

HUNEBED G2: EXCAVATION AND FINDS

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ABSTRACT: The remains of a levelled *hunebed* with seven pairs of sidestones were excavated during the winter 1969-1970. Almost all structural parts had been removed or destroyed, but the contents of the chamber remained in situ, although fragmented. A large number of (mainly reconstructable) pots, many flint artefacts (arrowheads, *bikkels*, axes) and amber beads were found. In addition, sherds of an EGK amphora, three Bell Beakers and two Bell Beaker knives indicate later activity. A sherd of a *kogelpot* dates the destruction of the *hunebed* to the late 10th or 11th century AD.

KEYWORDS: Northern Netherlands, Neolithic, megalithic monument, TRB pottery, typochronology.

1. INTRODUCTION

The *hunebed* G2 is one of two destroyed megalithic tombs located on the Glimmer Es (municipality of Haren), about 9 km south-east of Groningen, the Netherlands. Both were excavated by J.N. Lanting on behalf of the Biologisch-Archaeologisch Instituut, Groningen, who subsequently published the

groundplans and a small selection of the finds (Lanting, 1974-75). In the intervening period, the flint has been examined by P.H. Deckers (Groningen) as part of doctorate research into Neolithic flint working and a definitive report of the excavation and finds from G3 has been published recently (Brindley, 1983).

2. THE DESTROYED MEGALITHIC MONUMENT

2.1. Discovery and excavation

In 1966 J.E. Musch, an amateur archaeologist, discovered two concentrations of small fragments of stone (chiefly crushed granite), sherds of TRB pottery, flint and fragments of burnt bone in the otherwise stoneless arable of the Glimmer Es (Bakker, 1982-83: p. 183). He identified these correctly as the sites of two destroyed megalithic tombs and duly informed the B.A.I. and the provincial archaeologist for Groningen. In 1969 it was decided to investigate both sites. The remains of the larger *hunebed*, G2, were excavated in the winter of 1969-70 and those of the smaller *hunebed*, G3, in the autumn of 1971.

Hunebed G2 was situated near the highest part of the Glimmer Es (maximum height c. 5.5 m above N.A.P.), in cadastral parcel Haren, Section H4, No. 2834, which at the time was owned by Mr. Kloots and worked by Mr. Scholtens, both of Noordlaren (fig. 1). The excavation took place between 3rd November 1969 and 26th February 1970. Because of hard frost, no work was possible between 9th December and 24th February. The excavation was carried out by K. Klaassens, J.H. Zwier, J.E.

NOTE ON THE FIGURES

The following conventions were adopted for the illustration of the reconstructed pottery:

- solid lines indicate certainty of reconstructed profile;
- broken lines indicate proposed reconstruction of profile;
- solid and heavy lines indicate certainty of reconstruction of decoration;
- fine lines or broken lines indicate proposed reconstruction of decoration;
- relevant sherds are shown on proposed reconstructions;
- sections with applied features (handles, lugs, bosses, cordons, footrings) shown by solid lines indicate certainty of location and reconstruction.

The drawings of the pottery are reproduced at the scale 1:3. The numbers refer to the catalogue. In figures 2 and 3 finds of pottery outside the chamber are indicated by catalogue numbers, as well.

The drawings of the flint and amber objects are reproduced at full scale, with the exception of the axes and axe fragments, which are shown at the scale 2:3. The numbers are the find numbers. Most of these numbers are indicated in figure 4, the remaining ones refer to either stray finds collected before, during and after the excavation (No. 1) or to material found during cleaning of areas larger than 1 x 1 m squares (Nos 20, 21, 37, 59, 60, 61, 67 and 68).

The majority of the pottery was drawn by S.W. Jager. Additional material was drawn by H.R. Roelink, who was also responsible for the illustrations of the flint, for tables 15 and 16, and for numbering and mounting all the figures. The flint axes were drawn by J.M. Smit; the plans are the work of J.H. Zwier.

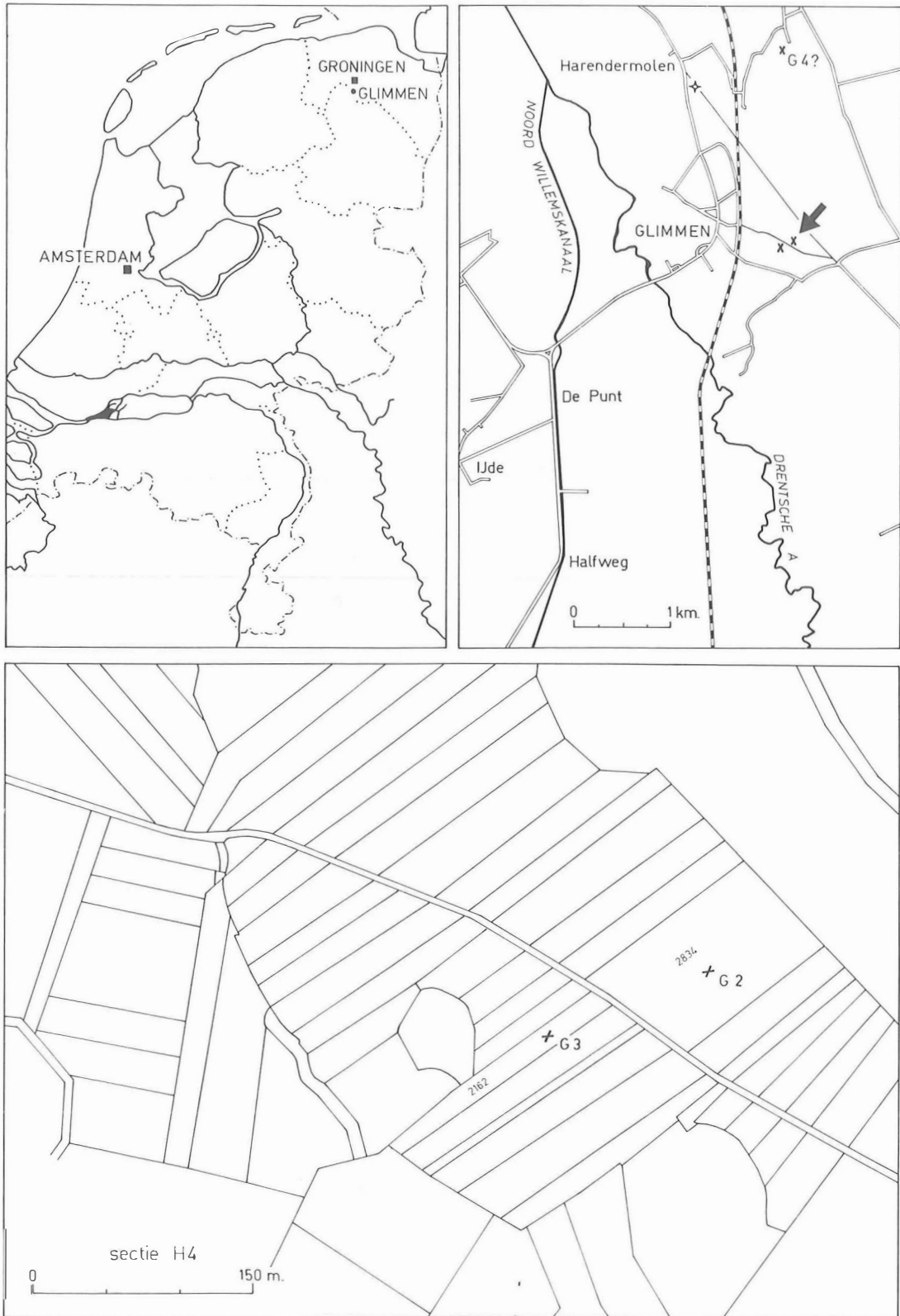


Fig. 1. Location of *hunebed* G2.

Musch, J.E. Heeres, A.E. Lanting and J.N. Lanting.

The remains of *hunebed* G2 appeared immediately under the ploughsoil as an elongated, sub-rectangular pit measuring c. 14 x 5 m, filled with brownish sand, crushed granite, field stones and pieces of larger stones (chamber debris). The surviving grave goods were all found in this material. They were collected by square metre in order to record any possible information about their original place of deposition. The entire layer of chamber debris was sieved through a 6 x 6 mm mesh mounted on a hand driven potato sorter to ensure the collection of even very small artefacts. This proved very effective. Only one tiny amber bead and a fragment of a second were found in the sand under the sieve afterwards. The topsoil was not sieved and therefore a small amount of pottery and flint was not collected. In fact some flint was found afterwards in the redeposited topsoil by the amateur archaeologist E. Ameling (see below).

It was originally intended to excavate the remains of G2 in such a way that profiles through the layer of chamber debris could be examined. Therefore the excavation pit was divided into eight parts by placing a line over the long axis, one over the short axis and two lines parallel to but three metres distant from the last mentioned line. After excavating the first (upper) layer of chamber material in four alternating parts, it became clear that little information could be extracted from the profiles. It was therefore decided to excavate by level. The plan and square numbers (fig. 4) still indicate the original intention.

An approximately oval shaped cutting measuring 22 x 19 m was laid out around the remains of the destroyed chamber. The ploughsoil above the layer of chamber debris was only 0.20 m thick. Along the edges of the cutting this increased to 0.30-0.35 m. The subsoil consisted of stratified sand, the upper 0.30-0.40 m of which had lost its stratification, due to the activities of burrowing animals and the penetration of roots. Originally a podsol profile had been present, but with the exception of the lowest part of the iron pan layer, most of this had been removed by ploughing. Neolithic pits could not be traced in the structureless sand. However, some deeper pits were recognizable in the stratified sand, not because of their colour, but as disturbances in the stratification.

Four levels in the chamber area were planned during the excavation (figs 2 and 3).

Level 1. Immediately below the ploughsoil. Only the outline of the large pit was recorded.

Level 2. At the level of the upper surface of the paved floor, about 15-20 cm below Level 1. Extraction pits with their black, humic filling were clearly visible at this level.

Level 3. Immediately under the floor, c. 16 cm

below Level 2. The extraction pits were much smaller at this depth. Field stones became visible in apparently undisturbed yellow soil around the edges of some of these pits. These were the original packing stones along the edges of the sockets of the orthostats. These sockets were not visible, however, in the unstratified coversand.

Level 4. C. 10 cm below the floor. Most of the extraction pits had disappeared at this level. In some cases, however, a field stone appeared below the extraction pits, in apparently undisturbed yellow sand. These stones were also packing stones in the orthostat sockets.

2.2. The destruction of the chamber

As stated above, the remains of the destroyed chamber appeared immediately below the ploughsoil as an elongated pit filled with dark soil, crushed granite, small pieces of stone and cobbles. It is a well-established fact that the chambers of megalithic tombs of the TRB culture were constructed in pits. The sockets for the orthostats were dug into the base of this pit and lined with a packing of field stones. The gaps between the orthostats were filled with dry stone walling of small stone slabs. The floor of the pit within the chamber was paved with cobbles and then covered with a layer of crushed granite fragments. The chamber was surrounded with a packing of larger stones. Between these stones, the remainder of the foundation pit was filled with a mixture of sand and crushed granite.

Immediately below the ploughsoil, no difference was visible between the areas on either side of the orthostats (i.e. inside and outside the chamber), nor were the extraction pits of the orthostats recognizable. This was largely due to the fact that the top part of the layer of chamber debris contained a lot of dark topsoil, but also because it was impossible to clean this level adequately. The presence of this dark soil was due to infiltration and ploughing. When the chamber debris had been removed down to the level of the paved floor (small parts of which had survived), the original positions of the side-stones became visible as recent pits with a filling of dark, humic soil. These extraction pits cut through the layer of brownish sand, stones, and stone fragments; it was only due to plough damage and humic infiltration that they could not be recognized immediately below the ploughsoil. However, the profiles which were visible briefly during the excavation of the first layer (see 2.1) showed quite clearly that these extraction pits were younger. The orthostats must have been left in situ until most of the stone paving and the packing stones around the chamber had been removed. The removal of the orthostats and the backfilling of their extraction pits must have been the last stage in the destruction and levelling of this megalithic tomb.

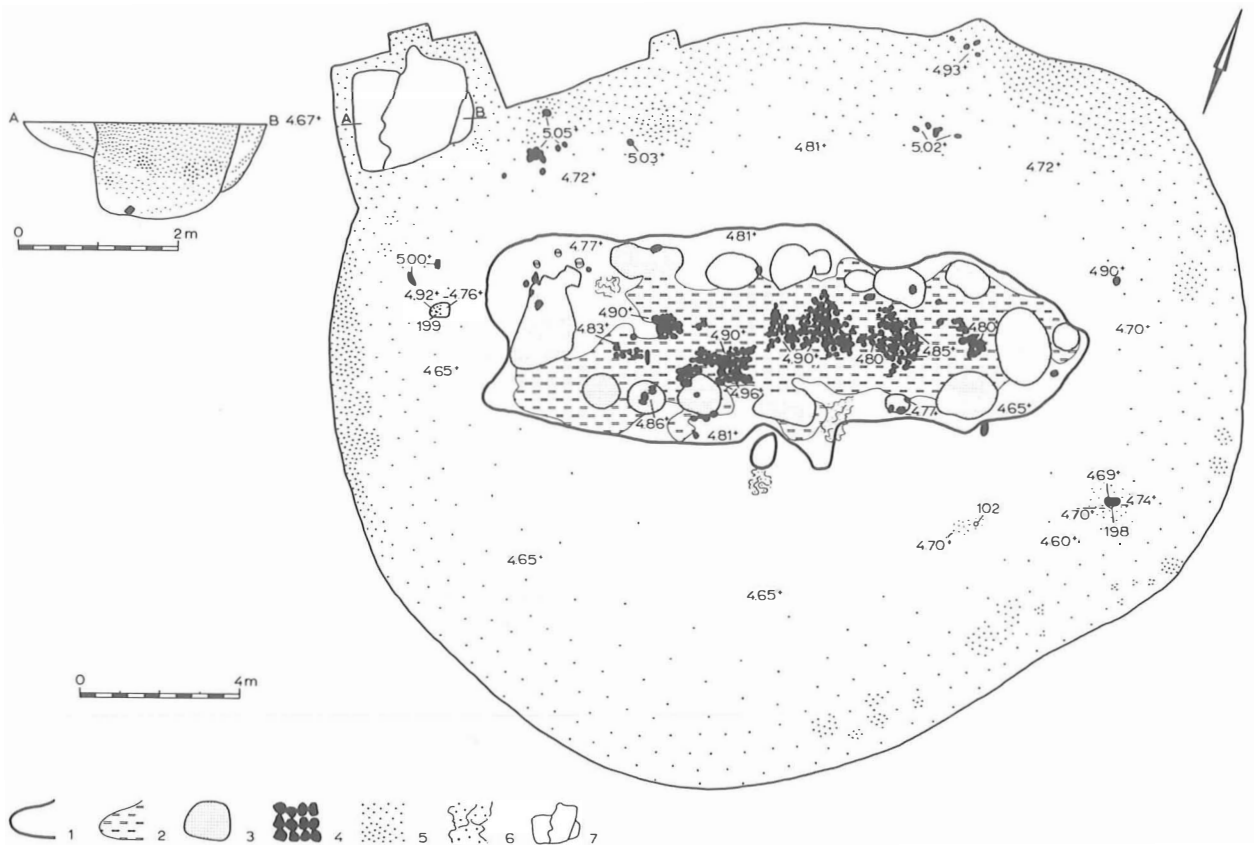


Fig. 2. Groundplan: Levels 1 and 2 combined. Legend: 1. level 1, outline of chamber debris; 2. level 2, chamber debris; 3. extraction pits; 4. floor and packing stones in situ; 5. iron pan infiltration at edge of mound; 6. iron pan with infiltration veins in chamber area; 7. Medieval pit.

A large pit in the extension of the NW side of the excavation cutting is apparently connected with the destruction of the chamber. In fact this consists of two pits, as a large part of the filling of the pit was dug out and backfilled again later. The colour of the filling and the sharpness of the contours indicated that the pits were relatively young and probably of medieval origin. Some field stones and a large fragment of a boulder were found in the filling. The pit may have been dug to bury an orthostat or capstone, or fragments of large stones which were dug out later.

As at G3 (Brindley, 1983) a fragment of a *kogelpot* with simple rim profile (No. 370) which can be dated to the late 10th or 11th century AD, was found amongst the chamber debris. The presence of this sherd almost certainly indicates that G2 was destroyed during this period. The jug (No. 363), described by Lanting (1974-75: p. 172) as medieval, is more probably of TRB origin.

2.3. The chamber

It was stated in the first publication of this excava-

tion that G2 had six pairs of side stones (Lanting, 1974-75). However, on the published groundplan (Lanting, 1974-75: fig. 2), the correspondingly numbered extraction pits do not occur opposite each other, with the exceptions of Z5/Z5' and Z6/Z6'. Since this is unusual for a *hunebed*, the reconstruction must be incorrect. A re-examination of the field drawings by J.N. Lanting (who has been carrying out continuing research into Dutch megalithic tombs in recent years) has shown that G2 had originally seven pairs of side stones. The following reinterpretations can now be put forward.

a) The extension on the northeast side of the extraction pit of S1 1 appears to be the extraction pit of a side stone. The small pits with a gritty filling north of this extension at Level 2 may indicate the positions of packing stones in the socket of this side stone. A field stone was discovered at Level 3 beneath the extension; this was possibly a packing stone at the bottom of this socket. This 'new' side stone should now be numbered Z1 and the pits Z1-Z6 of the first publication (Lanting, 1974-75: fig. 2) should now be renumbered Z2-Z7.

b) Between the extraction pits Z4' and Z5' in

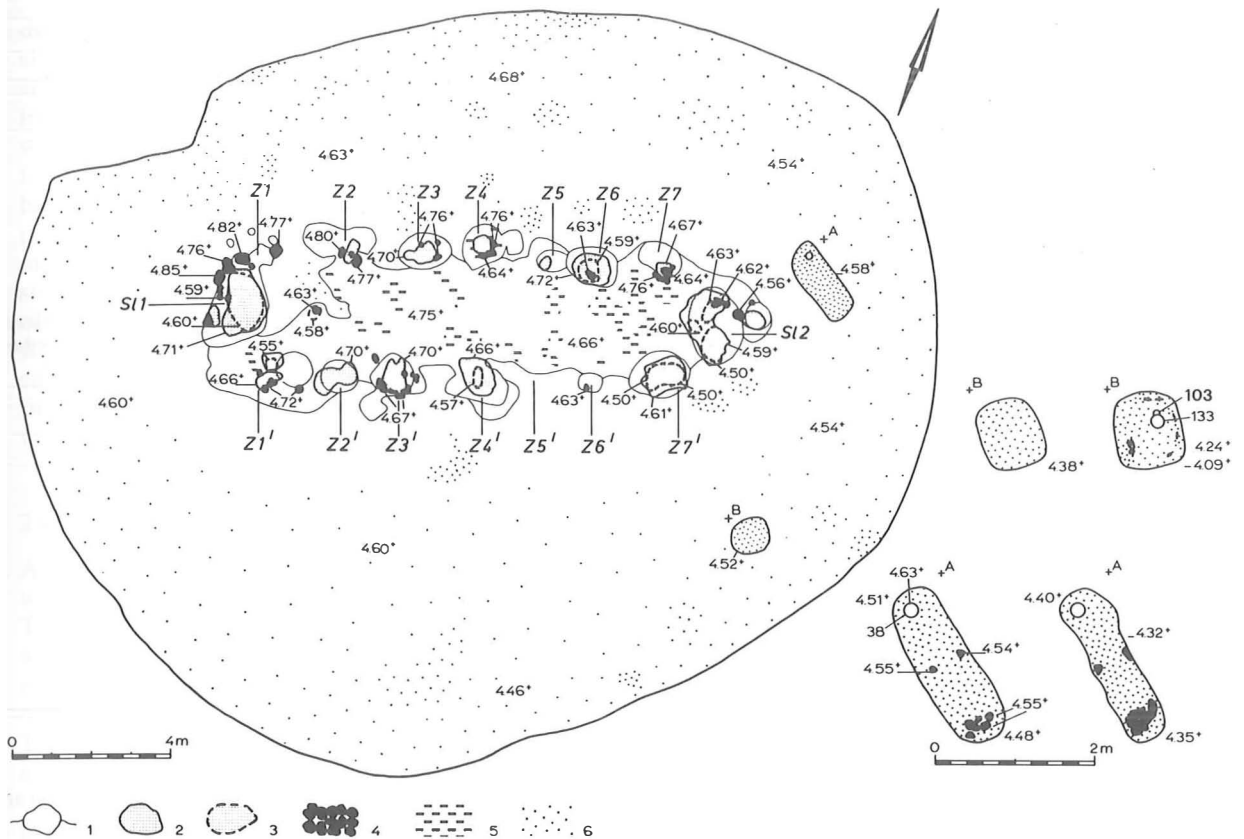


Fig. 3. Groundplan: levels 2, 3 and 4 combined. Legend: 1. level 2, outline of chamber debris and extraction pits; 2. level 3, extraction pits; 3. level 4, extraction pits; 4. level 4, packing stones in situ; 5. level 3, traces of chamber debris; 6. iron pan at edge of mound.

figure 2 of the earlier publication (see above), is a large gap of about 2 metres. This is far larger than the normal gap between two side stones but it is also too large for an entrance gap. The most likely explanation is that a side stone with a very shallow foundation pit stood here originally, and that by Level 2 traces of this stone had disappeared. It is possible, however, that the brown patch with infiltration veins recorded at Level 2 may be connected with this side stone. This new side stone should now be numbered Z5'. The extraction pits Z5' and Z6' of the earlier publication (Lanting, 1974-75: fig. 2) should be renumbered as Z6' and Z7'.

c) Only in the case of Z1' did the pit filled with dark humic soil at Level 2 not correspond fully with the traces of an extraction pit and packing stones in situ at Level 3 and 4. This means that Z1' stood closer to SI 1 than was indicated in the earlier publication (Lanting, 1974-75: fig. 2).

