that several find-spots are situated along valley fringes: the present valley-system on the plateau of Drente originated for a great part during a period of erosion in the beginning of the last glacial (Ter Wee, 1966).

During the cold stadials there would not have been enough food in this region to support the large mammals hunted by man. In view of this fact, we can assume that Middle Palaeolithic people were here during one or more interstadials. In connection with the seasonal migrations of some of these animals (e.g. reindeer and mammoths), it is reasonable to assume that hunters occupied this region especially during the summer.

5. FORGERIES

Since 1965 a great number (more than 1000) of flints having a "Middle Palaeolithic" appearance have been displayed by an amateur archaeologist, Mr. T. Vermaning (of Assen). Several "find-spots" for these finds were designated by him in the provinces of Drente and Friesland. Two find-spots near Hogersmilde (province of Drente) are alleged to have yielded more than 100 artefacts, including hand-axes (Van der Waals and Waterbolk, 1973), and one find-spot near Hijken (province of Drente) more than 400 artefacts, likewise including hand-axes. These two collections were purchased by the province of Drente (on behalf of the Drents Museum in Assen), and by the *Stichting Nederlandsch Museum voor Anthropologie en Praehistorie* in Amsterdam, respectively.

A third large collection (more than 500 objects, also including hand-axes) is alleged to have been found near Eemster (province of Drente), while

furthermore several dozen artefacts are claimed to have come from various find-spots near Ravenswoud (province of Friesland).

All these objects are forgeries (Stapert, 1975 A & B), and therefore merit no further description here. The decisive evidence for falsification of this material is the total absence of any kind of natural surface modification on those faces which have been produced in the process of manufacture. Yet these are not the only "Palaeolithic" forgeries from this region. Thus there are extensive and well-known series of "Upper Palaeolithic" forgeries in existence, especially from the province of Friesland. These are mostly genuine Upper Palaeolithic blades which have recently been additionally retouched, sometimes into fantastic forms (see examples in Byvanck, 1941; p. 63).

In the *Fries Museum* (Leeuwarden) there are also two other "Middle Palaeolithic" forgeries present. These came from the collection of an amateur archaeologist (Mr. W. Jongepier of Oosterwolde, who died in 1960), which was purchased by the *Fries Museum* in 1959 (Elzinga, 1960). These forgeries are two large "side-scrapers" of apparently Middle Palaeolithic type, fabricated from almost fresh frost-split pieces of flint (fig. 13). These are reported to have been found by Jongepier near Oosterwolde. In this collection there are also many "Upper Palaeolithic" forgeries as well.

Newly-made objects and old objects which have been recently artificially modified can usually be readily recognized as such.

The situation is more problematical in the case of fictitious find-spots. For example, if Middle Palaeolithic material bought in England or France is subsequently claimed to have been found here in this region, it will usually not be possible to recognize such material with respect to its true origin. In view of the fact that trade in archaeological material has clearly been on the increase lately, it is necessary in the case of new finds to exercise the greatest caution.

In cases where the owner of material very rare in this region (such as Middle Palaeolithic artefacts) also possesses objects of highly dubious authenticity and origin in the rest of his collection, any suspicions thus aroused should be mentioned (see e.g. under 2.4.), although it will usually be impossible either to prove or to exclude any fraudulence.



Fig. 13. One of the two large "Middle Palaeolithic scrapers", alleged to have been found near Oosterwolde (province of Friesland), which come from the collection of W. Jongepier. These objects are forgeries. Photograph by F. W. E. Colly, B.A.I., Groningen. Scale: 1:1.

6. PSEUDO-ARTEFACTS

6.1. INTRODUCTION

It is well-known that pseudo-artefacts can most deceptively resemble artefacts retouched by man; frequently difficult problems arise regarding interpretation, especially in the case of isolated finds. It is even true to say that pseudo-artefacts and artefacts cannot always be distinguished with absolute certainty; in such cases any uncertainty felt by the author should be mentioned (see e.g. under 2.3).

The problem is clearly all the more real since it is precisely in the boulder-sand, from which the few Middle Palaeolithic finds from the Northern Netherlands presumably originate, that large numbers of pseudo-artefacts occur (Stapert, 1975D).

