Universiteit Leiden
The Netherlands

Analecta Praehistorica Leidensia 39 / Excavations at Geleen-Janskamperveld 1990/1991

Kamermans, Hans; Velde, Pieter van de; et al., ; Velde, Pieter van de

Citation
Kamermans, H., Velde, P. van de, & Et al.,. (2007). Analecta Praehistorica Leidensia 39 / Excavations at Geleen-Janskamperveld 1990/1991, 278. Retrieved from https://hdl.handle.net/1887/33079

Version:	Not Applicable (or Unknown)
License:	Leiden University Non-exclusive license
Downloaded from:	https://hdl.handle.net/1887/33079

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

ANALECTA
PRAEHISTORICA
LEIDENSIA 39

PUBLICATION OF THE FACULTY OF ARCHAEOLOGY
LEIDEN UNIVERSITY

EXCAVATIONS AT GELEEN-JANSKAMPERVELD 1990/1991

EDITED BY
PIETER VAN DE VELDE

LEIDEN UNIVERSITY 2007

Series editors: Corrie Bakels / Hans Kamermans

Copy editors of this volume: Pieter van de Velde / Hans Kamermans / Medy Oberendorff / Kelly Fennema

Copyright 2008 by the Faculty of Archaeology, Leiden

ISSN 0169-7447
ISBN 978-90-73368-22-4

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

Faculty of Archaeology
P.O. Box 9515
NL-2300 RA Leiden
the Netherlands

12 The Linearbandkeramik settlement at Geleen-Janskamperveld: the adzes

Corrie C. Bakels

The excavation of the Linearbandkeramik site of Geleen-Janskamperveld has revealed 51 adzes or fragments of adzes. Most of these were made of amphibolite or basalt, types of rock which do not occur in the surroundings of the settlement. This observation is in agreement with the early date of the site. The only specimens made of local, siliciclastic materials belong to a second, late phase of occupation. The implements were almost used up before they were discarded, suggesting that the settlement was situated near the end of a down-the-line exchange of adze blades.

12.1 Introduction

The adze was a common tool in Linearbandkeramik (LBK) society. It is a cutting tool with a blade at right angles to the handle. Its blades are found in almost all regions where this neolithic culture flourished. With the axe absent from the LBK toolkit, the adze is interpreted as the wood-cutting and wood-working tool of the time. But an interpretation of the blades as parts of hoes has its adherents as well. Experimental archaeology has proved that the larger blades can be used to fell trees, while the narrow, small ones are handy for finer carpentry (for instance Pleyer 1991). Hoeing gardens with the tool is also possible, though the kind of wear seen on the cutting edge hints not quite at regular contact with soil. However, an intensive study of the wear and tear of LBK adzes has still not been carried out. One of the problems is the weathered surface.

The Geleen-Janskamperveld (Geleen-JKV) excavation revealed 51 specimens of the implements in question. Only two or three of these were complete. Most of the others are represented by fragments, two of which fit together. Four are considered to represent rough-outs or waste from tool-making.

12.2 The raw material

LBK adzes are not made of flint or chert but of a narrow range of crystalline rock types. In the case of Geleen-JKV only three kinds have been used (table 12.1). The most common rock is amphibolite (A), a term used here in its broadest sense. Second come dense basalts (B): fine-grained porphyritic rocks. Only two objects were made of a fine-grained siliciclastic rock (S): a dark-coloured quartzitic rock.

The rocks are of the same types as those described for other settlements in the cluster of LBK sites to which Geleen-JKV belongs (Bakels 1987). This cluster is situated between the rivers Meuse and Geleen in the southeastern part of the Netherlands and is known as the Graetheide cluster. The exact description of the rocks and their provenance is discussed in the publication in question. It should suffice here to repeat that the most likely sources of amphibolite are to be found in central-eastern Europe and that the basalts come from volcanoes in the Siebengebirge and eastern Eifel near Bonn in Germany. The two pieces of siliciclastic rock have most likely been obtained from the gravel in the river Meuse.