Following these changes the chamber now appears to have been very regular with the correspondingly numbered extraction pits lying opposite each other. A new ground plan is published here on

which the extraction pits have been renumbered (fig. 3).

The small pit with a similar dark humic filling to the extraction pits east of SI 2 may have been due to the removal of a large boulder in the stone packing around the chamber.

The orientation of the chamber was ENE-WSW, its internal measurements were 11 x 2-2.2 m. Large parts of the paved floor of field stones had been broken up, but some substantial parts remained intact. The surface of the floor was uncovered c. 0.35-0.40 m below the surface of the field. This must correspond more-or-less to the original depth of the chamber below the surface at the time of its construction.

A *hunebed* orientated ENE-WSW would have had its entrance near the centre of its south side. There is evidence to suggest that the entrance to G2 occurred between Z3' and Z4', that is, west of centre. Between Z3' and Z4' the paved chamber floor was defined by a strip of slightly larger stones which projected above the level of the rest of the chamber floor. It is possible that these stones were originally laid along a sill stone which disappeared

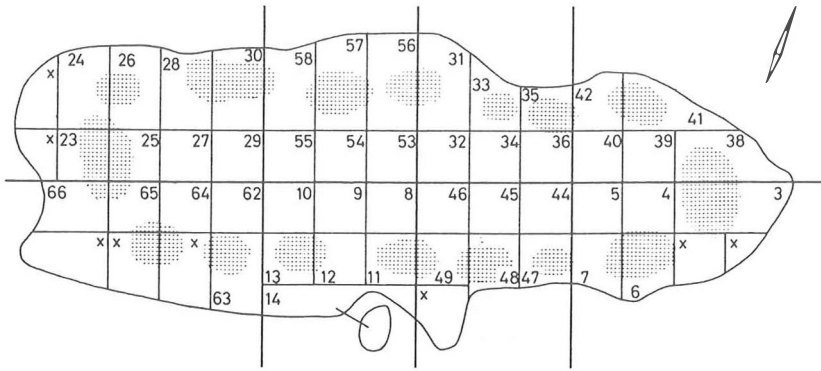


Fig. 4. Layout of excavation squares with find numbers. Positions of orthostats shaded, x indicates no finds.

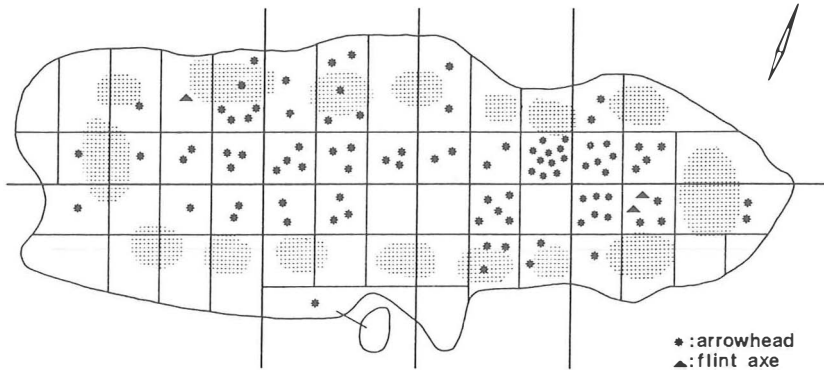


Fig. 5. Distribution of trapezoidal arrowheads and flint axes.

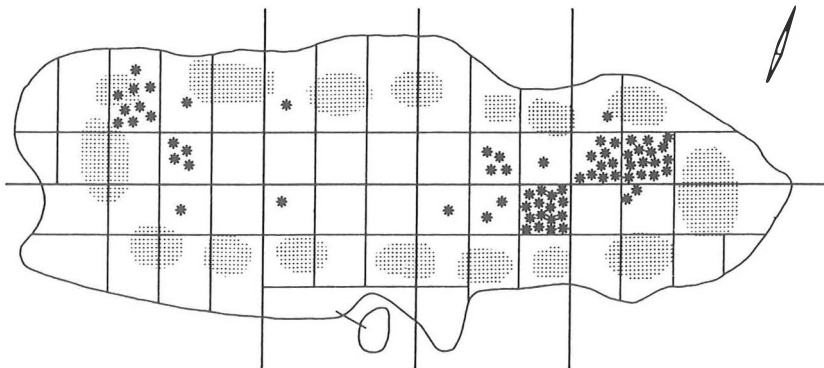


Fig. 6. Distribution of amber beads.

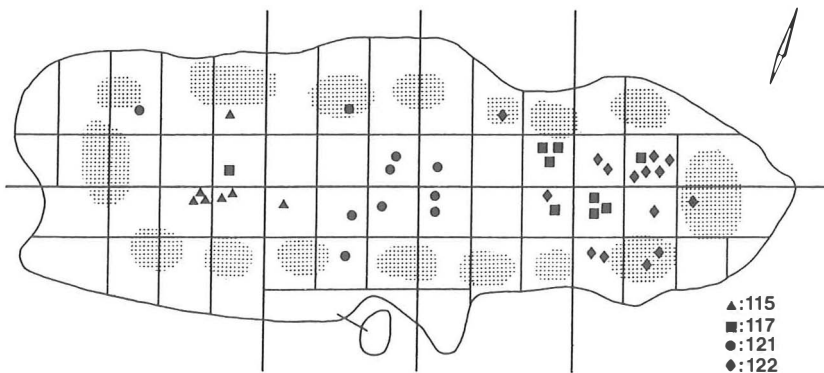


Fig. 7. Distribution of sherds of lugged bowls, Horizon 3.

during the destruction of the chamber. An oval shaped 'recent' pit filled with brownish sand and stone grit at Level 1 and a subrectangular patch of iron pan infiltration at Level 2 were noticed southwest of Z4' in the area where a portal stone would have stood if the entrance to the chamber had been between Z3' and Z4'. The 'recent' pit may be due to the removal of the portal stone and the infiltration may have been caused by the former presence of the stone, as in the case of side stone Z5'. The absence of a socket is not surprising; in general, portal stones are smaller than side stones and do not have such deep sockets. This explains why no traces of the corresponding portal stone were recognized west of the entrance.

2.4. The mound

As with all megalithic tombs in the Netherlands, G2 was originally surrounded by a mound of earth. This mound was also levelled when the chamber was demolished. No podsol profile had yet developed at the time the chamber and mound were constructed; this only took place subsequently. Therefore the former mound was traceable by the absence of iron pan infiltration immediately around the chamber and its presence near the edges of the cutting. Unfortunately, only the lower part of the iron pan layer had escaped being ploughed away and in places only faint traces were still present. Nevertheless, an approximate outline of the shape and size of the mound could be made out. It was apparently an elongated subrectangular-to-oval shaped mound c. 19 m long and c. 10 m wide (fig. 2).

There is some evidence that the mound was originally defined by a kerb. Not all *hunebeds* had kerbs but they are most commonly associated with *hunebeds* with two pairs of portal stones. Concentrations of field stones were found in several places along the north and west sides of the chamber, more-or-less along the edge of the iron pan infiltration. These stones are possibly packing stones from kerb sockets. The sockets of kerb stones are generally very shallow and would therefore be amongst the first features to disappear. This may also explain why traces of kerb and portal features are almost never found during excavations of destroyed megaliths in the Netherlands. The concentrations of field stones along the edges of the former mound of G2 may be an exception to this general rule. The shape and size of the mound, and especially the distance of c. 2 m or possibly slightly more between the chamber and the edge of the mound can also be taken as indicative of the presence a kerb originally.

2.5. Features outside the chamber

Several features associated with pottery were un-

covered outside the chamber area (figs 2 and 3).

a) Northeast of Sl 2 a burial pit, orientated NW-SE, became visible when the stratified sand was uncovered (length 2.1 m, width 0.8 m, depth below present ground surface 0.7 m). Eight field stones were found at the bottom of the pit, six close together near the southeast end and one each close to the middle of the long sides. A large funnel beaker (No. 38) was found near the NW end of the pit, in an inverted position. A small piece of flint without traces of either working or use was found in the pit fill. This should be considered as a stray find. Although no trace of a corpse silhouette was found, the absence of any cremated bone indicates that this was an inhumation burial. The function of the field stones is unclear. These would be explained as coffin supports in a Bronze Age grave but it is not known if they fulfilled the same purpose in TRB burials. The dimensions of the pit and the position of the stones suggest extended burial, but again, absolute certainty is not possible. Nor is the stratigraphic relationship between this burial and the megalithic tomb clear; the burial occurred near the edge of, but clearly beneath, the former mound. It could, therefore, be earlier than the mound but this cannot be proven. Its position under the mound and presumably just within the kerb are not necessarily arguments against the digging of the grave pit after the construction of the mound covering the megalithic chamber as Lanting (1974-75: p. 177) thought.

b) Southeast of the extraction pit of Sl 2 a small undecorated bowl with a footring (No. 198) was found beneath two field stones, close to the edge of the former mound. No traces of a pit were visible in the structureless sand.

c) Southeast of Z7' and outside the mound a subrectangular pit (0.90 x 0.90 m) was found. The base of the pit was c. 0.9 m below the present surface of the field. The outline of the pit was only visible in the stratified sand. It contained two vessels. A faint circle of small fragments of charcoal occurred at the level of the uppermost part of these pots. This charcoal was collected and dated: 4380±40 BP (GrN-6156). The pottery consisted of a straight walled pail with four lugs close to the rim and a five or six footed base (part of the base has decayed; No. 133). This was accompanied by a single lugged beaker with a thumb sized horizontal lug (No. 103). The function of this pit is unclear. No cremated bone or traces of a corpse silhouette were found. The dimensions of the pit were only large enough for a child burial. It is possible, of course, that this is not a burial pit but one for an offering.

d) South of Z7' an undecorated poorly made beaker with an uneven base (No. 102) was found in a pale grey patch. The findspot was well within the edge of the mound but it is clear in this case that the pot must have been buried after the construction of the mound.

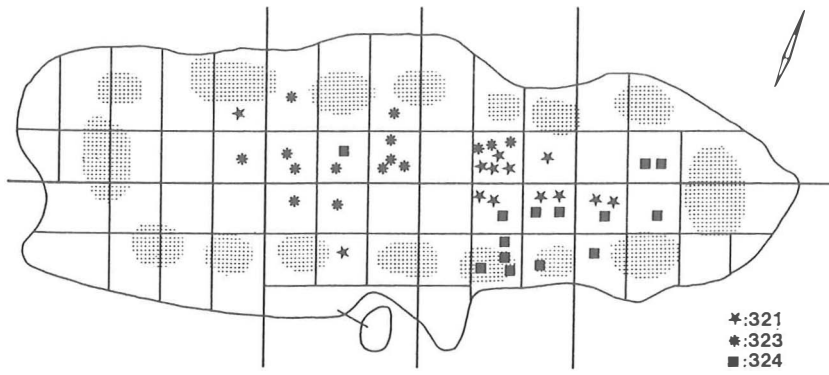


Fig. 8. Distribution of sherds of tureen-amphorae, Horizon 5.

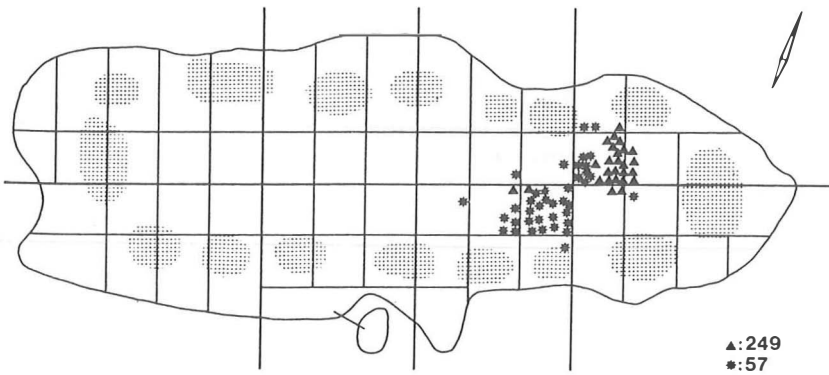


Fig. 9. Distribution of sherds of service set, Horizon 3.

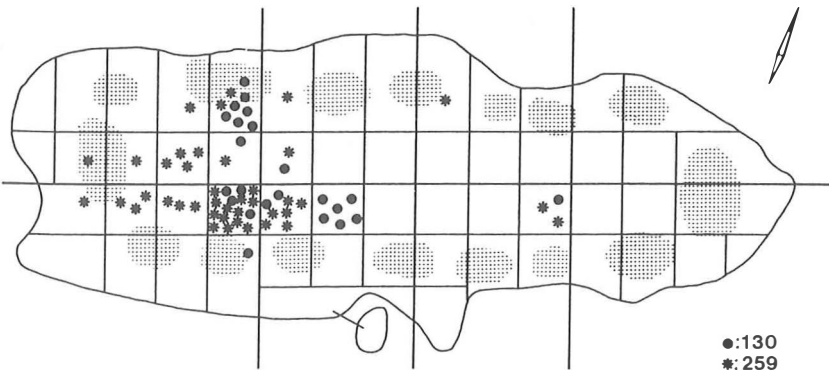


Fig. 10. Distribution of sherds of service set, Horizon 3.

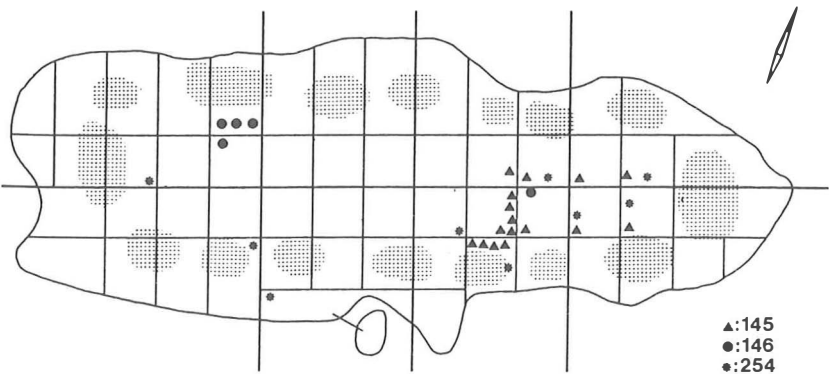


Fig. 11. Distribution of sherds of service set, Horizon 4.

e) 2.5-3 m west of SI 1 a small, undecorated bowl with an uneven base (No. 199) was found in a grey patch with a few pieces of charcoal which was therefore visible in the structureless sand. This pit was dug close to the edge of the mound.

2.6. Distribution of material in the chamber (figs 5-14)

Although the structure of the *hunebed* was almost completely destroyed (all traces of the mound and orthostats having disappeared and only a small portion of the floor remaining in situ), the contents of the chamber survived not only relatively intact but more-or-less in their original position. In many cases, the distribution of sherds of a single pot was fairly well nucleated. These nuclei represent the original position of the pot, not a disturbed position. This is shown by the distribution of sherds of various 'service sets' (see figs 9-13). The term 'service set' was introduced by Schlicht in discussions of the pottery from Emmeln 2 (Schlicht, 1968: p. 21). The term refers to a group of two or more pots, either of the same types or of different types, with identical fabric and decoration, indicating that all were made by one potter on one occasion and fired together. In some cases, it has not been possible to distinguish sherds of different pots in a 'service set'. These figures show that the pots from a single 'service set' were deposited side-by-side, almost certainly in a single act. Similarly, the grouping of the amber beads into well-defined and distinct areas, suggests the original positions of three separate necklaces.

Figure 7 shows the distribution of several bowls of Horizon 3. The sherds indicate the original location of the individual bowls, the distribution of which show that no particular part of the chamber was preferred. A larger number of sherds and other items were found in the east end of the chamber, but finds from all horizons and of all types were spread equally over the whole chamber. The distribution of arrowheads (fig. 5) reflects this overall distribution of finds.

3. FINDS

All finds are lodged in the Groninger Museum, Groningen, inventory numbers 1969/X (excavation B.A.I.) and 1987/II.1 (Ameling collection).

3.1. Flint

994 pieces of flint were found before and during the excavation. E. Ameling, an amateur archaeologist, later collected a further 280 pieces from the redeposited and unsieved topsoil. These were only recently brought to the attention of, and presented

Table 1. Service sets.

Tureens	Funnel beaker	Pail	Bowl
276, 277			
270, 271			
(272, 273)			
249	57		
259		130	
248			122
254			145, 146
—			139, 140

to, the B.A.I. There is a curious difference between the material collected by the B.A.I. and by Ameling. In the B.A.I. collection, at least 154 pieces are clearly recognizable as tools and another c. 50 pieces show traces of working or use. Of the 280 pieces in Ameling's collection, the vast majority are unworked pieces and flakes. Only six tools are present. Furthermore, the large number of burnt pieces (75) is surprising. Amongst these, eight pieces of a large axe are recognizable. It is possible that the other pieces also belong to this axe.

As stated previously, during the excavation the finds were collected by sieving with a potato sorter and recorded by square metre. With the exception of the axes, all the flint material in the B.A.I. collection was included by Deckers within the context of his research on Neolithic flint working. Ameling's collection was only brought to his attention after Deckers finished his work on the G2 flint material. Therefore only the tools in this collection will be included in his publication.

A detailed description of the tools is given by Deckers (forthcoming). Here it is sufficient to present the tools according to traditional categories. The assemblage includes (figs 17-25):

- 119 transverse arrowheads. The small arrowhead with retouch along one side which was found in square 3, resembles a Mesolithic A-point, but is probably an unusually narrow TRB arrowhead. As in other *hunebeds*, unworked flakes with the proportions of transverse arrowheads were found at G2. These probably fulfilled the same function. These unworked pieces are not included in the numbers given or illustrated;
- 11 scrapers;
- 1 fragment of a bi-facially worked artefact (not illustrated);
- 4 blades with retouch, three of which show sickle gloss;
- 21 *bikkels*, one of which is made from a piece of a polished flint axe. Some of these *bikkels* seem to have been used as strike-a-lights. Recently a *bikkel* and an iron ore nodule were found together in a flat grave with Horizon 4 pottery near Heek-Ammerter Mark, Kr. Borken (information W. Finke). Other *bikkels* may have been used as retouching tools or borers;

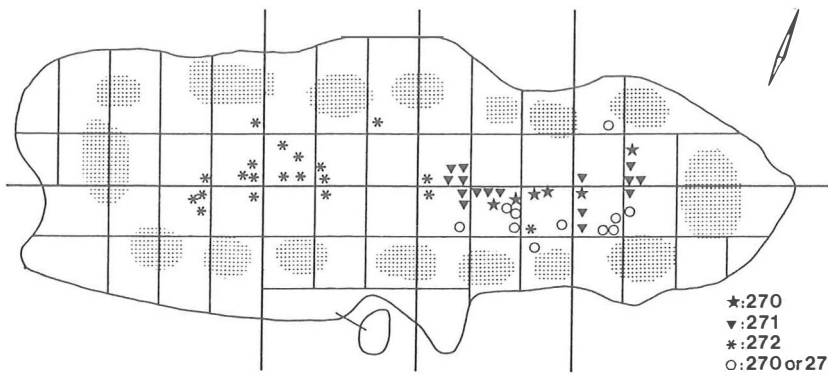


Fig. 12. Distribution of sherds of service set, Horizon 4, and similar but not identical tureen (No. 272).

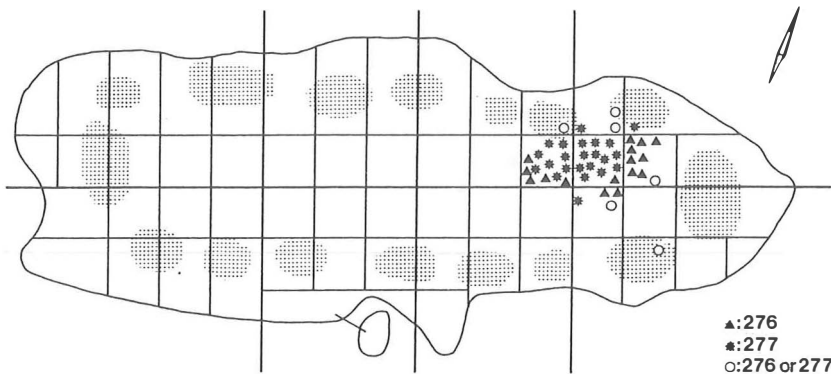


Fig. 13. Distribution of sherds of service set, Horizon 4.

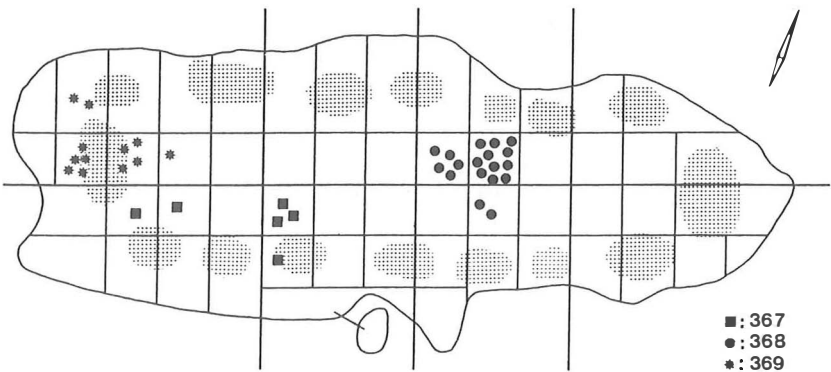


Fig. 14. Distribution of sherds of Bell Beakers.