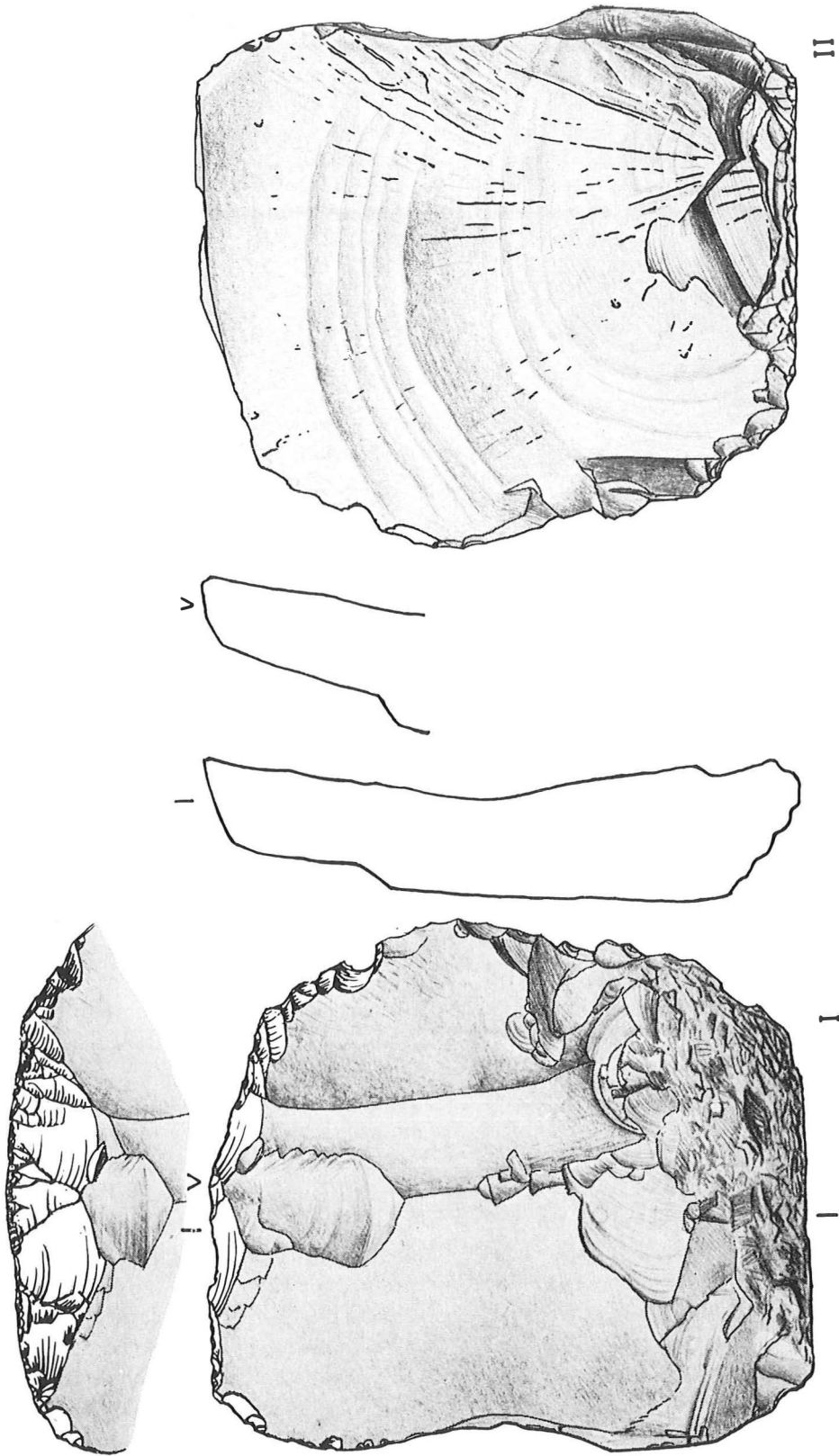


Fig. 14. The object from Ureterp (province of Friesland).
This object is a pseudo-artefact. Drawing by H. R. Roelink,
B.A.I., Groningen.

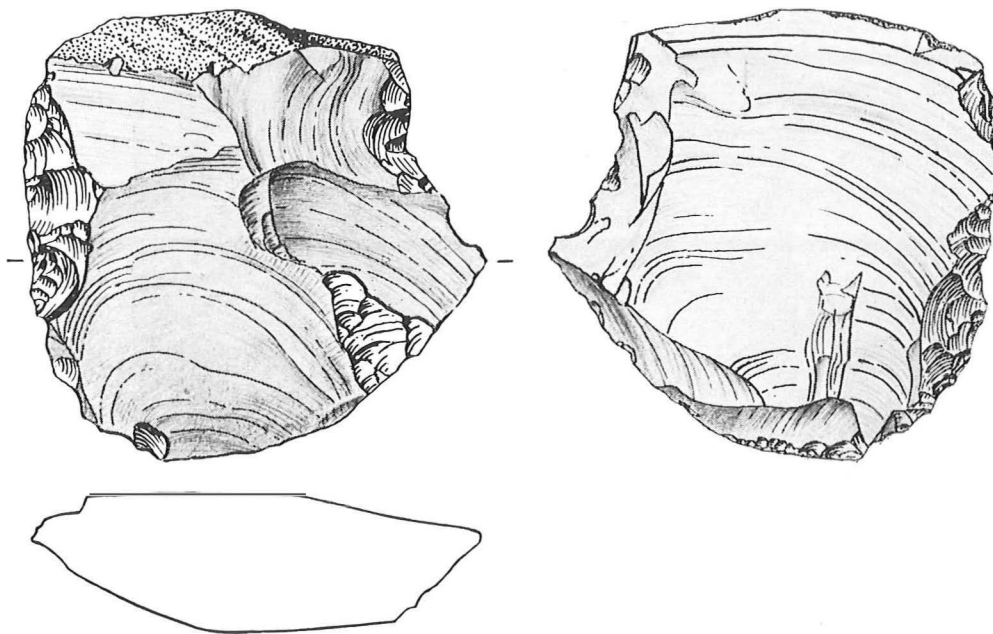


Fig. 15. The object from Fochtelo (province of Friesland). This object is a pseudo-artefact. Drawing by H. R. Roelink, B.A.I., Groningen. Scale: 1:1.

No attention will be devoted here to various unpublished finds which in the author's opinion are clearly pseudo-artefacts, but only to several objects which are mentioned in the literature. Here we shall be concerned with two finds from the province of Friesland, namely those from Ureterp and Fochtelo. Other pseudo-artefacts (resembling Old or Middle Palaeolithic implements) are present among the collection which the Museum in Assen purchased in 1973 from Mr. T. Vermaning. Also the finds from Vollenhove, Oldebroek and Wezep (Bursch, 1939) consist of pseudo-artefacts (Bohmers, 1950; Stapert, 1975D).