There is no trace of the working of amphibolite at the site. All fragments were clearly once part of an implement. This is in agreement with the observations made in the other settlements belonging to the cluster. In a neighbouring cluster, the cluster around the Merzbach on the Aldenhovener Platte in Germany some 30 km to the east, the situation was the same: no working of amphibolite. Adzes of this type of rock obviously arrived in the region as finished blades. But when such blades broke, they were, if possible, reshaped into new, serviceable blades. In Geleen-JKV two instances of attempts to make a new blade out of a fragment are present. The attempts were obviously not successful, because the results were thrown away. The pieces were retrieved from the same pit. The evidence is flimsy, but the pit may have been situated in the working area of somebody adept at reshaping broken adzes.

The local working of basalt is attested by three pieces of the same rock with feature-number 52017. One looks like a rough-out intended for a so-called thick adze, which is a blade with a thickness exceeding its width. Problems with shaping the cutting edge caused the piece to be discarded. The other fragments are just waste. The same number (same feature) includes a butt end of a broken adze made of a different type of basalt. One may wonder whether this butt end was intended to be provided with a new cutting edge. Only it was too short. This pit too may have been lying in the activity area of an adze mender. Signs of basalt working are rare in the region. A comparable rough-out has been excavated in the Belgian site of Rosmeer, a site belonging to

feature	raw material	remains	cer. phase	house generation	Modderman phase
91124	A	fragment	1	1	1b
54029	A	fragment	1	1	1b
54051	A	fragment	1	1	1b
92023	A	butt	2	2	1b
94052	A	complete	2	2	1b
10027	A	fragment	2	2	1b
10038	A	fragment	2	2	1b
10038	A	cutting edge	2	2	1b
58021	A	cutting edge	3	3	1b
14002	A	fragment	4	3	1b
32142	A	complete, secondary	4	3	1b
32142	A	cutting edge, reworked	4	3	1b
49015	A	fragment	4	3	1b
49015	A	cutting edge	4	3	1b
49015	A	cutting edge	4	3	1b
49016	A	fragment	4	3	1b
55003	A	cutting edge	5	4	1c
57020	A	fragment	5	4	1c
91002	A	fragment	–	–	–
91045	A	fragment	–	–	–
92023	A	fragment	–	–	–
41019	A	fragment	–	–	–
15002	A	fragment	–	–	–
22020	A	cutting edge	–	–	–
51615	A	cutting edge	–	–	–
90019	A	complete	–	–	–
92023	A	butt	–	–	–
58017	A	fragment	–	–	–
19078	B	fragment	1	1	1b
31131	B	fragment	1	1	1b
46004	B	cutting edge	1	1	1b
26090	B	fragment	2	2	1b
92001	B	cutting edge	3	3	1b
52017	B	rough-out	3	3	1b
52017	B	rock fragment	3	3	1b
52017	B	rock fragment	3	3	1b
52017	B	butt	3	3	1b
14002	B	fragment	4	3	1b
45004	B	fragment	4	3	1b
49015	B	2 fitting fragments	4	3	1b
33065	B	butt	5	4	1c
44012	B	butt	5	4	1c
46040	B	cutting edge	5	4	1c
58048	B	cutting edge	5	4	1c
40073	B	fragment	6	13/14	2c

feature	*raw material*	*remains*	*cer. phase*	*house generation*	*Modderman phase*
91002	*B*	*cutting edge*	–	–	–
22020	*B*	*complete ?*	–	–	–
24025	*B*	*butt*	–	–	–
28061	*S*	*cutting edge*	*6*	*13/14*	*2c*
94051	*S*	*rough-out*	*6*	*13/14*	*2c*

Table 12-1 The adzes with the numbers of features in which they were found, their raw material and their relative date as regards the ceramic phase, house generation and the LBK phase according to Modderman. A = amphibolite, B = basalt, S = siliciclast.

a cluster southwest of the Graetheide cluster. Another rough-out has been retrieved at Langweiler 2, a site belonging to the Merzbach cluster on the Aldenhovener Platte (Bakels 1987).