- 4 flint axes. Two of these were found together in square 4 and are probably an original association. The small axe (No. 1) has a badly damaged cutting edge and was probably used as a hammer stone at some stage. In addition to these, there are two large pieces of flint axes with traces of secondary working. The pieces of burnt axe in the Ameling collection are not included in this discussion;

- 2 oval flint knives with marginal retouch which belong to the Bell Beaker phase of activity (Lanting, 1973: p. 232).

3.2. Amber

71 pieces of amber were recovered. This large number is attributable chiefly to the use of a 6 mm mesh sieve during the excavation. Apart from a single hemispherical unperforated piece found in the ploughsoil, all the pieces are either complete, or portions of, beads. The beads are of two main forms, tubular and disc, the latter being the more common. Most of the beads were found in three concentrations (fig. 26), two in the eastern half of the chamber, and the other (about 12 beads) in the

western half. The hemispherical unperforated piece is possibly an unfinished amber bead of the type found in Beaker graves.

3.3. Bone

No unburnt bone was preserved. *Hunebed* inventories from a.o. Hilter, Kr. Osnabrück (Schlüter, 1985: Fig. 126-129) and Wechte, Kr. Steinfurt (Knöll, 1983: Tafel 62) indicate the general range of bone objects deposited in megalithic tombs, but the soil conditions in this area are not suitable for the preservation of unburnt bone. It is very likely that bone points and tusk/teeth pendants originally formed part of the grave gifts.

3.4. Burials

A very small amount of cremated bone was recovered. Since it is unlikely that any was removed prior to the discovery and excavation of the tomb, and as no significant amount was lost during the excavation, this must mean that the chamber never contained large amounts of cremated bone. No estimate of the original quantity of unburnt bone is possible, but as several pots (often 5 or 6) are commonly found in what seem to have been originally single burials in flat graves, there is no reason to believe that there should have been an interment with every gift; it is also clear from the pottery itself, that groups of pottery (the so-called service sets) were deposited as single acts. Furthermore, there is no evidence one way or the other for burials without gifts or with perishable gifts, both of which conceivably took place.

3.5. TRB pottery

3.5.1. General remarks

The following sections are devoted to a descriptive account of the TRB pottery. About 8500 sherds of TRB pottery were found in the chamber debris and in the ploughsoil before and during the excavation. This material was sorted over a period of five months. The assemblage originally consisted of approximately four hundred pots representing all but the earliest stages of West Group TRB pottery. About 360 pots are reconstructable to a large extent. An additional forty can be recognized by distinctive rim, shoulder or decorated sherds, as not belonging to any other identifiable pot. The bases have not been included in this figure. Although examined exhaustively, 78 fairly complete bases could not be definitely associated with body sherds. Six more-or-less complete pots were also found outside the chamber (see 2.5).

The pottery is described by individual type based chiefly on shape (funnel beaker, pail, etc., see fig.

15) rather than by horizon. Two problems were encountered in doing this – one being the absence of terminology for various fairly specific and well-represented types. For these it was found necessary to introduce new terminology in the form of two new terms and to modify an existing one (see fig. 15):

- funnel beaker cup,
- shouldered vases, with or without lugs,
- tureen-amphorae/amphorae types 1 and 2.

This procedure was found to be fairly successful but a second problem was occasionally encountered – where several pots exist with similar shape, but are apparently otherwise unrelated. The vast majority of the material treated under the heading ‘Lugged bowls and pails’ belongs to the earlier TRB phases (i.e. Horizon 3). Pail No. 133, however, belongs to a much later stage of the sequence. An alternative approach, by established groups or phases, was also considered but rejected. Recent work by Voss (1982), Taayke (1985: pp. 131-132), and Brindley (1986) has shown that some modifications to the existing typochronology (Bakker, 1979) are necessary.

3.5.2. Catalogue

3.5.2.1. Contents

Funnel beakers	1-102
Funnel beaker cups	103-110
Lugged beakers	111-112
Lugged bowls and pails	113-133
Non-lugged decorated bowls	134-175
Non-lugged undecorated bowls	176-212
Necked bowls	213-235
Cordoned bowls	236-237
Jugs	238-241
Tureens	242-281
Amphorae	282-325
Undecorated lugged/ non-lugged shouldered vases	326-348
Collared flasks	349-359
Biberons	360-361
Miscellaneous	362-366
Total	366
Decorated rims	26
Body sherds	14
Bases	78

3.5.2.2. Descriptions

Funnel beakers

1. Almost complete. Flaring neck and rounded shoulder. Vertical lines.
2. Incomplete. Body with rounded profile. Vertical lines.
3. Incomplete. Body with rounded profile. Vertical lines.
4. Incomplete. Flaring rim and rounded body. Fine vertical lines on body.
5. Almost complete profile. Fairly straight, plain neck and short shoulder. Vertical lines. Poorly fired.
6. Incomplete. Plain neck. Vertical lines on body.

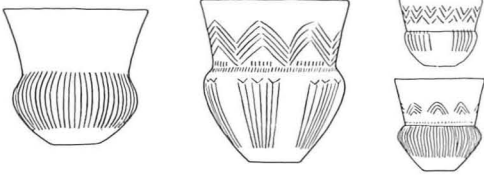
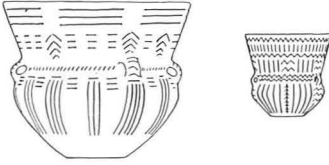


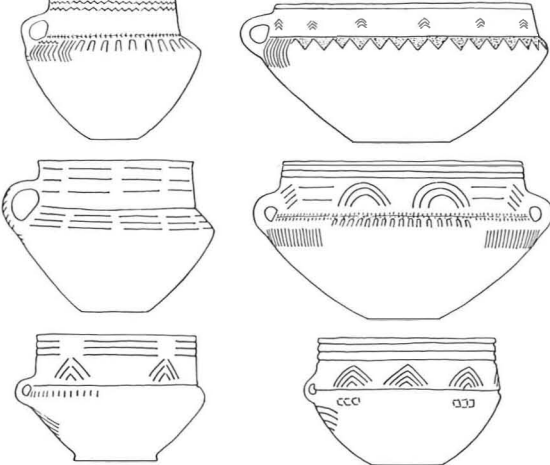
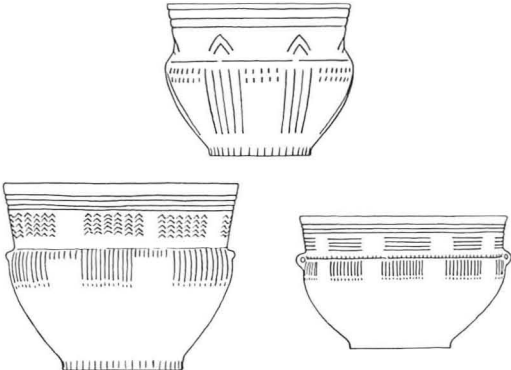
	TYPE	HORIZON
	FUNNEL BEAKER	1-5
	LUGGED BEAKER	1-4
	FUNNEL BEAKER CUP	5-7
	JUG	1-2
	TUREEN	3-4
	TUREEN-AMPHORA	4-5

Fig. 15. Table of most common pot types.

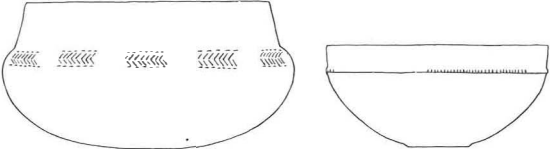
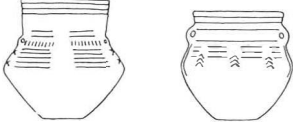

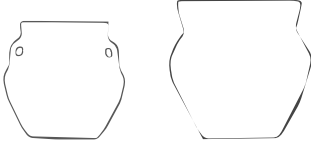

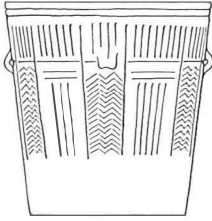
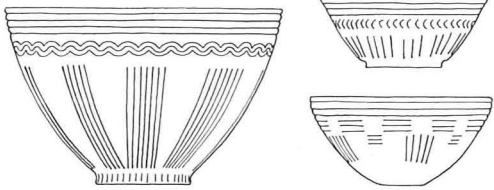
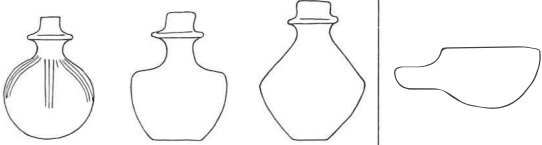
	TYPE	HORIZON
	NECKED BOWL	7
	AMPHORA TYPE 1	3-4
	AMPHORA TYPE 2	4-5
	LUGGED OR NON-LUGGED SHOULDERED VASE	2-7
	LUGGED BOWL	1-3
	PAIL	2-4
	NON-LUGGED BOWL	decorated 3-5 undecorated 2-7
	COLLARED FLASK	1-7
	BIBERON	2-4

Fig. 15 (cont.).

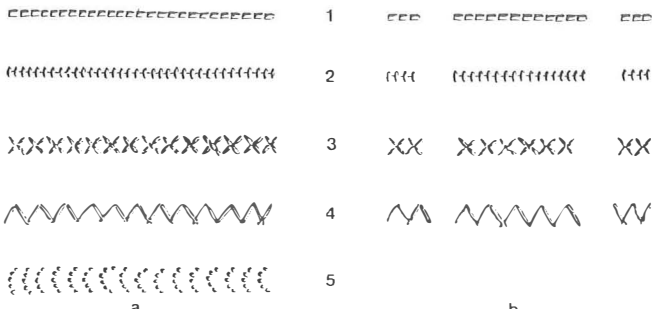

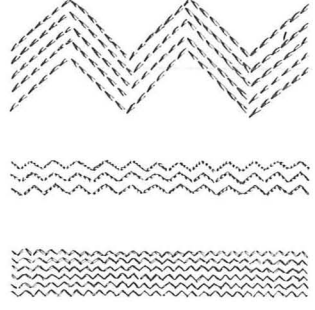
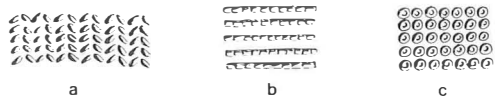



DECORATION	
 <p style="text-align: center;">a b</p>	<p>1. tiefstich 2. tvaerstik 3. incised lozenge 4. zigzag 5. C motif</p> <p>a. continuous horizontal line b. discontinuous horizontal line</p>
 <p style="text-align: center;">a b</p>	<p>horizontal band of verticals (upper zone) a. continuous b. discontinuous</p>
	<p>large multiple zigzag multiple zigzag close set multiple zigzag</p>
 <p style="text-align: center;">a b c</p>	<p>horizontal blocks a. zigzag b. tiefstich c. hollow stamp</p>
	<p>vertical blocks</p>
	<p>alternating long and short vertical blocks</p>
	<p>continuous verticals</p>

Fig. 16. Table of main decorative elements, layout and applied features.

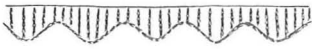





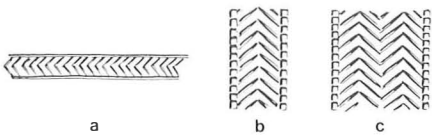
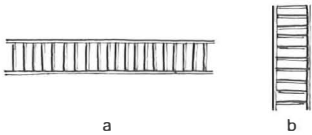
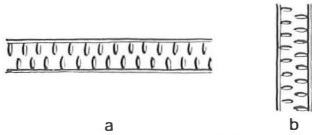
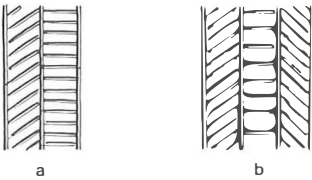
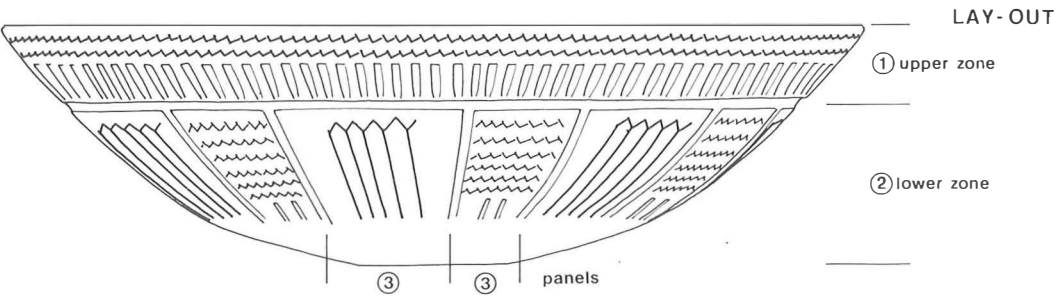
	<p>hatched triangles</p>
	<p>filled triangles</p>
	<p>pseudo triangles</p>
	<p>shoulder stamp</p>
	<p>multiple arcs a. rounded b. pointed</p>
	<p>inverted arcs a. rounded b. pointed</p>
	<p>chevron a. horizontal b. vertical c. chevron zigzag</p>
	<p>ladder a. horizontal b. vertical</p>
	<p>zipper a. horizontal b. vertical</p>
	<p>multiple strips a. double b. treble</p>
 <p style="text-align: right;">LAY- OUT</p> <p>① upper zone</p> <p>② lower zone</p> <p>③ panels</p>	

Fig. 16 (cont.).

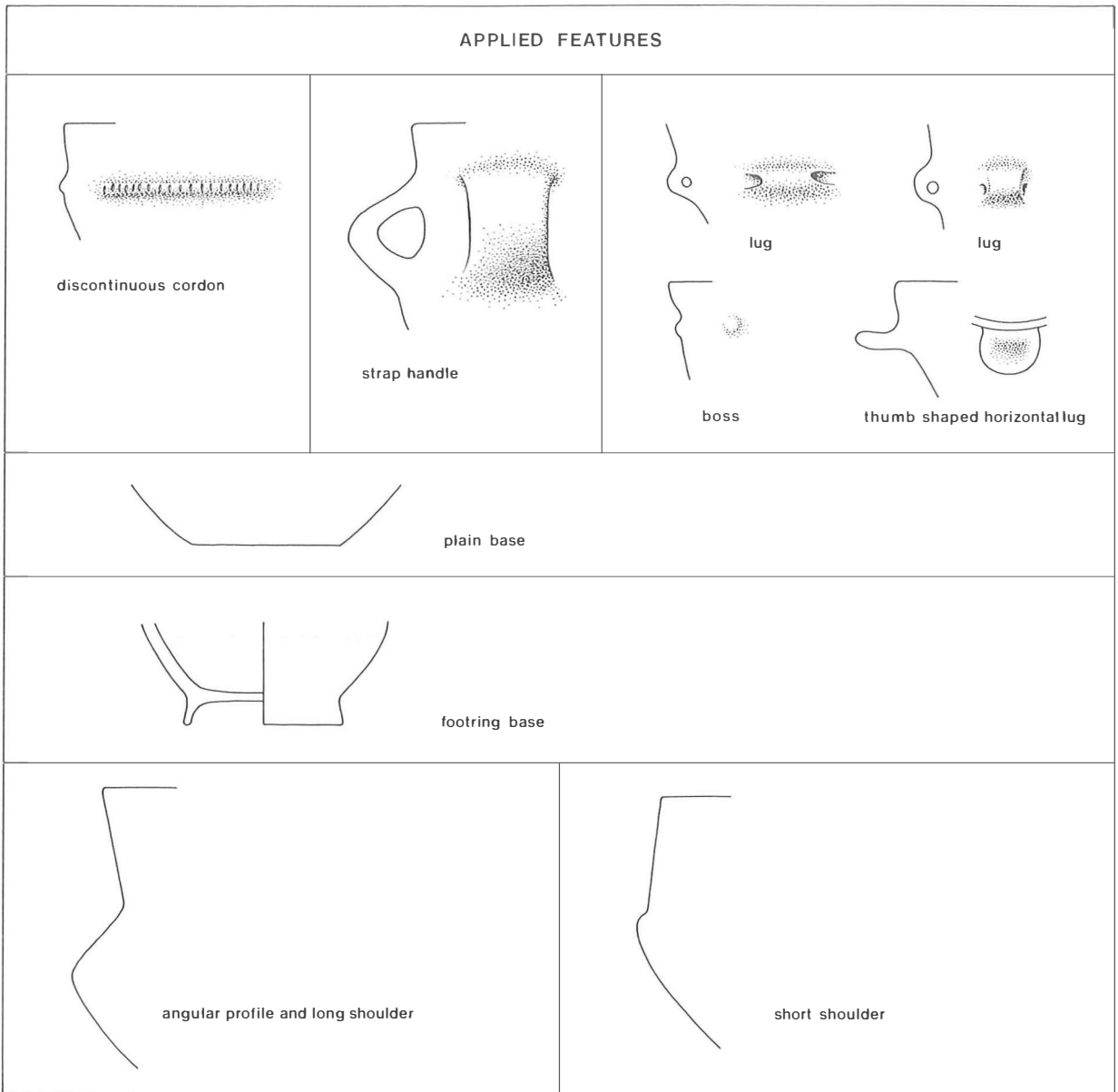


Fig. 16 (cont.).

7. Incomplete. Slightly flaring neck and almost unmarked shoulder. Verticals on body.
8. Incomplete. Cylindrical neck and rounded belly. Vertical lines on body.
9. Incomplete. Flaring rim. Verticals on body.
10. Incomplete. Rounded belly. Lightly scratched vertical lines on body.
11. Incomplete. Longish shoulder. Vertical lines.
12. Complete profile. Flaring neck and fairly short, rounded shoulder. 2 lines of *tvaerstik* at base of neck, vertical *Tiefstich* lines on body.
13. Fragmentary. Plain neck, vertical lines on body.
14. Incomplete. Plain neck. Vertical lines on body.
15. Complete. Plain neck. Vertical lines on body.
16. Almost complete. Flaring rim and short, rounded shoulder. Vertical lines on body.
17. Incomplete. Body sherds only. Vertical lines on body.
18. Incomplete. Short rounded shoulder. Stab marks at base of neck. Verticals on body.
19. Complete profile. Small, thin-walled beaker. Verticals on small body.
20. Almost complete. Long flaring neck and fairly short shoulder. Vertical lines on body.
21. Almost complete. Flaring neck and small, rounded shoulder. Vertical lines on body.
22. Incomplete. Rounded shoulder. Vertical lines on body.
23. Almost complete profile. Flaring neck and small, rounded shoulder. 2 *tvaerstik* lines at base of neck, vertical *Tiefstich* on body.
24. Incomplete. Similar to No. 23 but smaller.
25. Incomplete. Plain neck. Vertical lines on body.
26. Almost complete profile. Flaring neck and short, rounded shoulder. 3 lines on shoulder, vertical blocks on body.
27. Incomplete. Flaring neck and very slight shoulder. Vertical lines on body.
28. Fragmentary. Flaring neck. Small shoulder. Vertical lines on body.
29. Fragmentary. Vertical lines on body.
30. Incomplete. Flaring undecorated neck, verticals on body.
- 31a. Fragmentary. *Tvaerstik* line at base of neck, vertical lines below.
- 31b. Fragmentary. Not part of 31a or 31c.
- 31c. Fragmentary. Not part of 31a or 31b.
32. Fragmentary. Short shoulder. Vertical lines.
33. Fragmentary. Flaring neck, horizontal line at base of neck, vertical lines on body.
34. Incomplete. Body sherds only. Vertical lines.
35. Incomplete. Body sherds only. Vertical lines.
36. Incomplete. Cylindrical neck and sloping shoulder. Alternating blocks of vertical lines and stabs on body.
37. Complete profile. Cylindrical neck and almost imperceptible shoulder. Vertical lines on body in blocks alternating in length.
38. Complete. From the burial pit northeast of SI 2. Plain neck, alternating panels of vertical lines and short fringe on body.
39. Almost complete profile. Flaring neck and short shoulder. Vertical blocks of alternating length on body.
40. Incomplete. Thick walled with rounded shoulder. Two lines at base of neck. Vertical blocks on body.
41. Incomplete. Body sherds only. Vertical blocks.
42. Fragment. Vertical blocks on body.
43. Incomplete. Short, flaring neck and gently curving profile. Fringe along shoulder.
44. Almost complete profile. Small, thick-walled beaker with rounded shoulder. Panels of vertical lines on body.
45. Incomplete. Long-neck, short shoulder. Large, double zigzag on neck, double line of very small zigzag on shoulder, vertical lines on body.
46. Fragment. Portion of large multiple zigzag. See No. 48.
47. Incomplete. Flaring neck and slight, rounded shoulder. Large treble zigzag on neck, vertical lines on body.
48. Complete profile. Flaring neck and small, rounded shoulder. Four large zigzags on neck, stab marks at base of neck, long tapering blocks on body. Horizon 5.
49. Incomplete. Short necked, wide funnel beaker with double zigzag below rim and fringe on small, rounded shoulder.
50. Incomplete. Flaring neck. Double zigzag below rim, 3 lines at base of neck and lines on body.
51. Almost complete profile. Slightly flaring neck, and very slight shoulder. Double zigzag below rim, line of small *tvaerstik* at base of neck. Horizon 5?
52. Incomplete. Short, cylindrical neck. Zigzag below rim, fringe on shoulder. Horizon 5?
53. Incomplete. Neck sherds only. Zigzag at base of neck, vertical lines on body.
54. Incomplete. Small, wide beaker with short, flaring neck. Zigzag at base of neck, vertical lines on body.
55. Complete profile. Flaring neck and short sloping shoulder. Double zigzag at base of neck, verticals on body.
56. Almost complete profile. Relatively straight neck, and very slight shoulder. Zigzag at base of neck, verticals on body.
57. Complete profile. Flaring neck and high well marked short shoulder. Double zigzag on lower neck. Verticals on body. Service set with tureen No. 249. Horizon 3.
58. Complete profile. Flaring neck and short, rounded shoulder. Zigzag at base of neck, verticals on body.
59. Complete profile. Flaring rim and slight rounded shoulder. Double zigzag on neck, broad *Tiefstich* line at base of neck and *Tiefstich* verticals on body.
60. Fragmentary. Body sherds only. Zigzag (?) at base of neck. Vertical lines on body.
61. Complete profile. Thick walled; sharp shoulder, slightly flaring neck. Zigzag at base of neck, line and fringe on shoulder, vertical blocks on body.
62. Incomplete. Flaring neck and short, rounded shoulder. Zigzag at base of neck, verticals on body.
63. Incomplete. Short shoulder; zigzag at base of neck, horizontal line on shoulder with blocks of pendant *Tiefstich* and *tvaerstik*.
64. Incomplete. Small, rather wide funnel beaker. Multiple zigzag related pattern on neck, vertical panels on body. Amp-hora-like funnel beaker. Horizon 5.
65. Fragmentary. Rim with multiple arcs on neck. Fine, well-finished thin fabric. Horizon 4.
66. Almost complete profile. Flaring neck and short, sharp shoulder. Multiple arcs on neck, verticals on body. Horizon 4.
67. Almost complete profile. Slightly flaring neck and very slight shoulder. Double arcs on neck. Horizontal line at base of neck, vertical blocks on body. Horizon 4.
68. Long, flaring neck, long shoulder and sharp angles between neck, shoulder and body. Plain neck, stab marks at junction of neck and shoulder, neatly executed lines of stab marks along shoulder, and vertical *Tiefstich* lines on body.
69. Incomplete. Very flaring neck and short, round shoulder. Single line of deeply impressed *Tiefstich* along base of neck. See Emmeln No. 114.
70. Incomplete. Flaring neck. Stab marks along shoulder, vertical lines on body. Decoration is very faint and may represent guidelines for ornament never executed.
71. Complete profile. Slightly flaring neck, and slight shoulder. Very faint lines on body may represent guidelines for ornament never executed.
72. Incomplete. Weak profile. Line of small pits below rim.
73. Incomplete. Slightly conical neck and weak shoulder.
74. Incomplete. Angular profile, vertical neck and flaring rim tip.
75. Incomplete. Undecorated neck.
76. Fragment. Flaring neck.
77. Incomplete. Slightly flaring neck, d. 17.9 cm.
78. Incomplete. Short, horizontal shoulder and slightly rounded body.
79. Incomplete. Neck, d. 13.5 cm.
80. Incomplete. Slightly flaring, straight neck and short,