6.2. THE OBJECT FROM URETERP

This flint, attributed to the Lower or Middle Palaeolithic, was found by Mrs. J. C. Nieuwenhuis-Fey (of Ureterp) in the neighbourhood of Ureterp (municipality of Opsterland). It has been mentioned by Elzinga (1961; 1962), Van Es (1964) and Waterbolk (1965/1966). The object was found in the course of construction of a road, within the Koningsdiep agricultural reallocation scheme. It is now the property of the Fries Museum in Leeu-

warden, under the inventory number 1961-VII-35. From the character of the rings on face II it is clear that we are dealing here with a natural "flake", so there can be no question of "Levallois technique". These rings are not regularly parallel, but fan out here and there. Moreover they are sharply profiled in cross-section, which is a clear indication of a natural mode of origin (Stapert, 1976, this volume). Furthermore there is a strange ridge running across the place where the percussion bulb should be situated. The larger "flake scars" on the "dorsal side" I are also clearly of natural origin.

At most one could therefore interpret this object as a scraper, made out of a natural frost-split flint. The retouched edge displays a number of characteristics, however, which are strongly indicative of natural processes.

Accordingly there are several scars which begin some distance from the edge (the largest of these is filled in in grey on the drawing), while the rings on these are again sharply profiled. Several other instances of "retouches" appear to be remains of older (later intersected) natural faces. In addition the retouch angle is obtuse here and there (see the cross-sections on the drawing). Also small "teeth" have been formed here and there along the retouched edge.

Furthermore the object displays distinct traces

of extreme natural blunting. Accordingly the "proximal" part of the "dorsal surface" (I) has been severely affected by repeated blunting. Also present are pressure cones, and even series of oblique pressure cones, as well as scratches.

From recent damage it is evident that the raw material consists of grey bryozoan flint. The object is covered with brown patina and wind-gloss (of variable intensity).

Another pseudo-artefact also originates from the same find-spot (Fries Museum, inventory number 1961-VIII-25e).

6.3. *THE OBJECT FROM FOCHTELOO* (fig. 15)

This object, described as Mousterian-like, was found by J. Boschker in the neighbourhood of Fochteloo (municipality of Ooststellingwerf). It has been mentioned by Elzinga (1965) and Appelboom (1969). The object is the property of the Fries Museum in Leeuwarden; the inventory number is 1965-VII-45.

The character of the rings on face II make it clear that we are concerned here with a natural "flake": the very abundant rings are not regularly parallel, but fan out here and there. Moreover they are sharply profiled in cross-section, a distinctive feature of both frost-splitting and pressure-splitting (Stapert, 1976, this volume). In addition there is a curious ridge running across the place where one would expect the percussion bulb to be; this phenomenon was described previously by Adrian (1948) as occurring often on natural "flakes". The "scars" on face II are also of natural origin.

The problem still arises here as to whether we are possibly dealing with a natural frost-split flint retouched by man.

The "retouches" present do not however provide any evidence in support of this idea. Some begin in the middle of the face. In addition small "teeth" are present and alternating retouch along one and the same edge. We are therefore concerned here with a pseudo-artefact.

The object consists of light-grey, patchy fine-grained flint. It is covered with gloss patina. A remaining fragment of the thin white cortex is present.

Rather many scratches are present. Some are "segmented"; sometimes the scratches are accompanied by traces of damage on the surface. "Bundles" of fine subparallel scratches also occur. In addition pressure cones are present.

There are very many small patches of "friction gloss" present. These occur mostly in small groups, in which the individual patches run parallel to one another. Friction-gloss also occurs in the form of parallel stripes over the surface. Furthermore, the edges of some scratches are shiny to some extent.

7. OTHER PROBLEMATICAL OBJECTS

7.1. *INTRODUCTION*

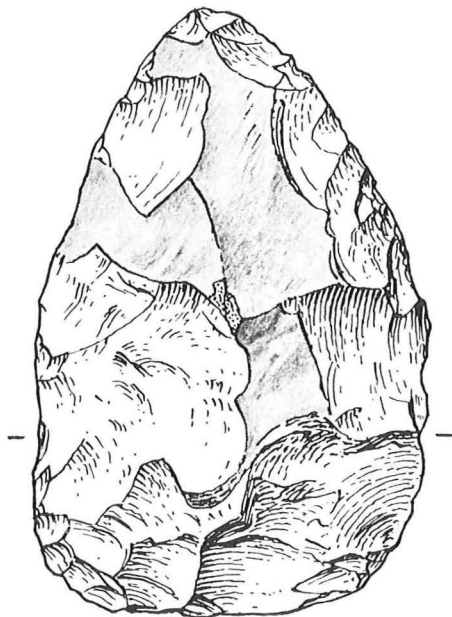
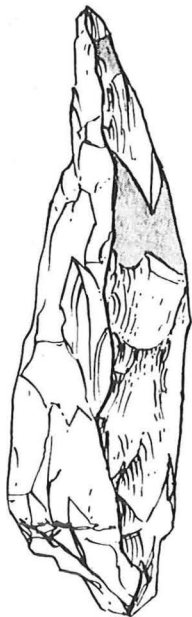
Two categories of finds are involved here. One of these includes objects which have a Lower or Middle Palaeolithic *habitus* but which most probably have their origin in more recent periods, namely the Mesolithic or Neolithic. The second category comprises objects which are indeed Old or Middle Palaeolithic, but which are incorrectly assumed to have originated in the Netherlands.