The two quartzitic pieces concern one broken-off cutting edge and one rough-out. The latter is made on the basis of a flat pebble.

One of the results of the 1987 study was that the 'choice' of rock type changed with time. Amphibolite was predominant in the first phase (Modderman phase 1) of the occupation of the region. Basalt increased in importance during the first half of Modderman phase 2. Other types of rock became only common in the last phase of the LBK, phase 2d. The ultimate source of rock shifted from far away, to a source at closer distance, followed by a local source. This reflects a shrinking of the social network. The material cannot have been fetched by the inhabitants of the sites in the Graetheide and Merzbach clusters, at least not the amphibolite and probably neither the basalt, but must have been obtained through a system of exchange. It is not a case of people discovering better materials nearby in the course of time. Amphibolite is the best rock to made adze blades from, because it is the toughest of the three rock types. Quartzitic material is the worst because, relatively, it is the most brittle.

The pattern is also seen in Geleen-JKV. It is striking that the two siliciclastic implements are both dated to Modderman phase 2c, when the location was re-occupied after a time gap. The principal remains belong to phase 1b and 1c. The population of this early settlement used exclusively amphibolite and basalt. Geleen-JKV differs from the other settlements in the Graetheide cluster in that the proportion of basalt is much higher than expected. In its proportions of 56% amphibolite and 44% basalt, the site resembles the Merzbach cluster. In most of the Graetheide settlements amphibolite is absolutely predominant during phase 1 (fig. 12.1). Nevertheless, when the occupation at Geleen-JKV is divided into its four house generations, a tendency towards an increase in the use of basalt through time can be observed (table 12.2).

Geleen-JKV phase 1				
house generation	*A*	*A%*	*B*	*B%*
1	*3*	*50*	*3*	*50*
2	*5*	*83*	*1*	*17*
3	*8*	*57*	*6*	*43*
4	*2*	*33*	*4*	*67*
total phase 1	*18*	*56*	*14*	*44*

Table 12-2 The raw materials present in the four house generations belonging to Modderman's phase 1.

12.3 THE TOOLS

Only two blades are complete (fig. 12.2). Both are made of amphibolite. One, no. 90019, has a length of 64 mm, a width of 36 mm and a thickness of 12 mm. It is a flat type of adze blade. The other, no. 94052, has a length of 68 mm, a width of 39 mm and a thickness of 22 mm. The greatest thickness is reached at the beginning of the part bearing the cutting edge, suggesting that this blade may originally have been thicker and longer. The blade must have been resharpened several times, decreasing in length in the process. It is a blade of the type 'thick adze' as defined in Bakels 1987.

A third blade, no. 32142, is made out of a fragment of another blade. Its length is 58 mm, its width 31 mm and its thickness 11 mm. Its contour is rather irregular, but it will have served as a flat adze (fig. 12.2d). A fourth blade, no. 22020, may have served in the state in it was found but may also have been discarded after breakage. The butt end looks as if it has broken at the spot where the blade was inserted into the haft. The implement is made of basalt and measures 33 by 14 by 6 mm. It was a slender, small blade.

The remainder of the finds is too damaged to be regarded as serviceable tools. They represent broken-off cutting edges, splintered blades and short butt ends. Most of the small splinters are of amphibolite. Block-like fragments mainly belong to basaltic implements. The manner of breakage reflects the raw material. Amphibolite is apt to splinter, basalt to fragment into pieces.