slightly rounded shoulder.

81. Incomplete. Body sherds only. Short ledge-like shoulder.
82. Almost complete. Thick-walled beaker with weak profile.
83. Incomplete. Unaccentuated profile.
84. Incomplete. Slightly conical neck and weak shoulder.
85. Incomplete. Straight neck and weak shoulder.
86. Complete profile. Wide, short necked, thick-based funnel beaker with conical neck and weak shoulder.
87. Incomplete. Wide, short necked funnel beaker.
88. Fragmentary. Neck sherds only.
89. Fragmentary. Neck sherds only.
90. Almost complete. Crudely made funnel beaker. Outer surface is covered with vertical scratch marks.
91. Small funnel beaker with weak profile.
92. Incomplete. Neck sherds only.
93. Fragmentary. Cylindrical neck with thin, protruding ledge rim.
94. Incomplete. Small, thin-walled funnel beaker body.
95. Fragmentary. Thin protruding ledge rim.
96. Fragmentary. Thin, protruding ledge rim.
97. Incomplete. Very large, thick-walled, well-finished beaker with cylindrical neck and rounded shoulder, neck d. 22 cm.
98. Incomplete. Large, poorly fired funnel beaker, neck d. 16 cm.
99. Incomplete. Large funnel beaker of well baked coarse fabric, neck d. 19.6 cm.
100. Incomplete. Thick-walled beaker. Well finished. Neck d. c. 15.7 cm.
101. Incomplete. Thick-walled beaker. Well finished.
102. Complete. Slack profiled funnel beaker. Found outside the chamber.

Funnel beaker cups

103. Complete. Slightly 'S'-shaped cup with narrow, horizontal, unpierced lug.
104. Almost complete. Horizontal groove marking junction of neck and body. Narrow, horizontal, unpierced lug.
105. Complete profile. Conical bowl with short neck and vestigial shoulder visible in the slight increase in thickness of body wall.
106. Incomplete. Thin-walled with very slight, short neck and very slight almost unmarked shoulder. Narrow, horizontal, unpierced lug.
107. Incomplete. Relatively flaring very short neck.
108. Almost complete profile. Fairly thick-walled conical bowl with black, burnished leathery outer surface. Slight inward curve at base of neck. Negative of narrow, horizontal, unpierced lug.
109. Incomplete. Fairly thick-walled conical bowl with black, burnished leathery outer surface. Slightly flaring neck. Similar to No. 108 except in thickness and shape of rim tip.
110. Sherds of three narrow, horizontal, unpierced lugs from vessels similar to Nos 103-109.

Lugged beakers

111. Incomplete; neck sherds only. Line of pseudo-*tvaerstik* below rim, band of verticals in upper zone, lower zone filled with defined panels of alternating motifs, multiple zigzag, verticals and zipper. Between upper and lower zones and at base of the neck are straight grooved lines. Four small lugs span the junction of the neck and shoulder. Horizon 3.
112. Incomplete. Four small lugs at base of neck. *Tiefstich*. Horizontal blocks below rim, alternating horizontal blocks and multiple arcs on neck, line at junction of neck and body, and alternating long, vertical and short horizontal blocks on body. Horizon 4.

Lugged bowls

113. Almost complete profile. Horizontally pierced, decorated lugs within upper decorative zone. Upper zone defined by zigzag but otherwise 'empty'. Lower zone includes panels with zigzag and verticals. Internal rim decoration of single zigzag line

is unusual, but not chronologically significant. Horizon 2.

114. Two rim sherds showing verticals between lines of zigzag. Horizon 3.
115. Almost complete profile. Horizontally pierced lugs within upper decorative zone. Upper band of verticals defined by single lines of zigzag. Lower zone of alternating broad panels of verticals and narrow panels of zigzag motif. Horizon 3.
116. Incomplete. Horizontal 'sausage lug' at junction of upper and lower decorative zones. Line of *hartstempel* (Bakker, 1979: p. 179) motif below rim; upper zone of vertical lines separated from lower zone of vertical lines by line of *hartstempel* motif. Horizon 3.
117. Almost complete profile. Horizontally pierced lugs within upper decorative zone. Upper zone of incipient groups of verticals between lines of *hartstempel* motif. Lower zone also shows incipient spacing of verticals within the panels and zigzags. Some inlay visible. Horizon 3.
118. Incomplete. Horizontally pierced, decorated lug at junction of upper and lower zones. Upper zone of verticals between horizontal lines of 'X' (crude skating) motif. Lower zone of panels of verticals interspersed with groups of zigzag motif. Lug is decorated with vertical chevron and ladder. Horizon 3.
119. Complete profile. No horizontal line below rim; zone of vertical lines above zigzag line. Lower zone of alternating undefined panels of verticals and zigzags. Late Horizon 2, or, more likely, early Horizon 3 – incomplete upper zone; panel decoration compares well with that on handle of late Horizon 2 jug No. 238.
120. Almost complete profile. Unperforated lug within upper zone. Zigzag line below rim; upper zone of verticals separated from lower zone by small gap. Lower zone of alternating groups of long and short verticals. Absence of zigzag in lower zone is unusual. Horizon 3.
121. Complete profile. Double line of zigzag below rim. Upper zone of verticals. Upper and lower zones and panels in lower zone separated by broad *Tiefstich* line. Lower zone of alternating panels of multiple zigzags and verticals. Verticals are pendant from a single line of zigzag giving a 'Y' effect. Late Horizon 3 – vertical lines are well spaced within panel.
122. Almost complete profile. Unperforated, decorated lugs with upper decorative zone. Double zigzag line below rim; upper zone of verticals. Upper and lower zones and panels of lower zone separated by broad line. Lower zone of panels of verticals and zigzags. Horizon 3.
123. Incomplete. Single line of zigzag related motif below rim. Upper zone of verticals separated from lower zone by broad, straight line also used to define panels of zigzag from verticals making up lower zone decoration. Horizon 3.
124. Fragmentary. Double zigzag line below rim. Upper zone of verticals. Upper and lower zones are probably separated by zigzag line. Lower zone includes some zipper motif. Apart from the lugged beaker, No. 111, this is the only example of zipper motif in the Glimmen assemblage. It is not certain that the rim and body sherds represent a single pot. Horizon 3?
125. Incomplete. Band of vertical lines below rim. May have had zigzag line beneath. Horizon 3?
126. Incomplete. Maggot zigzag above zone of vertical lines. This is the only example of this decorative technique in the Glimmen assemblage. Maggot impressions belong chiefly to Horizons 1 and 2. The apparently relatively narrow zigzag panels together with the maggot impressions may indicate late Horizon 2.
127. Incomplete. Horizontal, decorated unpierced lugs on lower, borderline of upper zone. Decoration is executed almost entirely in *tvaerstik*. 3 horizontal lines below rim and above very narrow band of short vertical stabs above fourth line. Lower zone consists of widely spaced panels of 'Y' motif, those below the lugs being bordered by single vertical *tvaerstik* lines. Lugs are decorated with simple vertical lines. Horizon 4.
128. Almost complete profile. Bowl with small, low, unperforated lugs. *Tvaerstik*. 3 lines below rim, zone of short,

verticals above zone of narrow spineless herringbone interrupted by 4 lugs. Below this, decoration breaks into vertical panels of chevron and *tvaerstik* below the lugs and short horizontal panels in between. Extensive traces of paste inlay preserved. Horizon 4.

Pails

129. Incomplete. Horizontally perforated lugs astride upper and lower zones. Upper and lower zones and panels of lower zone are separated by broad straight lines. Line of skating motif below rim. Upper zone is filled with verticals, lower with alternating panels of verticals and zigzag. Vertical line on lug. Horizon 3.

130. Complete profile. Horizontally perforated lug at junction of upper and lower zones. *Tiefstich* and *tvaerstik*. Upper and lower zones are separated by broad straight line. Similar lines divide both zones into panels. Horizontal lines of *tvaerstik*; remainder of decoration, *Tiefstich*. Upper zone of band of verticals, lower zone with alternating panels of vertical lines beneath two horizontal lines of *tvaerstik* and zigzags. Lugs are decorated with single vertical lines. Service set with tureen No. 259. Horizon 3.

131. Fragmentary. Vertical lines. Very worn.

132. Incomplete. Fairly straight-walled bowl with at least 2 horizontally pierced plugs. *Tvaerstik*. 3 lines below rim, empty zone, followed by at least 3 more lines. Lugs, of which one is preserved and portion of second, occur along the lower band of lines and are decorated with simple vertical lines. Chevron panel below lugs. Horizon 4.

133. Complete. Straight-sided pail with four horizontal pinched out lugs and six pressed out feet. One or two horizontal *Tiefstich* lines below rim; panels of close-set vertical *Tiefstich* ending in 'fringe'. Horizon 6.

Non-lugged decorated bowls

134. Complete profile. Small, fairly straight walled bowl. *Tiefstich*. Zigzag line below rim, verticals covering entire body. Traces of paste inlay visible. Horizon 3.

135. Complete profile. Fairly straight walled bowl. *Tiefstich*. Upper and lower zones defined by two horizontal lines, zones filled with verticals. Horizon 3.

136. Almost complete profile. *Tiefstich* and *tvaerstik*. 2 discontinuous lines of *tvaerstik* below rim, upper zone of grouped vertical lines, separated from lower zone of grouped verticals by horizontal line. Late Horizon 3?

137. Incomplete. *Tiefstich*. Two discontinuous lines below rim, alternating panels of verticals, crude zigzags and crude zipper (?) motif. Late Horizon 3?

138. Incomplete. Large, coarse bowl. *Tiefstich*. 3 discontinuous lines below rim, alternating panels of single, pointed arcs and verticals above three more horizontal lines from which hang pendant groups of 3 verticals alternating with paired verticals. Late Horizon 3?

139, 140. Two similar bowls, one larger than the other. *Tiefstich* and *tvaerstik*. 3 lines of *tvaerstik* below rim, zone of short vertical lines above panels of longer vertical lines. Horizon 4.

141. Complete profile. Bowl with footring. Coarse *Tiefstich*. 3 lines below rim, line of 'C' motif, vertical panels terminating at base. Traces of paste inlay visible. Horizon 4.

142. Almost complete profile. *Tvaerstik*. 4 lines below rim, panels of four verticals on body, finger nail impressions around base. Horizon 4.

143. Complete profile. Small bowl. *Tiefstich*. 2 lines below rim, pendant panels of three and four verticals. Small footring. Horizon 4?

144. Incomplete. *Tiefstich*. 4 lines below rim, vertical panels on body. Horizon 4?

145. Almost complete profile. Bowl with footring (now missing). *Tvaerstik*. 3 lines below rim, followed by two discontinuous lines. Panels of verticals not unlike 'Y' motif on body. Traces of paste inlay visible. Service set with Nos 146 and 254. Horizon 4.

146. Complete profile. Small bowl with footring. Decoration similar to No. 145. Service set with Nos 145 and 254. Horizon 4.

147. Incomplete. *Tiefstich*. 3 lines below rim, alternating panels of verticals and horizontals. Horizon 4?

148. Almost complete profile. Small, crude bowl. *Tiefstich*. Single line below rim followed by alternating panels of two long horizontal and three short vertical lines. Horizon 4?

149. Incomplete. *Tiefstich* and *tvaerstik*. 3 lines of *tvaerstik* below rim and above alternating panels of 'Y' motif and 2 lines of horizontal *tvaerstik*. Below the latter are panels of 'Y' motif. Horizon 4.

150. Incomplete. *Tiefstich*. Decoration similar to above but without lower zone. Horizon 4.

151. Complete profile. Bucket-shaped bowl. *Tiefstich*. Panels of horizontal lines below rim, vertical panels on body. Horizon 4.

152. Almost complete profile. *Tvaerstik*. 3 lines below rim, followed by zone of horizontal blocks, with lower zone of alternating long and short blocks. Traces of paste inlay visible. Horizon 4.

153. Incomplete. Fairly straight-walled bowl. *Tvaerstik*. 4 continuous and 2 discontinuous lines below rim; large, double line of zigzag with pendant spaced blocks of verticals, possibly terminating at base. Horizon 4.

154. Almost complete profile. *Tiefstich*. 3 lines below rim, 3 horizontal blocks immediately below these, followed by 2 zones of alternating long and short, vertical blocks. Some paste inlay visible. Horizon 4.

155. Incomplete. *Tvaerstik*. 3 lines below rim, 2 zones of horizontal blocks. Horizon 4.

156. Incomplete. *Tiefstich* and *tvaerstik*. 2-3 lines below rim, alternating verticals and 'M' type motif. Horizon 4.

157. Fragmentary. Deeply impressed *tvaerstik*. Badly worn. Horizon 4.

158. Incomplete. Bowl with thick walls. Deeply impressed *tvaerstik* lines below rim. No sherds of lower part of body. Horizon 4.

159. Fragmentary. *Tvaerstik*. Badly worn. Possibly large zigzag.

160. Incomplete. *Tvaerstik*. 3 lines below rim, line of lozenge motif, alternating blocks of wide inverted multiple arcs and horizontal lines. Horizon 4.

161. Complete profile. Bowl with footring. *Tvaerstik*. Horizontal blocks below rim, discontinuous line of lozenge motif, more horizontal blocks above vertical blocks which terminate close to base. Horizon 4.

162. Fragmentary. *Tvaerstik*. 4 lines beneath rim, alternating vertical and horizontal blocks below. Trace of paste inlay visible. Late Horizon 4.

163. Fragmentary. *Tiefstich* lines below rim.

164. Fragmentary. Bowl with *tvaerstik* below rim.

165. Fragmentary. Thick-walled bowl with 2 lines of *tvaerstik* below rim. Band of verticals?

166. Complete profile. Large bowl with footring. Broad *Tiefstich*. 4 lines below rim, panels of zigzag above and separated from panels of verticals terminating at base of horizontal zigzag. Groups of short verticals on footring. Late Horizon 4 or early Horizon 5.

167. Almost complete profile. Large bowl. *Tiefstich* and *tvaerstik*. 4 lines below rim, with line of skating motif immediately below. 3 lines of large zigzag, above vertical blocks of alternating *Tiefstich* and *tvaerstik*. No sherds of base present but it is very likely that this bowl had a footring. Late Horizon 4 or early Horizon 5.

168. Complete profile. Large bowl. *Tiefstich* and *tvaerstik*. 3 lines *Tiefstich* below rim, triple line of zigzag above vertical blocks of alternating lines of *Tiefstich* and *tvaerstik*. Vertical stabs on footring. Late Horizon 4 or early Horizon 5.

169. Fragmentary. *Tiefstich*. 3 lines below rim; blocks below. Horizon 5.

170. Fragmentary. *Tiefstich*. Horizontal lines under rim. Various motifs. Similar to No. 169. Horizon 5?

171. Almost complete profile. *Tiefstich*. At least 3 lines below rim and above 4 zigzag lines; blocks of verticals on lower body. Rather thick base. Horizon 5.

172. Almost complete profile. Bowl with incurving rim. *Tiefstich*. 3 lines below rim followed by double line of zigzag above alternating panels of verticals and pointed arcs. Horizon 5.

173. Very small bowl with faint line below rim.

174. Incomplete. Horizontal line with groups of short, pendant stabs at intervals. Horizon 7.

175. Incomplete. Large, thick walled shallow dish. Smoothed walls. Horizontal line with fringe below rim. Horizon 7.

Non-lugged undecorated bowls

176. Incomplete bowl with low footring. Fabric and general quality suggest Horizon 5/6.

177. Incomplete. Undecorated bowl.

178. Incomplete. Undecorated bowl.

179. Incomplete. Broad hemispherical bowl of heavy fabric.

180. Complete profile of thick-walled bowl. Original perforation in the centre of base.

181. Almost complete profile of bowl of friable, gritty fabric.

182. Lower part and base of large dish/bowl.

183. Incomplete. Bowl similar to No. 181 but less friable.

184. Complete profile of bowl. Similar to No. 181 but less friable.

185. Complete profile of bowl. Similar to No. 181 but less friable.

186. Complete profile of finely made hemispherical bowl. Black fabric with few visible grits.

187. Incomplete profile of well-finished bowl. Orange fabric with small grits.

188. Almost complete bowl. Orange fabric with black core. Uneven, although smoothed, surface.

189. Almost complete profile. Bowl.

190. Incomplete small, strongly built bowl. Mottled grey and pink hard fabric with small grits.

191. Incomplete bowl. Similar to No. 190 but smaller.

192. Incomplete small bowl. Black-grey fabric with pink, crushed granite grit.

193. Incomplete. Bowl of fairly hard, beige fabric with grey core and small grits.

194. Incomplete bowl. Friable black fabric with medium-sized grits. Slight weak shoulder.

195. Incomplete bowl. Yellow fabric with black core and medium-sized grits.

196. Incomplete thin walled, uneven surfaced bowl with medium-sized grits.

197. Almost complete profile of heavy-walled bowl. Similar to No. 202 but with sandy fabric.

198. Complete. Single find from outside the chamber.

199. Complete. Single find from outside the chamber.

200. Open thick-walled dish. Well smoothed fabric.

201. Base of open thick-walled dish.

202. Incomplete bowl. Similar to No. 196 but of reddish, slightly thicker fabric.

203. Incomplete small bowl.

204. Almost complete profile of small, crude bowl.

205. Incomplete very small bowl with inturned rim.

206. Incomplete small bowl.

207. Incomplete small bowl.

208. Incomplete small, smoothly finished bowl.

209. Incomplete bowl.

210. Complete profile of tall bowl. Fine, thin fabric.

211. Incomplete small bowl.

212. Incomplete small bowl.

Necked bowls

213. Incomplete. Short neck and slight, rounded shoulder. Blocks of small stabs on shoulder. Horizon 7.

214a, b. Two shoulder sherds, from one or two shouldered bowls with blocks of small stabs on shoulder. Horizon 7.

215, 216. Incomplete. Two bowls with fairly long neck and rounded shoulder. Short blocks of vertical zigzag on shoulder. On No. 216 these are relatively deeply impressed, on No. 215 lightly scored. Horizon 7.