It has long been known that Neolithic flint material, especially that from the flint mines of South Limburg, includes objects which could easily be regarded from a typological viewpoint as Lower or Middle Palaeolithic (an early reference to this problem is to be found in Oppenheim, 1947). This problem is still very real today. The best clue is usually the degree of patination and other natural surface modifications on the flints. Neolithic material, for example, often displays white patina and rust patches, but almost never wind-gloss, rounding of ridges, or marks resulting from soil movements. This problem also prevails in the Northern Netherlands. Only one example will be dealt with here, namely the hand-axe-like object from Rolde (province of Drente).

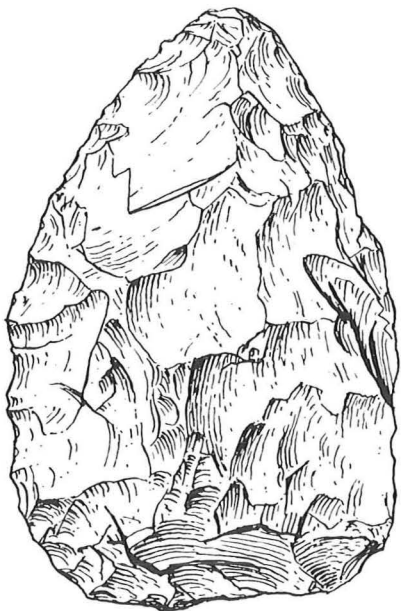
A separate problem is posed by the two hand-axes alleged to have come from Bathmen (province of Overijssel). It is now fairly certain, however, that these did not originate in the Netherlands.

7.2. *THE OBJECT FROM ROLDE* (PROVINCE OF DRENTE)

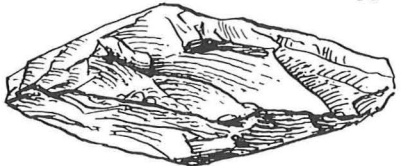
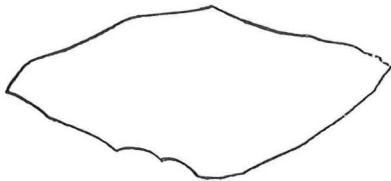
This hand-axe-like object was found c. 1923 by



I



II



J. Luinge in a sandy area "south-west of Rolde, to the east of the Rolde-Nijlande road". The object was mentioned by Van Giffen (1924), whose remarks include the following: "... small hand-axe, Mousterian-like in appearance, presumably a Neolithic spear-point from the Megalith era (Neolithic III)". It is the property of the Drents Museum in Assen under the inventory number 1923/X.27.

Measurements of the object:

max. length	: 8.10 cm
max. width	: 5.07 cm
max. thickness	: 2.23 cm
width in middle	: 5.06 cm
width at 1/4 distance from top	: 3.66 cm
width at 1/4 distance from base	: 5.02 cm
distance from base to point of max. width	: 3.7 cm
distance from base to point of max. thickness	: 2.4 cm
thickness in middle	: 2.05 cm
edge angles (averaged)	: c. 55°
weight	: 84.6 g

Indices according to Bordes (1961):

L/a	: 2.19
n/m x 100	: 99.8
L/m	: 1.60
m/e	: 2.27

The flint is opaque, fairly heterogeneous and coarse-grained. It must have been difficult to work in view of the rather irregular flake scars and the relatively many step-fractures, on account of which the object gives the impression of being rather crude. The implement is somewhat curved longitudinally. Most of the flake scars are smooth with diffuse percussion bulb impressions, indicating that soft percussion technique was applied. The base has been worked into a cutting edge.

◀ Fig. 16. The hand-axe like object from Rolde (province of Drente). This implement dates not from the Middle Palaeolithic, but from a far more recent period, e.g. from the Neolithic. Photograph by F. W. E. Colly, B.A.I., Groningen. Scale: 1:1.

◀ Fig. 17. The hand-axe-like object from Rolde (province of Drente). This implement dates not from the Middle Palaeolithic, but from a more recent period, e.g. the Neolithic. Drawing by H. R. Roelink, B.A.I., Groningen.

On face I there is a small remaining fragment of cortex (thin, glossy, pitted), under which a somewhat darker brown zone is present. In addition there are some faces which should most probably be regarded as frost-split faces predating manufacture of the implement (filled in in grey on the drawing). There are no signs of recent damage. The surface is lightish brown in colour, except for several localized light-grey patches (surrounded by a darker brown zone). This indicates that the brown colour cannot be brown patina, but is rather the natural colour of the flint. Furthermore the object makes a very fresh impression too: there is no wind-gloss, the ridges are still very sharp, there are neither surface phenomena indicative of soil movements nor is there any "cryoturbation retouch". The flint contains many dark-brown inclusions which appear to be of organic origin; these are not weathered where they are exposed on the surface.

It is concluded from the above that the object cannot possibly be of very great age, and therefore cannot possibly be Middle Palaeolithic. The finder and the find-circumstances do not give reason to doubt the authenticity. It may perhaps date from the Mesolithic or Neolithic, but typologically this seems rather implausible, although hand-axe-like forms do occur also in the extensive Neolithic flint material from the vicinity of the flint mines in South Limburg.