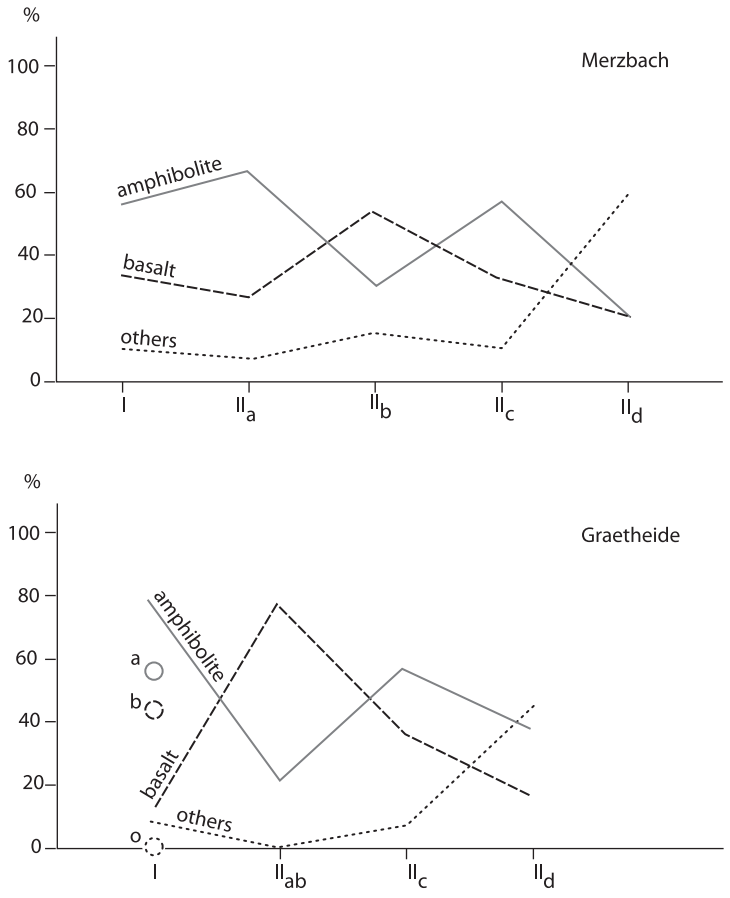

Figure 12-1 The relation between rock-type and phase in the Merzbach and Graetheide clusters after Bakels 1987. Data from Geleen-JKV added; a = amphibolite, b = basalt, o = others.

Fragments with traces of perforation are absent.

One piece deserves special attention. It is a long, central part of a thick adze made of amphibolite, no. 10038. Its length is 96 mm, its width 26 mm and its thickness 38 mm (fig. 12.2c). This blade fragment evoques the kind of adzes found in depots, such as the depot of Berg-aan-de Maas, a site belonging to the Graetheide cluster (Bakels/Hendrix 1999). Such depots have been found elsewhere in Europe as well. (Schwarz-Mackensen/Schneider 1983, Vencl 1975) The Berg-aan-de Maas depot is the most western instance of such finds. The exact nature of such depots, religious or connected with trade, is open to debate, but the adzes in them may very well represent the adzes as they arrived, brand-new, from the original source. The large fragment in the Geleen-JKV settlement is the first of its kind in the Graetheide cluster and the Merzbach cluster.

12.4 Adzes and the settlement

The adze remains were present everywhere in the settlement. They formed part of the normal household waste. Even the complete blades have been found among the common rubbish. This is a normal kind of situation and recurring in every settlement excavated sofar. The only aspect that varies is the number of adze fragments. Some settlements are richer than others. The 'wealth' can be expressed in the number of adze remains per house (household). Table 12.3 presents the values for Geleen-JKV and compares them with other relevant sites (data from Bakels 1987). It must be noted that Geleen-JKV has been split up into two settlements, one for the period phases 1b-1c, and one for phase 2c, because of the time gap in occupation.