217. Fragmentary. Slashed cordon. Horizon 7.

218. Incomplete. Long neck and slashed cordon at base of neck. Horizon 7.

219. Incomplete. Long neck and slight, rounded shoulder, emphasised at intervals by low, slashed cordon. Horizon 7.

220. Incomplete. Fairly short neck and body curving in from base of neck; this junction is emphasised by low, slashed cordon. Slightly coarse fabric in comparison with some of the bowls in this series. Horizon 7.

221. Incomplete. Fairly short neck and small ledge-like shoulder emphasised at intervals by small, slashed cordons. Horizon 7.

222. Incomplete. Short neck and slightly rounded shoulder. Irregular line at base of neck. Small, low, slashed cordons at intervals on shoulder. Horizon 7.

223. Incomplete. Short neck, body curving in from base of neck; this junction is marked at intervals by a low, slashed cordon. Horizon 7.

224. Incomplete. Fairly short neck and very slight shoulder, emphasised at intervals by low, slashed cordon. Horizon 7.

225. Incomplete. Neck of medium length, slight shoulder emphasised by hyphenated line with pendant fringe. Horizon 7.

226. Incomplete. Short neck and small, ledge-like shoulder emphasised at intervals by slashed cordons. Horizon 7.

227. Incomplete. Short, slightly curved neck and small but clearly profiled shoulder with short lengths of slashed cordon most of which has fallen off. Horizon 7.

228. Fragmentary. Short neck, slight shoulder; junction of which is marked by grooved line. Horizon 7.

229. Incomplete. Neck of medium length and long body curving directly from base of neck. Horizon 7.

230. Fragmentary. Large bowl. Thin, very worn sherds. Horizon 7.

231. Incomplete. Fairly short neck and curved body. Friable fabric. Horizon 7.

232. Fragmentary. Small rim sherd. Horizon 7.

233. Fragmentary. Rim sherd from shouldered bowl with long neck. Horizon 7.

234. Incomplete. Fairly long neck and rounded shoulder. Irregular line at base of neck. Horizon 7.

235. Incomplete. Fairly short neck and small, ledge-like shoulder. Horizon 7.

Cordoned bowls

236. Almost complete. Large, shallow, thick-walled dish with slashed cordons at intervals close to rim, and slashed base. Smoothed walls. Horizon 7.

237. Almost complete profile. Shallow bowl with slashed cordon close to rim. Horizon 7.

Jugs

238. Complete profile. Jug of coarse fabric with slightly curved shoulder. Zigzag line below rim, otherwise plain neck, alternating panels of verticals and zigzag on shoulder and handle. Late Horizon 2. Earliest Horizon on site, also represented by Nos 113, 126, 239, 240.

239. Incomplete. Fairly coarse jug. Zigzag line below rim. Horizon 2.

240. Incomplete. Undecorated neck of coarse jug. Horizon 2.

241. Coarsely made handle of an otherwise unrecognised jug. Possibly Horizon 2.

Tureens

242. Fragmentary. Shoulder of tureen. Lozenge. Horizon 3/4.

243. Fragmentary. 2 shoulder sherds of a tureen with a sharply angled profile and shoulder decorated with panels of hurdle motif, zigzag and vertical lines. Horizon 3.

244. Incomplete. Zigzag line below rim with groups of vertical

lines on neck, possibly in vicinity of handle. Triangles pendant from broad straight line on shoulder. Horizon 3.

245. Incomplete. 3 lines of zigzag below rim, groups of verticals on either side of handle, filled triangles pendant from broad straight line on the shoulder. Handle is decorated with zigzag. Horizon 3.

246. Complete profile. Double zigzag line below rim, *tvaerstik* line at junction of shoulder and neck. Fine *Tiefstich* lines in vicinity of handle, pseudo-triangles on remainder of shoulder. Decoration on handle comparable to Issendorf (Tempel, 1972: fig. 4). Horizon 3.

247. Complete profile. Spouted tureen. Two lines of large zigzag below rim and third on shoulder. Groups of short verticals descend from shoulder onto body. Inverted arc motif below position of handle. Horizon 3?

248. Incomplete. Small, finely made tureen. Skating motif below rim, spaced panels of three vertical lines on neck, possibly only in vicinity of handle. Broad straight line at base of neck and hurdle pattern on shoulder. Horizon 3.

249. Incomplete. Conical neck, long, slightly curved shoulder and curved body. Rim tip is slightly everted. Zigzag line below rim, scattered groups of vertical zigzags on neck, filled triangles pendant from straight line on shoulder with groups of vertical lines running over shoulder onto body in vicinity of (absent) handle. Decorated panel below handle. Service set with funnel beaker No. 57. Horizon 3.

250. Incomplete. Conical neck and rounded shoulder. Everted rim tip. Position of handle shown by negative. Decoration is carefully executed throughout. Band of herringbone below rim, small rusticated triangles pendant from a straight line on shoulder except in immediate vicinity of handle. At regular intervals along shoulder and descending onto body are panels of vertical chevrons and vertical lines pendant from zigzag, the number of verticals incorporated in the design increasing from one to three with distance from handle. Below handle the panel is flared. Horizon 3.

251. Incomplete. Conical neck and short, rounded shoulder. Line of *hartstempel* beneath rim and above groups of finely incised inverted pointed multiple arcs. Filled triangles pendant from line on shoulder and vertical lines on either side of handle. Handle is also decorated with vertical lines. Horizon 3.

252. Incomplete. Slightly flaring neck and short rounded shoulder. *Tvaerstik*. Two lines below rim. Inverted arcs on neck, line of *tvaerstik* at base of neck and stab marks on shoulder. Vertical *tvaerstik* below handle. Some paste inlay visible. Horizon 3.

253. Incomplete. Sharp shoulder. *Tvaerstik*. At least 3 lines beneath rim and some vertical lines on neck. Triangles on shoulder and vertical lines of double stamp on body. Horizon 3.

254. Incomplete. Conical neck and short, rounded shoulder. *Tiefstich* and *tvaerstik*. 3 lines below rim, long panels of sloping *Tiefstich* on neck probably on either side of (absent) handle, stab marks on shoulder. Some paste inlay visible. Service set with Nos 145, 146. Horizon 3.

255. Incomplete. Conical neck and short sharp shoulder. *Tiefstich* and *tvaerstik*. Two lines of *hartstempel* below rim. Pairs of *Tiefstich* and *tvaerstik* on neck, pseudo-triangles pendant from straight line on shoulder. Negative of handle. Horizon 3.

256. Complete profile. Short, sharp shoulder. Line of pseudo-*tvaerstik* (*Tiefstich* with short vertical strokes across it) below rim. Groups of vertical lines on neck, small pseudo-triangles pendant from straight line on shoulder and vertical pseudo-*tvaerstik* beneath handle descending onto body. Handle bears stab-like impressions. Horizon 3.

257. Almost complete profile. Slightly conical neck and short, rounded shoulder decorated with *tvaerstik* and quatrefoil impressions. Blocks of three horizontal *tvaerstik* lines below rim, small filled triangles pendant from straight line on shoulder and panels of vertical *tvaerstik* pendant from zigzag and quatrefoil impressions. Horizon 3/4.

258. Almost complete profile. Conical neck and short sloping shoulder. *Tiefstich* and *tvaerstik*. 3 lines of *tvaerstik* below rim,

narrow blocks of 2 horizontal lines of *tvaerstik* on neck, filled triangles pendant from straight line on shoulder and panels of *Tiefstich* vertical lines and vertical chevrons descending from shoulder, similar to No. 250. Probable handle bears single line of *Tiefstich*. Horizon 3.

259. Almost complete profile. Conical neck short, sharp, slightly sloping shoulder and deep body. *Tvaerstik*. Narrow blocks of horizontal lines on neck, filled triangles pendant from line on shoulder. Service set with pail No. 130. Horizon 3.

260. Incomplete. Conical neck and very short, rounded shoulder. *Tvaerstik*. 3 lines below rim covering most of neck, line of *Tiefstich* at base of neck with pendant stab impressions on shoulder. Horizon 4.

261. Incomplete. Short, rounded shoulder. *Tvaerstik*. 3 lines below rim, lozenge motif on neck, stab marks at junction of neck and shoulder, lozenge motif on upper body. Some paste inlay visible. Horizon 4.

262. Incomplete. Conical neck and short, sharp shoulder. *Tvaerstik*. 3 lines below rim, groups of stab marks on neck, 'X' motif on shoulder. Horizon 3/4.

263. Almost complete profile. Large, thick-walled tureen. Slightly conical neck, short sloping shoulder. Alternating blocks of vertical chevron and horizontal lines on neck, short verticals on shoulder, and in immediate vicinity of base (which is missing). Below handle is long panel of decorations similar to the vertical neck panels. Horizon 4?

264a. Incomplete. Long vertical neck, short, sloping shoulder. *Tvaerstik*. 3 lines below rim, large double zigzag on neck, short verticals on shoulder, some verticals on body. Horizon 4.

264b. Fragment. Body sherd with decoration similar to No. 264a but different fabric.

265. Incomplete. Two handled tureen. Slightly conical neck and short, rounded shoulder. *Tvaerstik*. 3 lines below rim. Lozenge and multiple arcs on neck. Shoulder is decorated with various *Tiefstich* marks. On either side of handles groups of lines descend onto body. Handles decorated with vertical lines and chevron. Horizon 4.

266. Almost complete profile. Fairly long neck and very short shoulder. Very deep *Tiefstich*. 4 lines below rim, multiple arcs on neck, very deep line along shoulder and blocks of verticals on body. Multiple arc below handle. Traces of paste inlay visible. Horizon 4.

267. Incomplete. High, cylindrical neck and short, sharp, ridge-like shoulder and small lug handle. Very deeply impressed *Tiefstich*. 4 lines below rim, multiple arcs on neck. At base of neck deeply impressed 'pseudo-skating' line. Alternating multiple arcs and blocks of verticals on body. Horizontal lines on handle. Horizon 4.

268. Incomplete. Conical neck and short, rounded shoulder. *Tvaerstik*. 3 lines below rim, multiple arcs and short lines on neck, line at base of neck, multiple arcs and vertical lines (in vicinity of the handle) from shoulder onto body. Horizon 4.

269. Incomplete. Horizontally perforated, undecorated lug on shoulder. *Tiefstich*. 3 horizontal blocks below rim, arcs on neck, 'C' motif on shoulder and short blocks on body. Horizon 4.

270, 271. Two near identical tureens, one complete profile (No. 271). Fairly high cylindrical necks, very small shoulder, and footing base. Horizontal blocks below rim, arcs on neck, line at base of shoulder and short vertical lines running over shoulder on either side of handle. Multiple arc motif on handle and largish multiple arc below. Service set. Horizon 4.

272. Incomplete. Very short, rounded shoulder. *Tvaerstik*. 3 lines below rim, multiple arcs on neck, line at base of neck and vertical *Tiefstich* lines running over shoulder onto body. Vertical lines on lower half of handle. Horizon 4.

273. Incomplete. High cylindrical neck and extremely short, ledge-like shoulder. *Tvaerstik*. 3 lines below rim, multiple arcs and horizontal lines on neck and line of *tvaerstik* at base of neck. Horizon 4.

274. Incomplete. Neck only preserved. *Tvaerstik*. 4 lines below rim, double 'N' type motif on neck, horizontal line at base of neck. Traces of paste inlay visible. Horizon 4.

275. Incomplete. Very short, ledge-shoulder. Line of *tvaerstik* at junction of neck and shoulder, stab marks on shoulder. Horizon 4.

276, 277. Incomplete. 2 almost identical tureens with high, slightly conical necks and almost unmarked shoulders. 3 lines below rim, groups of 3 (No. 276) or 4 (No. 277) arcs on neck. Shoulder is marked by horizontal line below which are scattered groups of small figure-of-eight motif. Arcs below lug-like handles. No. 276 is slightly larger than No. 277. Both vessels were found together. Horizon 4.

278. Almost complete. Cylindrical neck, sloping shoulder and fairly angular profile. *Tvaerstik*. Horizontal blocks on neck and shoulder. Horizon 4.

279. Almost complete profile. Slightly flaring, long neck and small shoulder. *Tvaerstik*. 3 lines below rim, vertical lines on neck adjacent to handle, line at base of neck, vertical lines running onto body in vicinity of handle. Inverted 'V' motif on small, lug-like handle. Horizon 3/4?

280. Almost complete profile. Slightly flaring neck and rounded shoulder. *Tvaerstik*. 4 lines below rim covering most of neck, discontinuous horizontal blocks on shoulder, inverted 'V' motif on handle. Horizon 4.

281. Incomplete. Cylindrical neck and fairly long, sloping rounded shoulder. Crude *tvaerstik*. Horizontal lines on neck, alternating panels of horizontal lines and arcs on shoulder. Horizon 4.

Tureen-amphora (see also Nos 320-325)

282. Complete profile. Unperforated lugs along shoulder. *Tvaerstik*. 3 lines below rim, line of double arcs on neck, *Tiefstich* line at base of neck, alternating long blocks and 2 lines of stabs. Vertical stabs at base. Traces of paste inlay visible. Lugs bear vertical *Tiefstich* lines. Well finished. Horizon 4.

Amphorae, miscellaneous

283. Incomplete. Two handled tureen with slightly conical neck and long, sloping, rounded shoulder. *Tvaerstik*. Horizontal blocks on neck with multiple arcs above handles. Horizontal lines on shoulder except below handles where panels of vertical lines are visible. Horizontal lines on handles. Horizon 4.

284. Incomplete. Flaring neck and long, sloping shoulder, 4 small lugs at base of neck. *Tiefstich*. Undecorated neck and lugs. Alternating panels of arcs and horizontal and vertical lines on shoulder. Horizon 4.

285. Almost complete profile. 4 lugs straddling shoulder. *Tiefstich*. 2 lines below rim, multiple arcs on neck, line along shoulder, vertical blocks on body. Small arcs on lugs. Horizon 4.

286. Incomplete. Small lug. Horizontal lines on neck.

287a-c. Fragmentary. *Tiefstich* and *tvaerstik*. 3 lines below rim; remainder of decoration unreconstructable, *Tiefstich* at base. Traces of paste inlay visible. Horizon 4.

Amphorae type I

288. Almost complete profile. Long cylindrical neck and long sloping shoulder with very small lugs at base of neck. *Tvaerstik*. 3 lines below rim and 2 at base of neck, with short fringe; alternating blocks of horizontal lines and lozenge motif on shoulder. Traces of paste inlay visible. Thin-walled well made vessel. Horizon 4.

289. Almost complete profile. No sharp distinction between neck and shoulder. Lugs high on neck. *Tiefstich* and *tvaerstik*. *Tvaerstik* lines on neck, blocks of horizontal *tvaerstik* alternating with multiple arcs of *Tiefstich* on shoulder and handle. Horizon 4.

290. Incomplete. Slightly flared neck and sloping shoulder. No sherds of body. *Tvaerstik*. Horizontal lines below rim and on most of neck. Traces of paste inlay visible. Horizon 4.

291. Incomplete. Small, undecorated lugs at junction of neck and shoulder. *Tiefstich* and *tvaerstik*. 4 lines of *tvaerstik* on neck, blocks of vertical *Tiefstich* on body. Horizon 4.

292. Incomplete. Cylindrical neck and sloping shoulder. 4 small lugs at base of neck. *Tvaerstik*. Horizontal lines on neck,

vertical blocks on shoulder and body. Horizon 4.

293. Incomplete. Cylindrical neck and rounded body. *Tvaerstik*. Horizontal lines on neck; horizontal blocks on body; arcs on lugs. Horizon 4.

294. Complete profile. Vertical neck, round body, 4 small perforated lugs. Undecorated. Type 1/2.

295. Incomplete. Funnel beaker-like amphora. *Tiefstich*. 3 lines below rim, horizontal blocks on neck, blocks of vertical lines from shoulder. Low, pierced lugs on shoulder. Horizon 4.

296. Incomplete, similar to No. 295, but smaller. *Tiefstich*. Horizontal blocks on neck, zigzag on shoulder and vertical lines on body. Vertical lines on lug. Horizon 4.

Amphorae type 2

297. Incomplete. Slightly flaring neck and round body. *Tiefstich*. 3 lines below rim, lozenge on shoulder with horizontal lines on shoulder and vertical blocks on body. Arc below lug. Horizon 4.

298. Incomplete. Funnel beaker-like amphora. *Tiefstich*. Multiple zigzag on neck. Hatched line at base of neck, vertical lines on body. At least one lug. Horizon 5.

299. Incomplete. 4 plain lugs, in 2 pairs. Horizontal lines on neck, fringe on shoulder, vertical panels on body. Fine *Tiefstich*. Horizon 4/5.

300. Complete profile of extremely fine, well finished amphora with cylindrical neck and rounded body. Lugs at base of neck. Very fine, black, burnished fabric. Very regular round tipped *Tiefstich*. Horizon 5.

301. Incomplete. Flaring neck and rounded shoulder. *Tiefstich*. 3 lines below rim, undecorated neck, stab marks along base of neck, panel of zigzag on shoulder and vertical blocks on body. Traces of paste inlay visible. Horizon 5.

302. Incomplete. Fringe at base of neck. Triple line of zigzag on shoulder, vertical blocks on body. Horizon 5.

303. Incomplete. Fine *Tiefstich*. 2 lines below rim with pendant fringe, line at base of neck with pendant fringe, double zigzag along shoulder, vertical blocks on body. Horizon 5.

304. Incomplete. Cylindrical neck and long, rounded shoulder. *Tiefstich* and *tvaerstik*. 3 lines of *tvaerstik* below rim, lozenge motif on neck, non-reconstructable pattern on shoulder and line of *tvaerstik* above lozenge on upper body. Arcs on handle. Might in fact be a tureen instead of amphora. Horizon 4.

305. Complete profile. Cylindrical neck, rounded body, 2 lugs at base of neck. Line at base of neck with pendant fringe. Grooves. Horizontal lines below rim with double line of stab marks. Line at base of neck with stab marks. Alternating panels of verticals and zigzags. Double line of stab marks at base. Traces of paste inlay visible. Horizon 5.

306. Incomplete. Slightly flaring neck, gently sloping shoulder. *Tiefstich*. 4 horizontal lines below rim, horizontal line on shoulder, vertical panels of short and long lines. Horizon 5.

307. Incomplete. Slack profiled funnel beaker-like amphora. Small undecorated lug of shoulder. Double zigzag on neck, vertical panels on body. Horizon 4?

308. Incomplete. Small, thin-walled amphora with at least two lugs spanning shoulder. Multiple zigzag on neck, fringe on shoulder, alternating blocks of multiple zigzag and verticals on body. Undecorated lug. Horizon 5.

309. Incomplete. Small, thin-walled amphora with at least 2 lugs. 3 lines below rim, zigzag on neck, alternating blocks of zigzag and verticals on body. Vertical lines on lugs. Horizon 5.

310. Incomplete. 2 lugged amphora. *Tiefstich*. 3 lines below rim, line of zigzag on neck, fringe from base of neck, blocks of verticals on body. Undecorated lugs. Horizon 5.

311. Incomplete. Small, thin-walled amphora body. Fringe along shoulder, alternating blocks of verticals and multiple zigzag on body. Horizon 5.

312. Incomplete. Small thin-walled amphora of exceptionally fine fabric. Vertical blocks on body. Horizon 5?

313. Fragmentary. Amphora body. *Tiefstich*. Alternating long and short blocks of verticals. Horizon 5?

314. Incomplete. Small, thin-walled neck of amphora. 3 lines

below rim, double zigzag on neck. Horizon 5.

315. Fragment. Lug from amphora not otherwise recognized.

316. Incomplete. Flaring neck and rounded shoulder. *Tiefstich*. At least 2 lines below rim, horizontal panels alternating with single arcs on neck, no lower body sherds. Fairly similar to No. 317, but different fabric. Horizon 4?

317. Almost complete profile. Small amphora with probably only 2 lugs. *Tiefstich*. Horizontal lines on neck with arcs, vertical blocks on body. Horizon 4.

318. Almost complete profile of vessel with short, cylindrical neck and round body. 2 horizontally pierced lugs at junction of neck and body, line of pointed *Tiefstich* just below rim.

319. Incomplete vessel with sloping shoulder and rounded body. Horizontally pierced large lug(s) at junction of neck and shoulder. Undecorated.

Tureen-amphorae (see also No. 282)

320. Incomplete. *Tiefstich*. Single line below rim, horizontal blocks on neck, vertical blocks on body. Horizon 5.

321. Incomplete. *Tiefstich*. 4 lines below rim, blocks of close-set, multiple zigzags on neck, line at base of neck with pendant fringe. Very slight traces of paste inlay visible. Horizon 5.

322. Incomplete. No neck sherds. Hollow stamp impressions. Triple line at base of neck, broad panels on body. Horizon 5.

323. Incomplete. Bosses in place of lugs. Hollow stamp impressions. Single line below rim, blocks on neck, straight line at base. Horizon 5.

324. Incomplete. Bosses in place of lugs. Hollow stamp impressions. 2 lines below rim with blocks on neck. Line at base of neck with close-set panels below. Horizon 5.

325. Incomplete. Similar in shape to Nos 323 and 324. Low unpierced bosses in place of lugs. Undecorated. Horizon 5?

Shouldered lugged and non-lugged vases

326. Incomplete small bowl. Slight, conical neck and single, horizontally perforated lug.

327. Incomplete bowl with lugs. Similar to No. 326.

328. Incomplete undecorated funnel beaker-like vessel. 2 pairs of horizontally perforated lugs on neck.

329. Incomplete small vessel. Flaring rim and at least one small lug at base of neck.

330. Incomplete small vessel. Flaring neck and horizontally pierced lug on neck.

331a-e. Sherds with small, horizontally pierced lugs, from vessels not otherwise identified.