7.3. *THE "TWO HAND-AXES FROM BATHMEN"*
(PROVINCE OF OVERIJSEL)
(figs. 18-21)

The two hand-axes alleged to have come from Bathmen, near Deventer, have already been mentioned many times in the literature (e.g. with illustration: Byvanck, 1941; Bursch, 1939; Butter, 1931). In some instances also some mistrust has been expressed with regard to their origin (De Laet and Glasbergen, 1959; Verlinde, 1975).

According to the published reports and the inventory notes in the British Museum (where the objects have been since 1871), they were found in 1860 during the uprooting of a tree. Subsequently they are said to have found their way into the collection of Prof. J. G. S. van Breda, and later, via

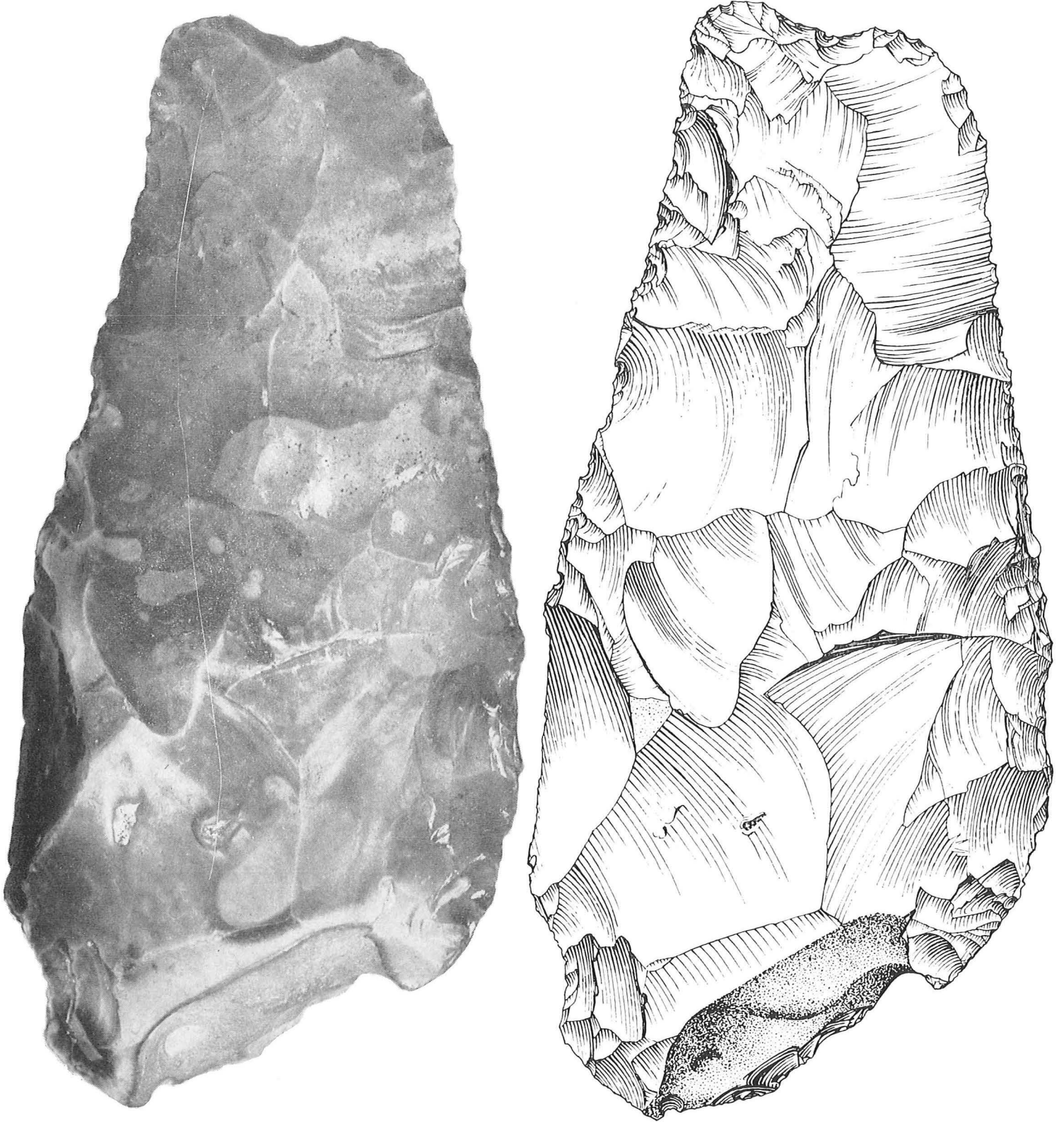


Fig. 18. One of the two-hand-axes, alleged to have come from Bathmen (province of Overijssel), but which cannot have originated in the Netherlands. They probably come from St. Acheul in France. Photograph by British Museum, London. Scale: 1:1.