The original 1987 table showed that settlements are richer when they are smaller. This at least is seen in the case of the Merzbach cluster on the Aldenhovener Platte. The largest settlement had, relatively, the lowest number of adze remains. This site, Langweiler 8, was a distribution site for imported flint (Zimmermann 1982). It may also have been the pivot in the distribution of imported adze blades. The explanation offered for the 'wealth' increasing with the decrease in settlement size, was that the inhabitants of smaller

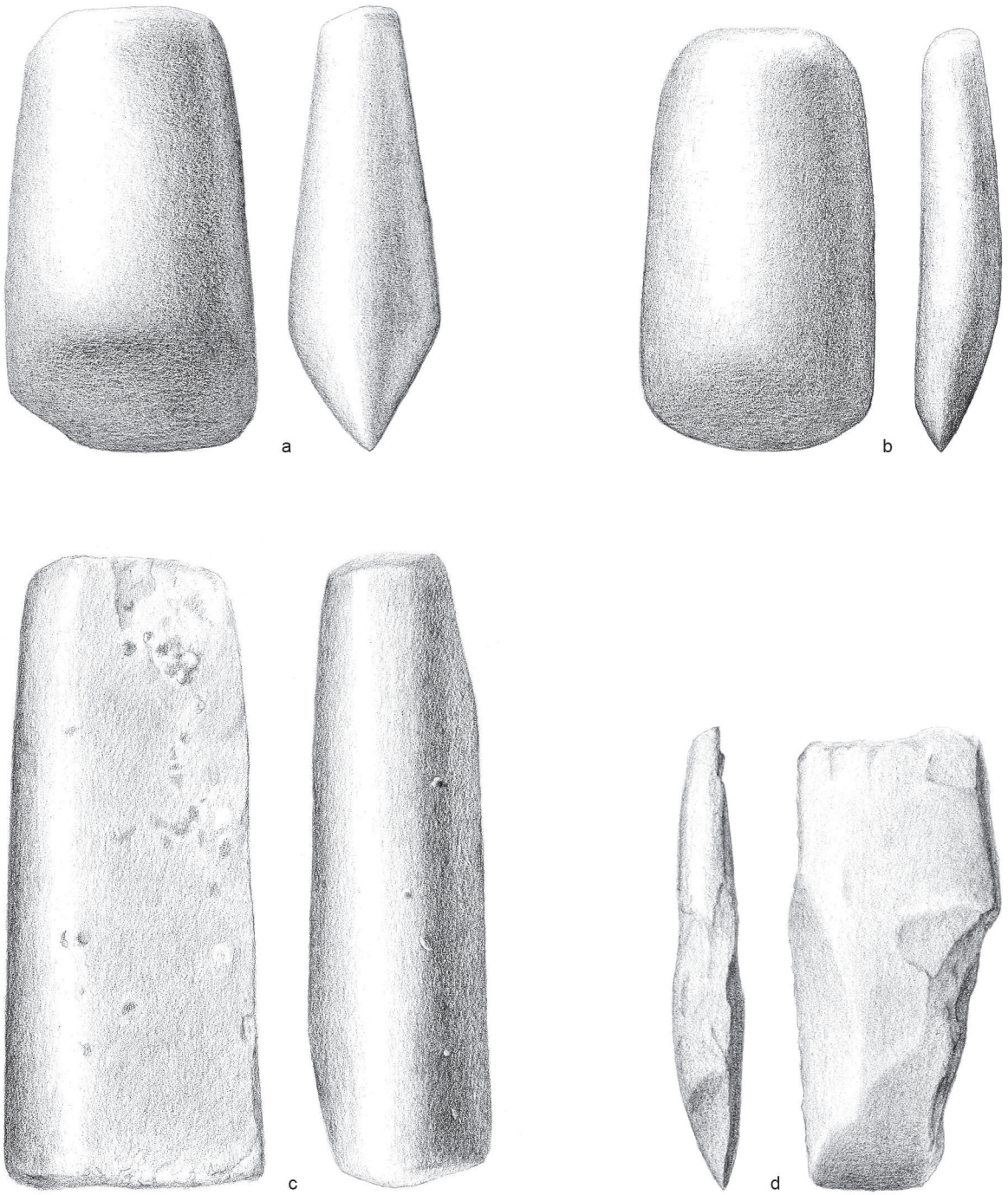

Figure 12-2 Three blades and a blade fragment, scale 1:1. The complete blades (a and b) were drawn after sketches, because the blades were not available anymore at the time of publication. In contrast to the blades of the upper row, those of the lower row are depicted with their side view left of their dorsal view.