332. Fragments of vessel. Similar to Nos 342-346.

333. Incomplete small funnel beaker-like vessel.

334. Incomplete small, thin-walled vessel.

335. Incomplete small vessel.

336. Fragment of small funnel beaker-like vessel.

337. Incomplete vessel. Slightly flaring neck, long shoulder. No body sherds recognized but break at end of neck suggests sharply angled body.

338. Incomplete small, funnel beaker-like vessel.

339. Incomplete small, funnel beaker-like vessel.

340. Incomplete small vessel.

341. Incomplete funnel beaker with flaring rim and ledge-like shoulder.

342. Incomplete vessel with short, cylindrical neck, sloping shoulder and high body. Two lugs at base of neck.

343. Incomplete vessel with short, slightly flaring neck and long sloping shoulder. Probably lugged although none recognized.

344. Incomplete undecorated tureen-like vessel.

345. Incomplete vessel. Slightly flaring neck with lug at junction of neck and shoulder.

346. Incomplete vessel with short neck and round body. 2 lugs spanning junction of neck and shoulder. Heavy fabric.

347. Lower portion of vessel.

348. Incomplete, possibly necked, vase. Black fabric with medium-sized grits clearly visible in the surface.

Collared flasks

349. Incomplete. Fairly short neck with wide throat. Collar close to base of neck. Spherical body. Grouped lines on shoulder.

350. Incomplete. Wide throat with broad collar less than half way down neck and flat shoulder.

351. Incomplete. Decorated collared flask with biconical body. 4 horizontal lines at base of neck, alternating blocks of short and long verticals on shoulder.

352. Fragmentary. Undecorated.

353. Incomplete. Shoulder of undecorated, biconical body.

354. Incomplete. Complete short neck with collar.

355. 8 assorted sherds of collared flasks apparently not represented in the above list, 1 collar only illustrated.

356. Almost complete profile. Short neck with throat and long biconical shoulder and body.

357. Incomplete. Spherical body.

358. Incomplete. Spherical body. Fairly wide throat with collar midway between rim and base of neck.

359. Incomplete. Narrow throat, biconical body.

Biberons

360. Incomplete. Biberon.

361. Incomplete. Biberon.

Miscellaneous

362. Incomplete. Flat shoulder. Highly burnished, black, leathery finish.

363. Incomplete jug with spout formed by pressing out rim. The profile is not unlike some of the more uncouth funnel beakers.

Featured sherds

30 complete bases, including 7 decorated, 8 low foot rings, 1 protruding foot, and 1 perforated base. In addition to these there are 45 fairly complete bases and 41 sherds of bases. 30 decorated rims apparently representing vessels other than those described in the foregoing catalogue, and 20 decorated body sherds are also illustrated. Approximately 3000 undecorated and, for the most part, featureless sherds could not be assigned to specific pots and are not illustrated. Although as a percentage of the total number of sherds this appears quite high, many of these sherds are extremely small fragments.

3.6. Post TRB finds

The sherds of an EGK amphora of *Strichbündel* type (No. 364) found in the chamber area probably represent the end of continuous activity, dating to about 2900-2800 cal BC. Amphorae of this type occur sporadically in *hunebeds*; a similar find was made in the nearby *hunebed* G3 (Brindley, 1983: fig. 7). Two smaller EGK amphorae may have been present (Nos 365-366). The number of fragments is too small, however, to allow for reconstruction of shape and decoration.

Fragments of three Bell Beakers were found. Two of these (Nos 367-368) are well-made classical examples of Maritime Bell Beakers, which can be dated to about 2500 cal BC. The third one (No. 369) with simple linear comb ornament is a local type, and probably slightly younger.

The sherd of a *kogelpot* (No. 370) which was found in the extraction pit of a side stone is of the type current during the late 10th and 11th centuries

AD. This fragment almost certainly dates the destruction of the *hunebed*.

4. ANALYSIS OF WHITE FILLING

Traces of white filling remained in the *Tiefstich* and *tvaerstik* lines on many sherds. Originally this must have given the pottery a highly ornamented and dramatic appearance, contrasting with the usually dark colour of the fabric. This filling must have disguised, in many cases, the precise nature of the *Tiefstich/tvaerstik* technique. The definition of *tvaerstik* has been given as decoration executed along a guide line (Bakker, 1979: p. 179). This should perhaps be amended to decoration along a guideline which itself is a dominant visual aspect of the filled decoration. Some of the variations which occur in *Tiefstich* lines during Horizon 3 are executed along a guideline, and in some cases the end result must have resembled *tvaerstik* (compare Nos 251, 255). Similarly some of the close-set *tvaerstik* lines when filled resembled *Tiefstich* lines (Nos 270, 282). The depth of the impressions, while creating a particular effect when empty, is not noticeable when filled. Contrasting width and outline of stylus heads are more important.

Analysis of the white filling of *Tiefstich/tvaerstik* impressions from six pots (5 from G2 and 1 from Bronneger D21 for comparative purposes) was carried out by Peter Zijlema, a student at the Department of Inorganic Chemistry, University of Groningen. The material was examined by means of X-ray diffraction, using a Guinier-Hägg camera. The samples were taken from pots G2:127, 128, 136, 142 and 154, and from Bronneger 1918/X.31** (collection B.A.I.). All six samples yielded the same result: hydroxy-apatite, or $\text{Ca}_5(\text{PO}_4)_3\text{OH}$. This is the main mineral in bone. A recent study by Shipman, Foster and Schoeniger (1984) has shown that after heating to 600°C or more, the crystal size of hydroxy-apatite increases, and that the lines of the X-ray diffraction pattern become sharp and well-defined. All six samples showed these sharp lines. Therefore the filling consisted of a paste of bone, burnt to 600°C or more. It is very likely that burnt bone was used, because this is more easily crushed and because fresh bone would have shrunk during the firing process and fallen out.

5. DISCUSSION OF POTTERY BY TYPE

5.1. Summary of typochronology used in this paper.

A series of horizons within the pottery sequence are proposed on the basis of the material from Glimmen G2 and a general survey of other material.

These are discussed in detail elsewhere (Brindley, 1986). A short summary only is given.

Horizon 1: lugged or perforated bowls, round bodied jugs, round bodied funnel beakers, round bodied lugged beakers, collared flasks. Some, chiefly horizontal, elements immediately below the rim, vertical strip decoration immediately below this.

Horizon 2: lugged bowls/pails, slightly more angular jugs and possibly lugged beakers, funnel beakers, collared flasks, biberons. Horizontal, narrow band immediately below rim. Vertical strips broaden throughout horizon and are interspersed with vertical lines. Strips on shoulders broaden into panels, and are occasionally replaced by triangles.

Horizon 3: lugged bowls/pails, tureens, lugged beakers, funnel beakers, collared flasks, biberons. Broad, well-defined horizontal zone below rim. Broad strips and well-defined panels on body. Shoulders frequently include triangles in place of panels.

Horizon 4: bowls/pails, tureens, amphorae type 1, funnel beakers, lugged beakers, collared flasks, biberons. Upper zone loses its vertical element, which may be replaced by multiple arcs, large zigzag, or horizontal blocks. Alternating blocks replace panels of the lower body. Shoulders disappear as an area of specific decoration.

Horizon 5: bowls, tureen-amphorae, amphorae type 2, a small number of funnel beakers, funnel beaker cups, collared flasks. Two regional styles identified. Heek-Emmeln style, chiefly in the Emsland-Westphalia area, is characterized by bands of large zigzag and horizontal blocks incorporating up to 13 lines; Uddelermeer-Anlo style, predominating in Northern and Central Netherlands and characterized by small close set zigzag in bands or blocks, and blocks of *Tiefstich* and of hollow stamp.

Horizon 6: bowls, necked bowls, tureen-amphorae, funnel beaker cups, collared flasks. Neck is usually contracted, and decoration consists of continuous bands or oblong blocks of zigzag or related motifs, or horizontal lines. Blocks or bands on shoulder become very narrow and restricted to uppermost part only.

Horizon 7: bowls, necked bowls, lugged and non-lugged shallow bowls, funnel beaker cups, collared flasks. Neck decoration disappears entirely. Very narrow horizontal blocks of decoration on the top of the shoulder only. Many undecorated vessels. Applied cordons.

5.2. Funnel beakers and funnel beaker cups

5.2.1. *Funnel beakers* (Nos 1-102)

About 102 funnel beakers were identified. All of these have necks which flare to a greater (e.g. Nos 12, 57) or lesser extent (e.g. No. 45) and bodies with either sharp (e.g. Nos 16, 58) or rounded, high

shoulders (e.g. Nos 2, 4) or, occasionally, more spherical bodies (e.g. No. 1). About seventy-two have decoration of some form, most frequently on the body but extending onto the neck (although never on the neck alone). Apart from four examples of *tvaerstik* impressions (Nos 20, 23, 31a, 51, but possibly also Nos 24, 63, 68), the decoration is in *Tiefstich*.

Neck decoration consists chiefly of zigzags, single or multiple, usually below the rim (Nos 49-52) or at the base of the neck (Nos 53-63), or as large, multiple zigzags covering most of the neck (Nos 46-48). There are also three instances of multiple arcs (Nos 65-67). Decorated necks are always associated with short, high shouldered bodies. A horizontal line (or lines) at the base of the neck is present on about 50% of the decorated beakers; occasionally this is the only form of decoration on the vessel (e.g. No. 69, a good parallel for this vessel is Emmeln No. 114 (Schlicht, 1968)). Body decoration almost always consists of multiple vertical lines (exception, No. 68 has horizontally disposed stabs on an unusually long shoulder), as a short fringe (Nos 43, 49), extending halfway down the body (Nos 56, 61), or to the base (No. 15). These lines may be grouped in alternating blocks of long and short lines (Nos 37-39) or with blank spaces (Nos 40, 44, 67).

The small, thin-walled funnel beakers (Nos 52, 54, and especially 64) bear a resemblance to some of the smaller amphorae of type 2 (Nos 298, 301-303) in terms of their size, thin fabric and general decoration. The amphorae can usually be distinguished by their more pronounced shoulders and more sophisticated decoration, but the presence or absence of lugs is taken as the deciding factor in this assemblage.

Nos 70 and 71 are apparently unfinished decorated funnel beakers. The surfaces have been only partly smoothed and bear only very slightly sketched lines which seem to be guidelines for more formal decoration never carried out.

The undecorated funnel beakers show a much greater degree of variation in terms of shape, size and finish. Some (e.g. Nos 97, 99) are very large and of good, hard fabric, and in a domestic context would be termed 'storage vessels'. Nos 86 and 102 provide good parallels for what were formerly called 'pre-Drouwen' funnel beakers (Bakker, 1979: p. 117). The sherds of No. 86 were found amongst the chamber debris and there is no reason to think that the vessel was not deposited there. No. 102 was found in a pit outside the chamber which had probably been inserted through the covering mound (see 2.5). No. 72 is remarkable for the line of small pits immediately below the rim, parallels for which were found at Beekhuizerzand (Modderman et al., 1976: fig. 9) at Emmen D40 and Eexterhalte D14 (collection B.A.I.). The variations which occur in

the quality and size of these funnel beakers suggest that there was no particular choice made in terms of the pottery which might be deposited in the burial chamber.

Early funnel beakers are not well-known in the West Group in clearly documented, small assemblages. Their precise characteristics are therefore unknown, but it is likely that they resembled funnel beakers of the Fuchsberg Group (Schwabe-dissen, 1979) and the funnel beakers from Bistoft (Johansson, 1981), which are slightly older than or contemporary with the earliest part of the West Group. The funnel beaker No. 38 which was found in the flat grave (see 2.5) is possibly of this type, but as pointed out before, its stratigraphic relationship to the *hunebed* which (on the basis of the earliest pottery found in the chamber area) was constructed sometime after the beginning of Horizon 1, is unclear. The flat grave may also have been inserted after the construction of the main tomb.

The range of funnel beakers in use by Horizon 2 is well-documented in the assemblages of Zeijen, Diever and Hooghalen (Bakker, 1979: figs B3-5, B12-15). The funnel beakers from these sites show vertical and flaring necks, angular and rounded bodies, high, short and long shoulders and varied, although chiefly vertical, linear decoration on the bodies, all occurring side by side. Funnel beakers of these types remained in use until Horizon 5. The G2 funnel beakers with only these characteristics cannot therefore be precisely dated. However, necks which are less frequently decorated, are sometimes a more reliable indicator of date. Multiple arcs occur on the necks of Nos 65-67. This motif belongs primarily to Horizon 4, to which these funnel beakers probably belong. A more pointed form of multiple arc occurs during Horizon 3. The larger, usually multiple, zigzag which covers the main part of the neck (Nos 45-48) is a decorative motif of Horizons 4 and 5; it appears on late tureens, tureen-amphorae and bowls of Horizon 4 (Zuidwolde-Ekelberg, Mesum: Bakker, 1979: figs B16-18; Sleen-Kruidhaarsveld: Van Giffen, 1937: fig. 5) and of Horizon 5 (Heek-Emmeln Style, e.g. Wechte Nos 193-196). Another form of zigzag which occurs on the necks of funnel beakers (Nos 52, 61) also occurs on amphorae type 2 of Horizon 5 (Uddelermeer-Anlo Style). These funnel beakers are therefore the very last of the series of true funnel beakers. Zigzags immediately below the rim are not closely datable unless associated with other distinguishing motifs e.g. groups of vertical lines (Bronneger: Knöll, 1959: 28:3), which are a feature of Horizon 3 decoration. These zigzags by themselves are also known to occur during Horizon 4. Examples are known from Horizon 4 contexts (Landersum: Bakker, 1979: fig. 15:3a).

5.2.2. *Funnel beaker cups* (Nos 103-110)

In his discussion of funnel beakers, Bakker (1979: p. 54) includes small, single lugged, 'cup-like' vessels similar Nos 103-109 of this text at the end of the funnel beaker series, dating them to his phase E2 and describing them as "seems to be only a vague shadow of the earlier funnel beaker". As no suitable term has been given to these vessels, I have adopted the term 'funnel beaker cups'. There are at least seven of these cups at G2 while three small, horizontal lugs (Nos 110a-c) suggest that there were originally about ten. In all cases, the constriction between neck and the practically shoulderless body is very slight. A single small thumbshaped horizontal lug or, in one case, a small boss (No. 107), is usually present above the shoulder and the bases normally have a low standing.

Funnel beaker cups are fairly well associated with material of the later TRB phases. At G2 itself, one of these cups (No. 103) was found together with a Horizon 6 pail (No. 133) in a pit which also produced datable charcoal (4380±40 BP, GrN-6156). Funnel beaker cups form an integral part of several important late TRB assemblages (Beekhuizen: Modderman et al., 1976: fig. 6, pp. 3-5; Angelslo, Spier and Allardsoog: Bakker & Van der Waals, 1973: figs 5, 10). The first of these indicates that funnel beaker cups date from early in Horizon 5, the other shows a broader, more bowl-like variant of the same type in use during the latest stage of the TRB, Horizon 7; the Glimmen cup with its Horizon 6 association falls neatly between the two. The rather crude and shapeless funnel beaker (No. 102) may possibly point in the typological direction from which these funnel beaker cups originated.

5.3. *Lugged beakers* (Nos 111-112)

These vessels never occur in large numbers. The earlier of the two, No. 111, is represented only by some finely decorated neck sherds. It provides an excellent parallel for the small lugged beakers from Exloo D30 (Brindley, 1986: fig. 5). These lugged beakers are absolutely typical for Horizon 3. The second lugged beaker (No. 112) is well-preserved and almost complete, closely resembling examples from Emmeln (Schlicht, 1968: No. 51) and Gross Berssen (Schlicht, 1972: Nos 88, 131, 160). It belongs to Horizon 4.

See also under Amphorae for remarks on the similarity of early amphorae to lugged beakers.

5.4. *Lugged bowls (dishes and shallow bowls Nos 113-128, pails Nos 129-133)*

No. 113 is unusual in several ways – the flaring upper portion of the profile, the absence of vertical

lines between the two lines of zigzag on the outer rim surface and the zigzag line on the inner rim surface. Parallels for this last occur at Noordlaren (Bakker, 1982/83: fig. 23:52), Wulfsten, Kr. Osnabrück (Knöll, 1959: 16:13), Gross Berssen (Schlicht, 1972: No. 21), Emmeln (Schlicht, 1968: No. 176), Drouwen D26 (unpublished, excavation Bakker), and an unprovenanced example in the collections of the B.A.I. which is possibly from Bronneger D21/-D22. It has no chronological significance. This bowl is the earliest bowl in the assemblage. Its narrow horizontal band below the rim and the relatively narrow panels beneath may be compared with the decorative style of Horizon 2 material. The bowls Nos 114-126 and pails Nos 129-131 form a very homogenous group in terms of decoration, shape and style and all fall within the general definition of Horizon 3. As a group they indicate some of the difficulties of the Bakker system of phases. Few of the individual bowls are assignable to specific phases which are based on a typology of two pot forms – shoulderless lugged and non-lugged bowls on the one hand and jugs/tureens/-amphorae on the other (Bakker, 1979: pp. 64-66). In terms of bowls, the phases are rather scantily outlined, with the use of true zigzag as a main defining characteristic of Phase B leading to the exclusion of many bowls on which the zigzag lines have been replaced by similar but alternative motifs or techniques (e.g. Nos 114-121) but which are otherwise identical. Similarly, the definition of Phase C bowls is unsatisfactory, being based on a change in a single decorative element – the replacement of the zigzag line(s) at the base of the upper zone by a broad, *Tiefstich* line and by two trends, the breaking of the lines immediately below the rim into short lengths and the grouping of verticals within the upper zone. Of these two trends, in fact the former is very rarely found without *tvaerstik* (i.e. Bakker's D1) ornamentation while the latter occurs only sporadically. Continuous lines below the rim and bands of continuous vertical lines occur commonly on Phase D1 bowls. The replacement of the lower zigzag line is most striking when it is replaced by a broad grooved or *Tiefstich* line and especially when this occurs in conjunction with a similar partitioning of the vertical patterns of the lower zone and the spacing of motifs within the resulting panels. Occasionally, the partition lines may even penetrate the upper zone as well, as the pail No. 130 shows, thus constituting a fine and well-organized decoration, but this is comparatively rare and cannot be regarded as chronologically important. A second difficulty with the application of Phases B and C as defined, is the number of bowls which lack some small decorative element and therefore do not fit into any of the given phases. According to Bakker's definitions, Nos 119, 120 and 125 are incompletely decorated. But such

decorative schemes are not uncommon and are best treated as variants within the style.

Examination of material in the collections of the I.P.P. and the B.A.I. and the published inventories of Wechte (Knöll, 1983), Emmeln and Gross Berssen (Schlicht, 1968; 1972) show that many bowls and pails are not assignable directly to Bakker's phases and that a mixing of phase-defining elements occurs quite often, e.g. a combination of Phase B zigzag and Phase D *tvaerstik* has been noted at Mander O2 (collection O.K.T.), Bronneger D21/22 (collection B.A.I.), and at D43a (information J. Molema). In brief, Nos 114-126 and 128-131 form a homogenous group which should be considered as such.

Pails are the most poorly represented class at Glimmen G2. No. 130 is a particularly well-made and decorated example, belonging to the last stage of Horizon 3. It forms a service set together with tureen No. 259. The distribution of sherds of both vessels indicate that they were deposited together (fig. 9).

Nos 127-128 in both profile and decoration are clearly hybrid lugged/non-lugged bowls. The layout of decoration is dictated by the presence of lugs and, like Nos 114-126, consists of a horizontal zone below the rim including a band of (now contracted) verticals separated from a lower zone by a strongly marked horizontal line, with well-defined but narrow vertical panels of chevron related ornament below the lugs. Bowls of this type are well-known, good parallels occur at Landersum (Bakker, 1979: fig. B15) and Heek-Ammert Mark, Kr. Borcken (information W. Finke) in well-associated contexts and at Emmeln and Gross Berssen (Schlicht, 1968; 1972). Typologically, such bowls are important as they show the breakdown of the panel decorated bowls of Horizon 3 moving into the block decorated bowls of Horizons 4 and 5. These bowls belong to Horizon 4.

No. 132 is part of a Horizon 4 pail, with horizontal zone below the rim and narrow panels of vertical chevron below the lugs. Pail No. 133 was found in a pit together with a funnel beaker cup (No. 103) and charcoal (see 2.5). It belongs to Horizon 6. No other material from this period has been identified at G2.

5.5. Non-lugged decorated bowls (Nos 134-175)

Approximately 40 bowls fall within this category; in addition, sherds of several other very fragmentary examples can be recognized. Large portions of many of the bowls can be reconstructed but only eleven complete profiles were obtained. Four of these have simple bases, and seven have footing bases.

No. 134 is a well-preserved small bowl probably of Horizon 3. Nos 135-138 appear to be late and

poorly executed examples of Horizon 3 bowls. The fragmentary condition of all four make further comment unnecessary. The decoration on Nos 139-141 tends to be zonal, consisting of horizontal lines below the rim and above a band of short vertical elements (often ten lines). The bottom part of this zone still consists sometimes of horizontal line(s). The lower zone consists of vertical elements, chiefly lines, usually in simplified panels or blocks. This decorative scheme is essentially a simplified version of that occurring on the lugged bowls.