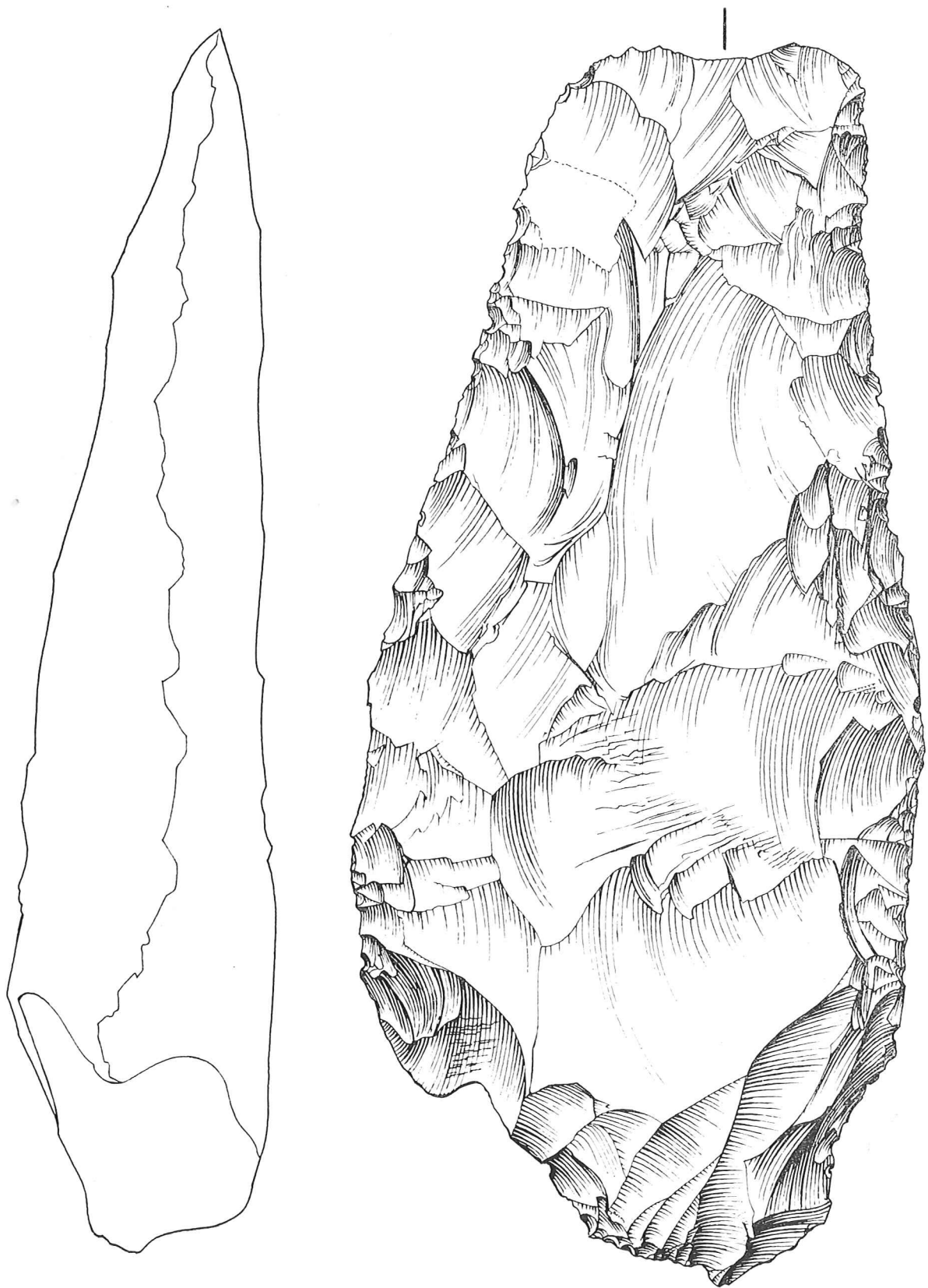
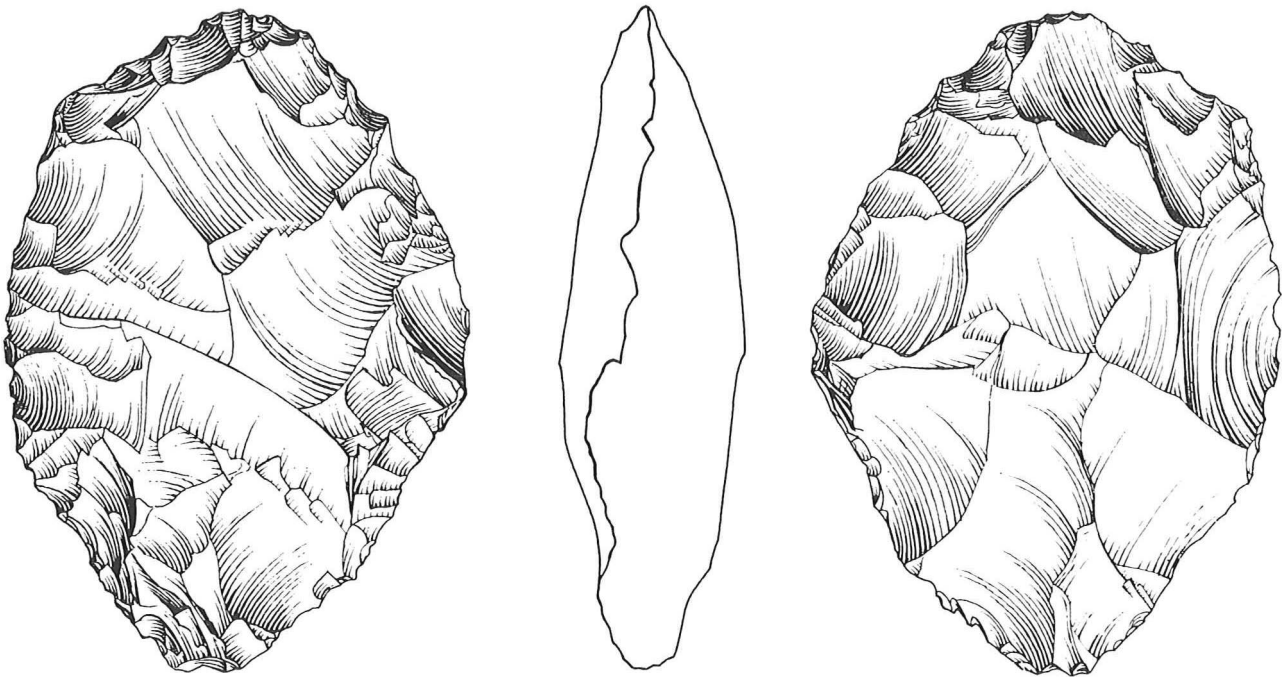


Fig. 20. One of the two hand-axes, alleged to have come from Bathmen (province of Overijssel), but which cannot have originated in the Netherlands. They probably come from St. Acheul in France. Drawing by British Museum, London. Scale: 1:1.