	N houses	*adzes/house*
Merzbach cluster		
Langweiler 8	*98*	*0,6*
Langweiler 2	*20*	*1,1*
Langweiler 9	*17*	*1,8*
Laurenzberg 7	*9*	*2,5*
Langweiler16	*3*	*3.0*
Graetheide cluster		
Elsloo	*95*	*0,4*
Geleen-JKV phase 1	*52*	*0,7*
Stein	*49*	*0,4*
Sittard	*48*	*0,5*
Geleen-JKV phase 2	*6*	*0,5*

Table 12-3 The number of adzes per house in the settlements belonging to the Merzbach and Graetheide clusters. Phases are those according to Modderman.

settlements were at the end of the distribution line and had, therefore, more to mend, to reshape and, finally, to throw away.

The settlements in the Graetheide cluster show the same kind of values as Langweiler 8. According to the number of houses they are large. A flaw in the analysis may be that almost all settlements are multi-phase sites. Splitting-up the data according to the different occupational phases has shown, however, that the results do not alter. This is also seen in Geleen-JKV. The wealth of the second occupation is not so very different from that of the first. Nevertheless, with a value of 0.7, the first is the 'richest' of the Graetheide cluster. This may imply that this first phase of occupation was rather dependent on an influx of adze blades coming from a more dominant site. The underlying cause may be the dependence on distribution sites east of Geleen in Germany, presumably in the Neuwiederbecken, where LBK sites have been found which may represent the ancestors of the Geleen site. But this is mere speculation at the moment. The flow of ready-made adze blades deserves a more detailed study.

C.C. Bakels
Faculty of Archaeology, Leiden University
PO Box 9515
2300 RA Leiden
The Netherlands
c.c.bakels@arch.leidenuniv.nl

12.5 Conclusion

The adzes and adze fragments retrieved during the Geleen-JKV excavation support the general picture that the blades in this part of the LBK world were made of rock with a foreign origin. They were presumably obtained through exchange. Geleen-JKV may have been dependent on an intermediary group based in Germany. The settlement may have been situated at the end of a down-the-line exchange of amphibolites and basalts.

Only in the second, late phase of occupation local material has been considered as material to work into adze blades.

Adzes were almost used up before discarding. When possible, broken specimens were reshaped into a serviceable implement.

References

Bakels, C.C. 1987. On the adzes of the northwestern Linearbandkeramik. *Analecta Praehistorica Leidensia* 20, 53-85.

Bakels, C./W. Hendrix 1999. Ein bandkeramisches Dechseldepot aus Stein-Berg aan de Maas, Niederlande. *Archäologisches Korrespondenzblatt* 29, 317-323.

Pleyer, R 1991. Holzbearbeitung mit altneolithischem geschliffenem Steingerät. *Experimentelle Archäologie, Archäologische Mitteilungen aus Nordwestdeutschland* Beiheft 6, 227-230.

Schwarz-Mackensen, G/W. Schneider 1983. Fernbeziehungen im Frühneolithikum. Rohstoff-versorgung am Beispiel des Aktinolith-Hornblendeschiefers. In: *Frühe Bauernkulturen in Niedersachsen*, Oldenburg, 165-176.

Vencl, S. 1975. Die Hortfunde neolithischen geschliffenen Steingeräts aus Böhmen. *Památky Archeologické* 66, 12-73.

Zimmermann, A. 1982. Zur Organisation und Herstellung von Feuersteinartefakten in bandkeramischen Siedlungen. In*: Siedlungen der Kultur mit Linearkeramik in Europa*, Nitra, 319-322.