The decoration on Nos 142-152, 154, 155, 160-162 consists basically of an upper zone of lines which are usually horizontal and continuous, and one, two, or three less well-defined zones on the lower body, most frequently made up of horizontal or vertical blocks but occasionally including other motifs. Bowls with decoration of this type occur in Horizon 4 in the assemblages of Landersum (early Horizon 4; Bakker, 1979: fig. B15) and Mesum (late Horizon 4; Bakker, 1979: B18). The lozenge element on bowls Nos 160-161 may indicate the first half of this horizon. Block pattern also occurs in both Horizon 5 styles.

At first sight the bowl No. 166 seems to combine the decorative layout of Horizon 3 bowls (a well-defined upper zone, terminating in a horizontal line, and a lower zone consisting of long panel-like blocks of lines) with small, closely set zigzag in horizontal blocks suggestive of the Uddelermeer-Anlo Style of Horizon 5. On closer inspection, however, it is clear that the lower vertical blocks are pendant from short lines of zigzag, and that there is no question of an upper zone terminating in a single zigzag line. This bowl may belong to late Horizon 4 or early Horizon 5. The bowls Nos 167-168 include large zigzag in the upper zone and some *tvaerstik* lines in the long vertical blocks, suggesting late Horizon 4. Bowl No. 171 with multiple smaller zigzag lines belongs to the Heek-Emmeln Style of Horizon 5. Bowl No. 172 with double small zigzag line represents the Uddelermeer-Anlo Style of this horizon. The poorly preserved bowls Nos 169 and 170 also belong to this style. Bowls occur in two service sets with identical fabric, decoration style and in the case of the bowls, shape (Nos 139 and 140; Nos 145 and 146, together with tureen No. 260).

The shoulderless bowls Nos 174-175 should be considered with the necked and cordoned bowls of Horizon 7.

5.6. Non-lugged undecorated bowls (Nos 176-212)

There is a minimum of thirty-seven undecorated bowls in this assemblage. With two exceptions (Nos 176, 201), only bowls which are reconstructable from the rim downwards are included in this group. Some of the reconstructed bases may also belong to

undecorated bowls, but the custom of decorating only the upper portion of funnel beakers, some bowls, tureens, jugs and amphorae makes it impossible to distinguish undecorated bowls from undecorated portions of otherwise decorated vessels.

The undecorated bowls show considerable variety in terms of fabric, finish, shape and size. No. 180 has a single, pre-firing perforation in its base. A similar but not quite so extensive collection of undecorated bowls was found at Emmeln (Schlicht, 1968: Nos 877-883, 901-902, 908-914, 916-921, 931-938, total 30). While the proportion of undecorated but recognizable diagnostic types increases during Horizons 6 and 7, undecorated bowls and other forms do occur earlier as the associated finds from several small assemblages and flat graves demonstrate (Diever 1, Hooghalen, Zeijen E: Bakker, 1979: figs B3, B4, B14; Schipborg: Waterbolk, 1958: fig. 2:7-9).

5.7. Necked and cordoned bowls

Horizon 7 is represented by c. 30 necked bowls, cordoned bowls and simple bowls (Nos 174-175). These are characterized by limited and restrained decoration.

5.7.1. Necked bowls (Nos 213-235)

There are about twenty-six bowls of this form in this group, eight of which are represented by single sherds only, and fourteen of which are decorated. The decoration is very sparse and always occurs at the top of the shoulder in three main forms – vertical slashes on a narrow, applied, sometimes discontinuous cordon, as panels of neat, discrete or joined and opposed slashes (Nos 215, 216), or as a horizontal line with pendant short strokes, sometimes in discontinuous portions. All these bowls belong to Horizon 7.

5.7.2. Cordoned bowls (Nos 236-237)

With the above, and also belonging to Horizon 7 should be considered the cordoned bowls Nos 236 and 237, and the shoulderless bowls Nos 174 and 175. The cordoned bowls seem to have developed out of the bowls with narrow, horizontal lugs with vertical lines of Horizon 6, which are not represented in G2.

5.8. Jugs and tureens

In general typological terms, tureens develop out of jugs. Both rounded and angular profiles occur during Horizon 2. Although the original rounded form disappears during Horizon 3, the range of profiles extends to include wide and angular shoul-

ders. Horizon 4 tureens once more include both relatively wide forms but with small shoulders. In general, shape by itself is not a reliable indicator of horizon; in fact, it seems to have been dictated by the individual's choice of decorative scheme as much as by any other factor. However, ultimately, the tureen becomes indistinguishable from the tureen-amphora (see Amphorae).

5.8.1. Jugs (Nos 238-241)

The assemblage includes several vessels which are considered to be jugs. Nos 238 and 240 can be distinguished from the tureen series as a whole because of their rather coarse fabric and sparse decoration. No. 239 is probably a jug neck because of its general similarity to these two. The zigzag immediately below the rim is also occasionally found on early funnel beakers but in this case, the flat top of the rim and the lack of neck curvature suggest that it is more likely to be a jug. These jugs, together with dish No. 113 probably represent the earliest material on the site, Horizon 2.

5.8.2. Tureens (Nos 242-281)

Bakker (1979: p. 176) defines a tureen as having 'one lug'. At least one vessel included here as a tureen has two handles (No. 265). Two-handled tureens, although not common, are known and several were found at Emmeln (Schlicht, 1968: Nos 275, 370, 374, 392, 416).

A minimum of forty-one tureens was identified. In broad terms, they show a general trend from wide and angular to less prominently shouldered, deeper forms, but this trend is by no means absolute. In terms of decoration, on the neck there is a general movement away from a combination of horizontal and vertical elements, to chiefly horizontal elements, or to horizontal elements associated with multiple arcs. On the shoulders, triangles, pseudo-triangles and related shoulder decoration (e.g. broad, deep stabs), are replaced by a single, deeply intended horizontal line, frequently used to mark and sometimes almost to create the often practically non-existent shoulder (e.g. Nos 276, 277). Decoration below the shoulder and especially below the handle is common.

All but one of the recognized 'service sets' (see 2.6) include at least one tureen. These are listed in table 1 (including the non-tureen service set).

Tureens Nos 245 and 246 with relatively deep bodies belong to the earliest part of Horizon 3. The few lines of *tvaerstik* on each are at home in both Horizon 2 and 3 contexts. In addition, tureen No. 246 has a horizontal ladder on its handle, the best parallel for which occurs on the Horizon 2 Weerdinge jug, which also includes *tvaerstik* lines (Brindley, 1986: fig. 4:10). A similar feature occurs on the

handle of one of the tureens from Issendorf (Tempe, 1972: fig. 4). The tureen series as a whole is dominated by two motifs, shoulder triangles, usually associated with broader shoulders and strap handles, and multiple arcs on the necks, usually associated with small to virtually non-existent shoulders and small lugs. The two motifs are largely mutually exclusive (exceptions Nos 251, 252). In general, the shoulder triangle is the earlier motif, with a well-documented ancestry in the later stages of Horizon 2 (Brindley, 1986: fig. 4). It has a widespread distribution, occurring in a number of forms during Horizon 3. True and pseudo-triangles and shoulder stamps occur simultaneously as is demonstrated by the pseudo-triangles of No. 245 and the shoulder stamps of No. 246 which are arguably early within Horizon 3, and the true triangles of Nos 257-259 which belong to the end of the same horizon. Triangles are predominantly a Horizon 3 motif and do not seem to occur subsequently. The multiple arc motif is more difficult to assess. Tureens with this motif have hardly ever been found in flat graves or small assemblages, with the exception of Oldenburg-Donnerschwee Grambergs Gründe (Knöll, 1952: fig. 15:12, 15, 16). The motif rarely occurs on forms other than tureens. In some assemblages, a zigzag (sometimes multiple) is used as an alternative (both occur at Wechte: Knöll, 1983: Nos 144, 148, 161 resp. 100, 145; and Emmeln: Schlicht, 1968: Nos 227, 456, 457 resp. 371, 360, 859, and Emmen D43, collection R.M.O.L.). The multiple arc is by far the more popular at Glimmen G2; only one possible example of a very slack zigzag was noted (No. 264a). It has its ancestry on Horizon 3 tureens where it occasionally occurs in a pointed form (No. 251 has both pointed multiple arcs and shoulder triangles). It developed from single triangles at the base of the neck, examples of which are also known from early Horizon 3 (Seeste tureen: Bakker, 1979: fig. 31:1; D43 (72S); Emmeln: Schlicht, 1968: amphora No. 16). The origin of the zigzag is not clear. Tureen No. 10 from Gross Berssen (Schlicht, 1972) shows a zigzag together with pointed arcs on the neck, shoulder triangles and a broad handle. This is an early example of the larger zigzag motif, late Horizon 3/early Horizon 4. At Emmeln and Emmen D43 where both motifs occur, intermediary 'W' and 'M' motifs which look very like short lengths of zigzag are found (e.g. Emmen D43 76S, 108S; Emmeln: Schlicht, 1968: No. 217). These intermediary forms, however, are more likely to be due to mutual influence than to typological development of one from the other.

Shoulder triangles and neck multiple arcs seem in general to be mutually exclusive, probably for chronological reasons. Shoulder triangles do not occur on amphorae of any form, whereas the multiple zigzag and, although less frequently, the

multiple arc are well known. This suggests that the shoulder triangle had fallen out of favour by the time these two decoration motifs emerged. Furthermore, there are indications that while tureens with multiple arcs/zigzag represent early Horizon 4 material, only multiple zigzags occur during the later stages of the horizon, and continue into Horizon 5.

Apart from multiple arcs, Horizon 4 tureens show two other main motifs – lozenge lines (Nos 261, 262, 265) and block patterns. Lozenges also occur frequently on bowls of the early part of this horizon (e.g. Heek-Ammerter Mark, Kr. Borken: information W. Finke; Emmeln: Schlicht, 1968: e.g. Nos 299, 307; Gross Berssen: Schlicht, 1972: No. 136). Very narrow horizontal blocks sometimes occur with shoulder triangles during Horizon 3 (Nos 258-259). These narrow blocks are probably the prototype for the block patterns which occur during Horizons 4 and 5, and which consist of more than two horizontal lines (i.e. 3-8 lines and up to 13 lines in some examples of the Heek-Emmeln Style), on shoulder and neck, on amphorae type 1 and tureen-amphorae, and on bowls. Block patterns may alternate with empty spaces, multiple arcs, or blocks of alternating vertical and horizontal lines.

5.9. Amphorae (Nos 282-325)

This group was defined by Bakker as 'amphorae (no lugs, two or more lugs, but shape is more important)' (1979: table 4). The shape is shown by two outlines, one of a large Phase F/Horizon 6 amphora and the second, a large vertical necked vessel with four small lugs at the base of the neck and an angular profile, with long shoulder equal in length to the depth of the body. Elsewhere in the text, amphorae are given as the pilot type of Phase E (Bakker, 1979: p. 70). This definition is meaningless. Amphorae occur in two typologically distinct forms (both of which normally have lugs or bosses) here renamed Amphora (types 1 and 2) and Tureen-amphora.

Amphora (types 1 and 2) consist of a cylindrical neck with angular (type 1, e.g. No. 288) or rounded (type 2, e.g. No. 300) body. The lugs usually occur at the junction of the neck and shoulder, but may occur on the shoulder itself (No. 295). The precise origin of type 1 amphorae is unclear. An undecorated example occurs in the late Horizon 2 assemblage of Hooghalen. Decorated examples occur sporadically during Horizon 3 (Angelslo No. 1966:411, unpublished, coll. P.M.D.), Emmeln No. 166 (Schlicht, 1968), Bottrop-Kirchhellen (*Ausgrabungen und Funde in Westfalen-Lippe* 3, 1985: Abb. 95), Werlte Kr. Aschendorf-Hümmling (Schlicht, 1968: Fig. 7). They can be distinguished from the rather similar lugged beakers chiefly by their cylindrical necks with tureen style decoration (i.e.

single neck zone), whereas lugged beakers have slightly flaring necks with two horizontal zones (see under Lugged Beaker for references). The lugged vessel from Emmeln (No. 17) combines the amphora shape with the decoration of the lugged beaker. In general, the later examples are easier to distinguish from each other.

Amphorae increase in numbers from the beginning of Horizon 4 and because of their frequent occurrence in flat graves, particularly in the Westfalia region, form an important constituent of the ceramic range. The earliest amphorae at G2 belong to type 1 Horizon 4, with horizontal *tvaerstik* and occasional multiple arcs, and empty zones on the necks (Nos 288-290). Possibly slightly later are amphorae with block decoration on the neck and shoulder, with the vertical blocks continuing over the shoulder onto the upper body (Nos 291-293, 295, 296). Also belonging to the same horizon are amphorae with narrow panels of chevron below the lugs (Nos 289, 293) or lozenge (No. 288).

Type 2 amphorae (Nos 297-319) have cylindrical necks, sometimes high shoulders, rounded bodies and predominantly *Tiefstich* or grooved decoration. The motifs include blocks of tightly packed small zigzag and horizontal lines (Nos 301-303, 305, 308, 309, 311, 314) which belong to the Uddelermeer-Anlo Style of Horizon 5 when similar patterns are found on bowls and tureen-amphorae. These examples may belong to the earlier part of the horizon when lines below the rim, a gap immediately above the base of the neck and decoration covering a larger proportion of the body (cf. amphorae type 1 Nos 287-290) suggest the continuing influence of Horizon 4. Type 2 amphorae (e.g. Nos 298, 307, 312, 313) are sometimes difficult to distinguish from similarly decorated funnel beakers. The close resemblances between some funnel beakers and amphora of type 2 is also seen at Hardenberg (compare the apparently lugless amphora Knöll, 1959: Tafel 42:22 with funnel beaker No. 24 on the plate). Amphorae of type 2 do not seem to occur later than Horizon 5.

Tureen-amphorae (Nos 282, 320-325) evolve out of tureens of Horizon 4, probably towards the end of that horizon. The necks are usually vertical, but may also be slightly flaring or conical. The shoulder is small and may be accentuated by the small lugs or bosses which occur on it. The body starts to narrow gently immediately below the shoulder. Early tureen-amphorae occasionally bear multiple arc decoration (No. 282). The large multiple zigzag (Mesum: Bakker, 1979: fig. B18:3,6) indicates Heek-Emmeln Style, while the horizontal band and block patterns in lines, hollow stamp impressions or small closeset zigzag indicate Uddelermeer-Anlo Style.

From these tureen-amphorae develop all the shouldered pots (except the funnel beaker cups) of the following Horizon 6, none of which occur at G2. The only identifiable representatives of Hori-

zon 6 are the shoulderless pail No. 133 and the funnel beaker cup No. 103.

5.10. Undecorated shouldered vases with/without lugs (Nos 326-348)

About twenty-two vases have been included under this heading. These are of various shapes but usually have a neck and shoulder and are about one and a half times as high as the maximum width. Many have an angular profile. About half of them have lugs, either two or four, evenly spaced or in pairs (Nos 326-331a-e, 342, 345, 346). Some of the remainder may also have had lugs originally. The absence of decoration and lack of familiarity with the shapes of these vessels probably means that some have not been recognized. Some of the vessels may be related to amphorae – undecorated amphorae of all groups are relatively well-known (Nos 294, 318, 319, 325). Undecorated shouldered and lugged vases are a frequent constituent of flat graves of all horizons. Others can be paralleled amongst the undecorated shouldered and frequently lugged wares from Beekhuizerzand (Modderman et al., 1976: figs 8-9) and Emmeln (Schlicht, 1968: Nos 874-907).

While an undecorated element certainly exists during the earlier stages of the TRB, it seems to have become increasingly popular after Horizon 5. However, it is always unwise to classify and date different pots on the basis of the absence of decoration.

5.11. Collared flasks (Nos 349-359)

The assemblage includes about eleven collared flasks, of all shapes: spherical (No. 349), biconical (No. 356), flat-shouldered (No. 350) and intermediary. Two are decorated. All the necks are short and have been constructed by drawing the clay up around a narrow stick. The collars all appear to have been applied.

As Bakker and Van der Waals (1973) have shown, collared flasks occur during all phases of the West Group TRB. Bakker (1979: p. 56) states that the shape of the flask is an unreliable indicator of date, although the truly spherical examples are probably early (his phases A-C).

5.12. Biberons (Nos 350-351)

Parts of two biberons were reconstructed.

According to Bakker, biberons occur in his Phases B+C and D, but not later (1979: p. 57). Associations in flat graves indicate at least Horizons 2 and 3 and the earlier part of Horizon 4.

5.13. Miscellaneous (Nos 362-366)

This section includes reconstructable pots which cannot be placed in any of the above categories. No.

362 is a small thick-walled vessel of indeterminate shape. Its fabric is very similar to that of some of the collared flask (very dark in colour, burnished, hard and thick). The internal faces are unsmoothed which suggests that it had a narrow mouth.

No. 363 is a small, undecorated jug, for which no precise parallels were found. Decorated tureens with a similar pressed out spout were found at Emmeln (Schlicht, 1968: Nos 170, 253, 254), Gross Berssen (Schlicht, 1972: No. 29) and Mander O2 (coll. O.K.T.).

5.14. Decorated rims, decorated body sherds, bases

The material illustrated in figures 49-50 includes sherds which are not clearly identifiable as specific vessels or types, usually because of their small size, but which also do not belong to any of the reconstructed pots.

6. CHRONOLOGY AND DATING OF ACTIVITY AT THE TOMB

Only one aspect of the chamber deposit (i.e. flint, amber, bone and ceramic offerings) is useful to the discussion of the chronology of activity on the site. The discussion below is therefore limited almost entirely to the decorated pottery. The pottery in the burial chamber belongs to Horizons 2-5 and 7 as described by Brindley (1986). The earliest pottery – one bowl (No. 113), and possibly a second (No. 126), and three jugs (Nos 238-240) – belongs to the later part of Horizon 2. The ornamentation of the bowl as a whole in particular has more in common with Horizon 3 bowls than with the simpler ornament of earlier Horizon 2, e.g. the bowl from Elspeet A (Bakker, 1979: fig. B6:3). It is probable that some of the funnel beakers also belong to this period of activity, including the funnel beaker (No. 38) from the flat grave (see 2.5). The small quantity of material probably also indicates that the chamber was in use for only a relatively short period before the beginning of Horizon 3.

To Horizon 3 belong most of the lugged bowls (Nos 114-125) and pails (Nos 129-131), some non-lugged decorated bowls (Nos 134-138), one lugged beaker (No. 111), fourteen tureens (Nos 243-256, 258, 259), and some funnel beakers including No. 57 (which is part of a service set with tureen No. 249). Some of the collared flasks and the biberons may also belong to this horizon. Although most aspects of Horizon 3 are included in this array, the number of pails is unusually small and the absence of shoulder panel decoration on the tureens is puzzling. However, neither of these two absences are likely to indicate anything other than personal choice and chance selection in the deposition of pottery.

Horizon 4 material includes a number of re-

cognizable funnel beakers (possibly Nos 45-47 with large zigzags and Nos 65-67 with multiple arcs). Also included are a lugged beaker (No. 112), one pail (No. 132), bowls (Nos 127, 128, 139-165), tureens (Nos 260-281), one tureen-amphora (No. 282), amphorae type 1 (Nos 288-296) and type 2 (304, 307, 316, 317). Both collared flasks and biberons are also found during this horizon. The most striking absence is the large zigzag from the necks of tureens.

Both the Heek-Emmeln and the Uddelermeer-Anlo Style of Horizon 5 are represented, the former by only five examples: the funnel beakers Nos 48 and 64, the decorated bowl No. 171, the amphora type 1 No. 298 and the amphora type 2 No. 308. The two bowls Nos 167 and 168 may represent very early examples of this style, or belong to late Horizon 4. To the Uddelermeer-Anlo Style belong the amphorae type 2 Nos 299-303, 305, 306, 309-314, and possibly Nos 318 and 319, and the tureen-amphorae Nos 320-325. The funnel beakers Nos 51 and 52 and bowl No. 172 probably belong to this style also. Both funnel beaker cups and collared flasks form part of the normal Horizon 5 assemblage. Within the context of Horizon 5 material as a whole, the G2 pots appear to belong to the earlier half of the horizon, having more in common with Horizon 4 material than with the well-developed Horizon 5 material which is found for instance at Harderwijk (Massen, 1980: fig. 2) and Anlo (Waterbolk, 1960: figs 37, 38). It seems therefore, that the chamber area was not used for sometime after the first part of Horizon 5 until Horizon 7.

The only material of Horizon 6 is that found in a pit inserted at the foot of the cover mound and consisting of a pail and a funnel beaker cup (Nos 133 and 103).

However, during Horizon 7 the chamber was once more used for offerings and deposits. To this horizon belong the bowls Nos 174, 175, necked bowls Nos 213-235 and lugged and cordoned bowls Nos 236 and 237, as well, probably, as some collared flasks and funnel beaker cups.

The available radiocarbon dates for the TRB West Group show that it lasted approximately 550 years, beginning about 3400 cal BC and ending c. 2850 cal. BC (Brindley, 1986). It is very probable that Horizons 1 and 2 were of relatively short duration, i.e. 50 years each. Horizons 3, 4 and 5 lasted probably c. 100, c. 150 and c. 100 years respectively, leaving 100 years for Horizons 6 and 7 together. Horizon 6 was probably of fairly short duration. This timescale is based on a consideration of the calibration curve of the period and the relative quantities of pottery known from each horizon.