Fig. 19. One of the two hand-axes, alleged to have come from Bathmen (province of Overijssel), but which cannot have originated in the Netherlands. They probably come from St. Acheul in France. Photograph by British Museum, London. Scale: 1:1.

Fig. 21. One of the two hand-axes, alleged to have come from Bathmen (province of Overijssel), but which cannot have originated in the Netherlands. They probably come from St. Acheul in France. Drawing by British Museum, London. Scale: 1:1.



Mr. A. W. Franks, into the possession of the British Museum, where they now form part of the Christy collection (BM inv. nrs. POA. 197. 1 and 2).

The objects concerned comprise a large and a small hand-axe (see figs. 18-21)*. The small hand-axe is difficult to classify, but the large one appears to be clearly assignable to the Acheulean.

Prof. van Breda was formerly curator of the Teyler's Museum in Haarlem. Mr. J. G. de Bruyn, who is now employed there, was kind enough to search through the archives, at my request, for any information on these two objects. It was evident, however, that no documents, letters or inventory notes are available concerning these hand-axes. Nor does the British Museum possess any other documentation than the mention in the inventory note of the fact that these two objects are said to have found in 1860 near Bathmen. Furthermore, on both objects is written in pencil: "Holland?".

Mr. de Bruyn did however find an article of Prof. van Breda in which some reference is made relating to an object from Bathmen (1861). In this article he describes, among other things, how he collected several dozen hand-axes at St. Acheul near Amiens in 1860. He goes on to say that these hand-axes "...originate from a far more backward people than do the chisels, which one finds in great numbers on the surface of the soil, and which are polished, (as) ... will be evident from a comparison with one chisel from this region, which was found last year at Battum near Deventer during the uprooting of a tree ..." (italics mine).

From this it is evident that in 1860 at Bathmen (= Battum) one, polished, object was found. That would most probably have been a polished Neolithic axe. The two hand-axes, now in the British Museum, presumably originate from St. Acheul.

There is therefore little point in describing these objects here in detail. In the cavities of these objects some light-coloured sandy loam is still present, and there are some indications of fluvial action (rounding of ridges, and collision cones). For the rest, the fine illustrations of the British Museum must here suffice.

* The drawings and photographs were made available for publication by kind permission of the Trustees of the British Museum.

8. SUMMARY

The Middle Palaeolithic is so far only poorly represented in the Northern Netherlands. There are 6 known finds, namely: 3 hand-axes (1 *ovulaire*, 1 *triangulaire* and 1 *ovulaire/subcordiforme*), 1 Mousterian point or *racloir convergent* (made from a frost-split piece of flint), 1 Mousterian point or *racloir convergent* (made from a flake) and 1 *racloir convexe* (also made from a frost-split piece of flint). All these are isolated finds, not found *in situ*.

On the basis of their typology these artefacts can best be assigned to the Mousterian; more specifically the *Mousterien de tradition acheuléenne* of Bordes (1968) may be present, in view of the triangular hand-axe from Anderen.

From a geological point of view these finds probably date from (one or more interstadials during) the first half of the last glacial, for they presumably come from the so-called boulder-sand, an outwash residue of the boulder-clay (ground moraine from the penultimate glacial), which may have been formed especially during the last glacial.

As to the geographical distribution, it is notable that the artefacts whose find-spots are reasonably well-known all came to light along valley fringes.

In addition to these 6 finds, this article also describes a number of other objects which have at some time or other been attributed to the Old or Middle Palaeolithic, but which in fact are forgeries or pseudo-artefacts, or finds from much more recent periods, or finds not originating in the Netherlands at all.

REFERENCES

- ADRIAN, W., 1948. *Die Frage der Norddeutschen Eolithen*. Paderborn.
APPELBOOM, TH. G., 1969. Kroniek District A, 1963-1965. *Helinium* 9, pp. 263-292.
BOHMERS, A. & BR. A. Q. WOUTERS, 1954. Früh- und mittelpaläolithische Funde aus den Niederlanden. *Palaeohistoria* 3, pp. 205-217.

- BORDES, F., 1961. *Typologie du Paléolithique ancien et moyen*, I & II. Bordeaux.
- BORDES, F., 1968. *Le paléolithique dans le monde*. Paris.
- BOSINSKI, G., 1963. Eine mittelpaläolithische Formengruppe und das Problem ihrer geochronologischen Einordnung. *Eiszeitalter u. Gegenwart* 14, pp. 124-140.
- BOSINSKI, G., 1967. *Die mittelpaläolithischen Funde im westlichen Mitteleuropa*. Fundamenta A/4, Köln/Graz.
- BREDA, J. G. S. VAN, 1861. Bijdrage omtrent de zoogenaamde beitels van Amiens-Abbeville, in verband beschouwd met het voorkomen van tanden van paarden, zwijnen, herkaauwende en andere dieren, in de krijtbeddingen van den St. Pietersberg bij Maastricht. *Verslagen en Mededeelingen der Koninklijke Akademie van Wetenschappen*, Afdeling Natuurkunde, Deel II, pp. 202-212.
- BRUYN, A. & E. H. BUNTE, n.d. (c. 1961). *Tweeduizend eenwen Nederland*. Den Haag.
- BURSCHE, F. C., 1939. Die vorneolithische Kulturen in den Niederlanden. *Geol. en Mijnb.* 1, pp. 17-35.
- BUTTER, J., 1931. Opmerkingen over "Tardenoisien" in Nederland. *De levende Natuur* 35, pp. 185-192.
- BYVANCK, A. W., 1941. *De voorgeschiedenis van Nederland*. Leiden.
- CNOSSEN, J. & J. G. ZANDSTRA, 1965. De oudste Boorneloop in Friesland en veen uit de Paudorftijd nabij Heerenveen. *Boor en Spade* 14, pp. 62-87.
- ELZINGA, G., 1960. Verslag over de archeologische afdeling. *Verslag van het Fries Genootschap en Fries Museum*, over 1959, nr. 131, pp. 24-31.
- ELZINGA, G., 1961. Ruilverkaveling Koningsdiep. *Nieuwsbulletin Kon. Ned. Oudheidk. Bond* 14, k. 182.
- ELZINGA, G., 1962. Verslag over de archeologische afdeling. *Verslag van het Fries Genootschap en Fries Museum*, over 1961, nr. 133, pp. 28-38.
- ELZINGA, G., 1965. Fochtelloo, gem. Ooststellingwerf. *Nieuwsbulletin Kon. Ned. Oudheidk. Bond* 18, k. 103.
- ES, W. A. VAN, 1964. Kroniek District A, 1960-1962. *Helinium* 4, pp. 242-262.
- GIFFEN, A. E. VAN, 1924. *Verslag van de Commissie van Bestuur over het Provinciaal Museum van Oudheden en Geschiedkundige Voorwerpen in Drente aan de Gedeputeerde Staten over 1923*. Assen, p. 17.
- LAET, S. J. DE & W. GLASBERGEN, 1959. *De voorgeschiedenis der Lage Landen*. Groningen.
- MAARLEVELD, G. C., 1960. Glacial deposits in the Netherlands transformed under periglacial conditions. *Biul. Perygl.* 8, pp. 13-20.
- OPPENHEIM, R., 1947. Oud-Palaeolithicum. *Een kwart eeuw Oudheidkundig Bodemonderzoek in Nederland* (Gedenkboek A. E. van Giffen). Meppel, pp. 125-127.
- STAPERT, D., 1975A. Voorlopig rapport over de steentijdvondsten van Tj. Vermaning. *Westerbeem* 24, pp. 70-75.
- STAPERT, D., 1975B. Preliminary notes on the "Early and Middle Palaeolithic" Finds of Mr. T. Vermaning. *Palaeohistoria* 17, pp. 7-8.
- STAPERT, D., 1975C. Paleolithicum. In: G. J. Verwers (ed.), *Noord-Brabant in pre- en protohistorie*. Oosterhout, pp. 19-38.
- STAPERT, D., 1975D. Eolieten en pseudo-artefakten. *Westerbeem* 24, pp. 239-252.
- STAPERT, D., 1976A. De vuistbijl van Anderen (gem. Anloo) en natuurlijke oppervlakteveranderingen bij vuursteen. *Nieuwe Drentse Volksalmanak* 93, pp. 145-167.
- STAPERT, D., 1976B. De vuistbijl van Eersel. *Brabants Heem* 28, pp. 102-105.
- STAPERT, D., 1976C (this volume). Some natural surface modifications on flint in the Netherlands. *Palaeohistoria* 18.
- TER WEE, M. W., 1962. The Saalian glaciation in the Netherlands. *Med. Geol. St., N.S.* 15, p. 57-76.
- TER WEE, M. W., 1966. *Toelichting bij de geologische kaart van Nederland 1:50,000; Blad Steenwijk Oost (160)*. Rijks Geologische Dienst, Haarlem.
- ULRIX-CLOSSET, M., 1975. *Le paléolithique moyen dans le bassin mosan en Belgique*. Wetteren.
- VEENENBOS, J. S., 1954. Het landschap van Zuidoostelijk Friesland en zijn ontstaan. *Boor en Spade* 7, pp. 111-136.
- VERLINDE, A. D., 1975. Paleolithische gegevens uit Overijssel. *Grondboor en Hamer* 29, pp. 110-122.
- VLIET, H. VAN DER, 1952. Een palaeolithische vuistbijl van Wijnjeterp, Fr. *Publicatie van de Nederlandse Geologische Vereniging* XII, pp. 226-229.
- WAALS, J. D. VAN DER & H. T. WATERBOLK, 1973. The Middle Palaeolithic Finds from Hogersmilde. *Palaeohistoria* 15, pp. 35-120.
- WATERBOLK, H. T., 1965/1966. The Occupation of Friesland in the Prehistoric Period. *Ber. Rijksdienst v.b. Oudheidk. Bodemond*. 15/16, pp. 13-35.
- WATERBOLK, H. T., 1971. Radiocarbon dates from Palaeolithic sites in western Europe, compared with the climatic curve of the Netherlands. In: F. Bordes (ed.), *The origin of Homo sapiens*. UNESCO, Paris, pp. 245-252.