Glimmen G2 was probably constructed c. 3300 cal BC. The chamber seems to have been in continuous use for about 300 years, before being abandoned. During the next 100 years, a single

offering was placed at the foot of the mound during Horizon 6. Activity recommenced during the final stages of the culture, around c. 2900 cal BC and may have lasted another 50 years.

The chamber therefore, was used for a total of c. 350 years (end of Horizon 2, Horizons 3, 4, first half of 5, and 7), during which c. 400 pots were deposited – i.e. slightly more than one per year. However, the service sets show that more than one pot may have been deposited during a single visit and possibly as many as five or six, figures which occur quite commonly in flat graves. It is therefore very unlikely that the chamber was visited on more than on annual basis, and very possibly, less frequently. When discussing the pottery from the *hunebed*, it is important to remember that pottery of any one horizon represents only a few pots from a settlement assemblage which is otherwise unknown.

7. SUMMARY

The excavation of the destroyed *hunebed* G2 on the Glimmer Es revealed the well-preserved ground-plan of a chamber with seven pairs of side stones, entrance on the south side with at least one pair of portal stones, some evidence for a kerb and the outline of the former covering mound. Small portions of the original floor of the chamber also remained in situ. The chamber filling which was fragmented but otherwise more-or-less complete, contained sherds of c. 400 pots, axes, arrowheads, *bikkels*, amber beads and a small amount of cremated bone. This represents the original contents of the chamber. Secondary activity was represented by sherds of several Single Grave amphorae, three Bell Beakers, two oval flint knives, and possibly a small hemispherical amber bead. The *hunebed* does not seem to have been further disturbed until it was robbed of all of its stone, probably for church building in the late 10th or 11th century, the date suggested by the sherd of a *kogelpot* found in the recent filling of an orthostat socket.

The finds, chiefly the pottery, indicate that the tomb was constructed sometime after the initial introduction of TRB pottery to this area. It was used continually until the end of the TRB, about five hundred years, except possibly for a short period, during which the only diagnostic pottery was deposited in a pit at the foot of the covering mound. Some sporadic activity continued after the end of the TRB for a short time, before the tomb was finally abandoned.

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Fig. 17. Trapezoidal arrowheads.

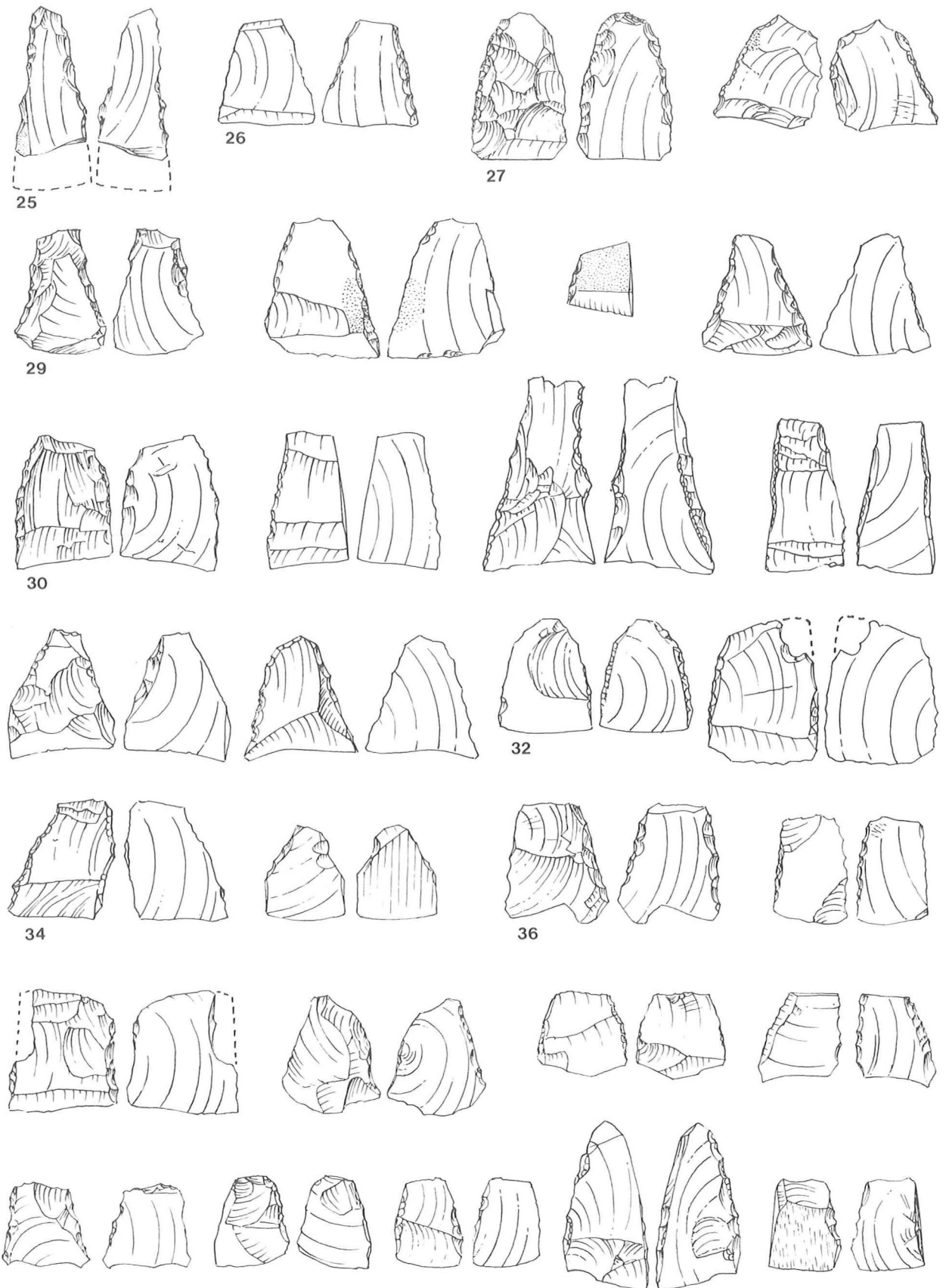


Fig. 18. Trapezoidal arrowheads.

Hunebed G2

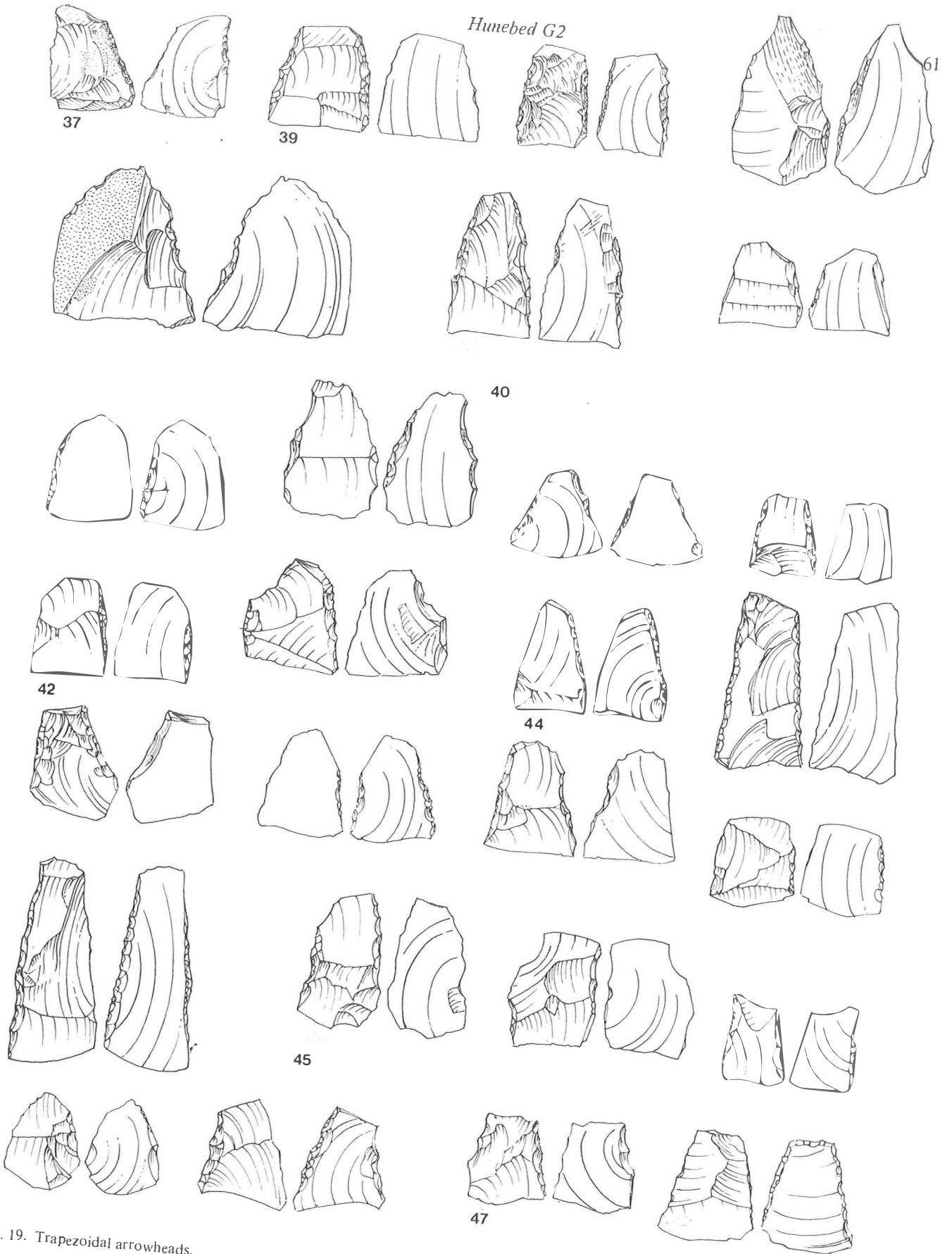


Fig. 19. Trapezoidal arrowheads.

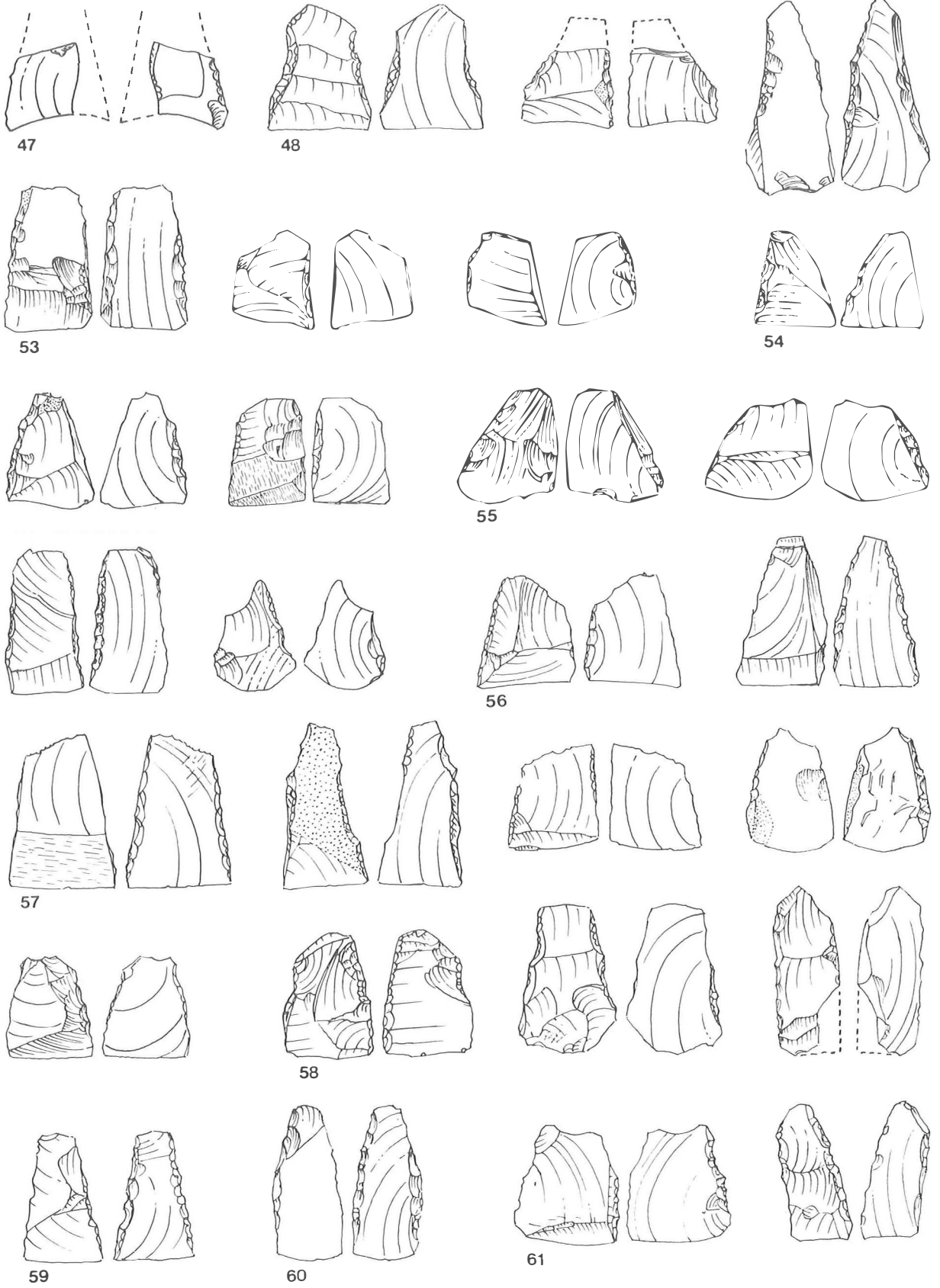


Fig. 20. Trapezoidal arrowheads.



Fig. 21. Trapezoidal arrowheads and scrapers.

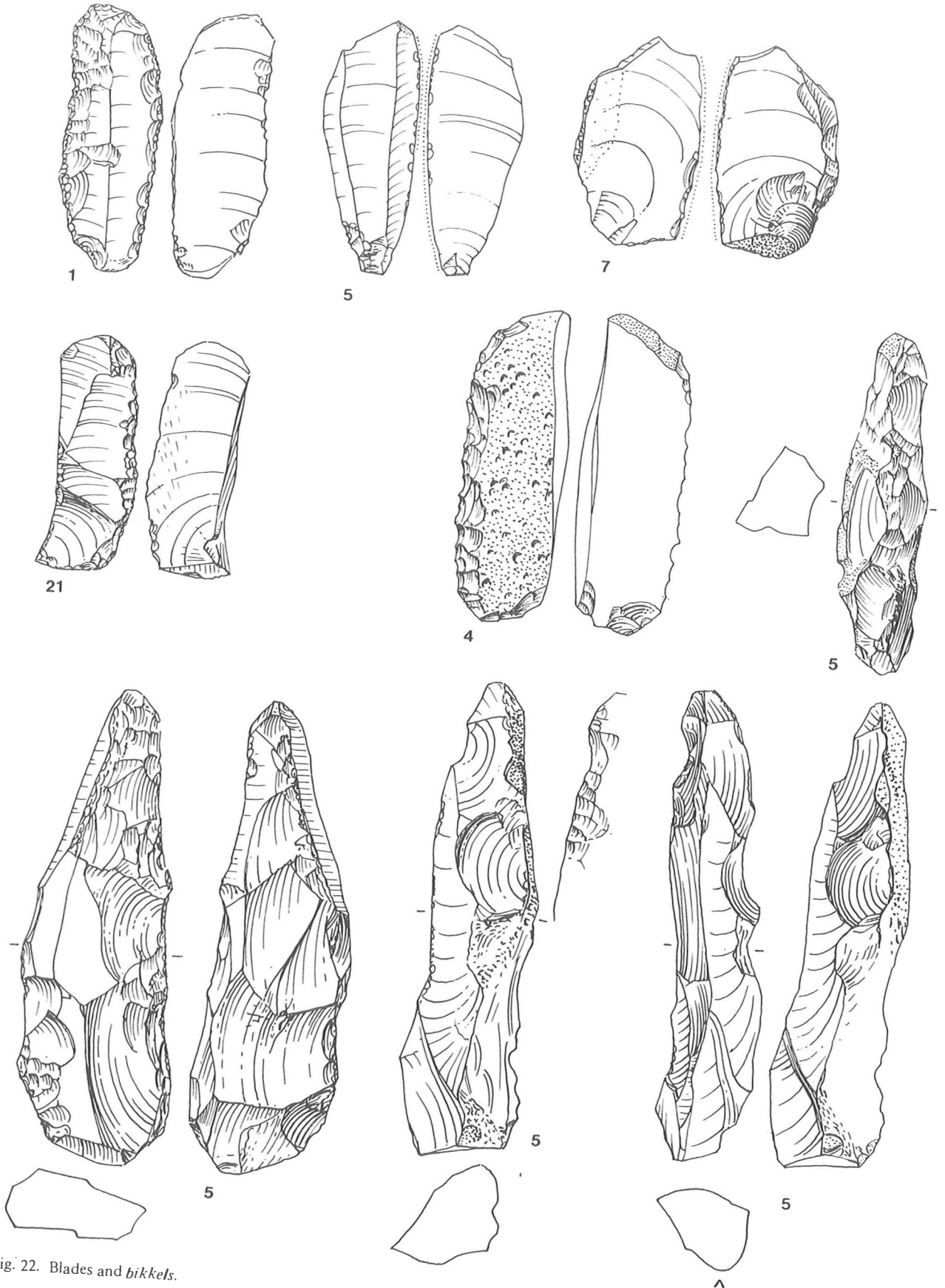


Fig. 22. Blades and *bikkels*.

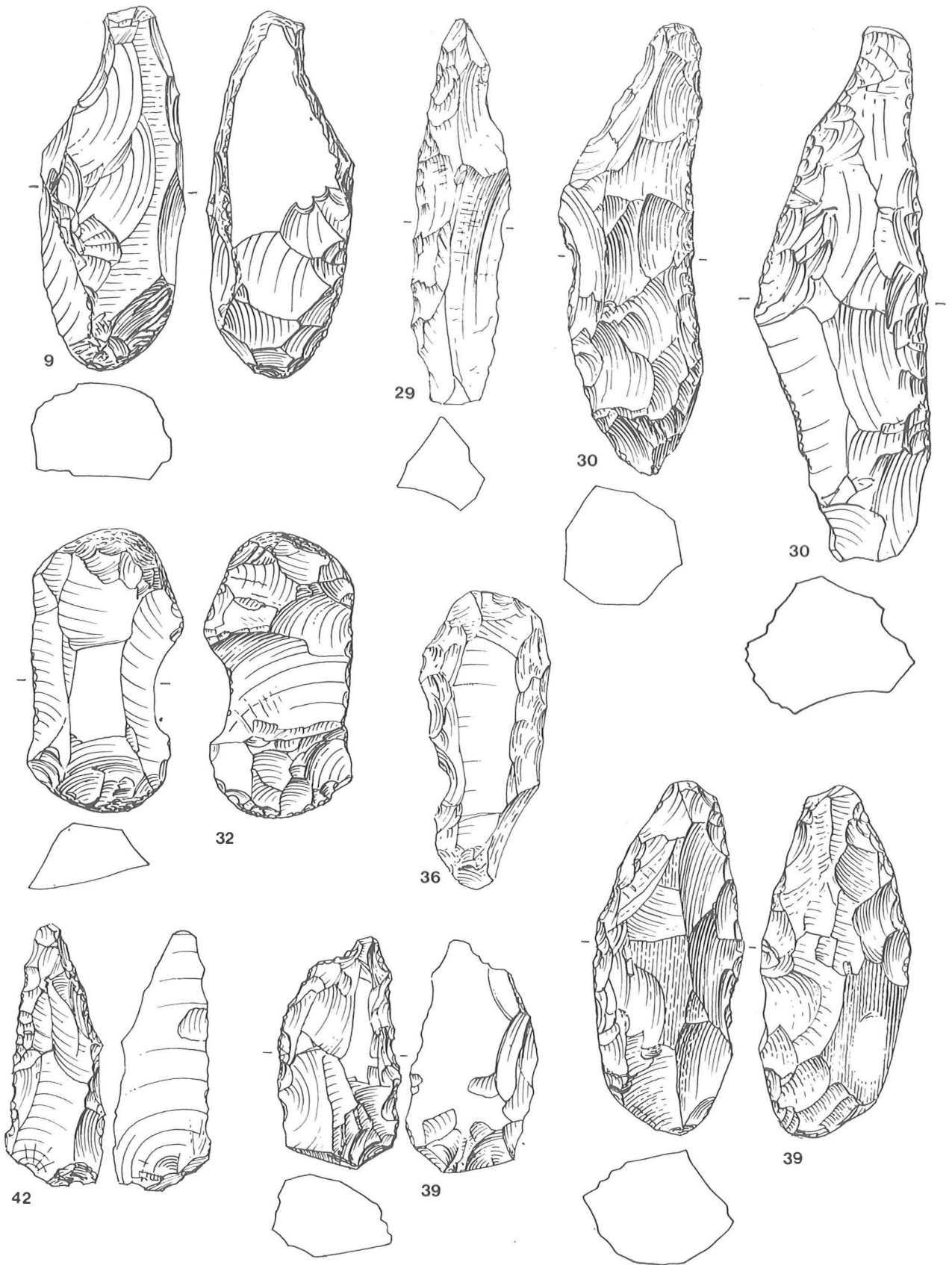


Fig. 23. *Bikkels*.

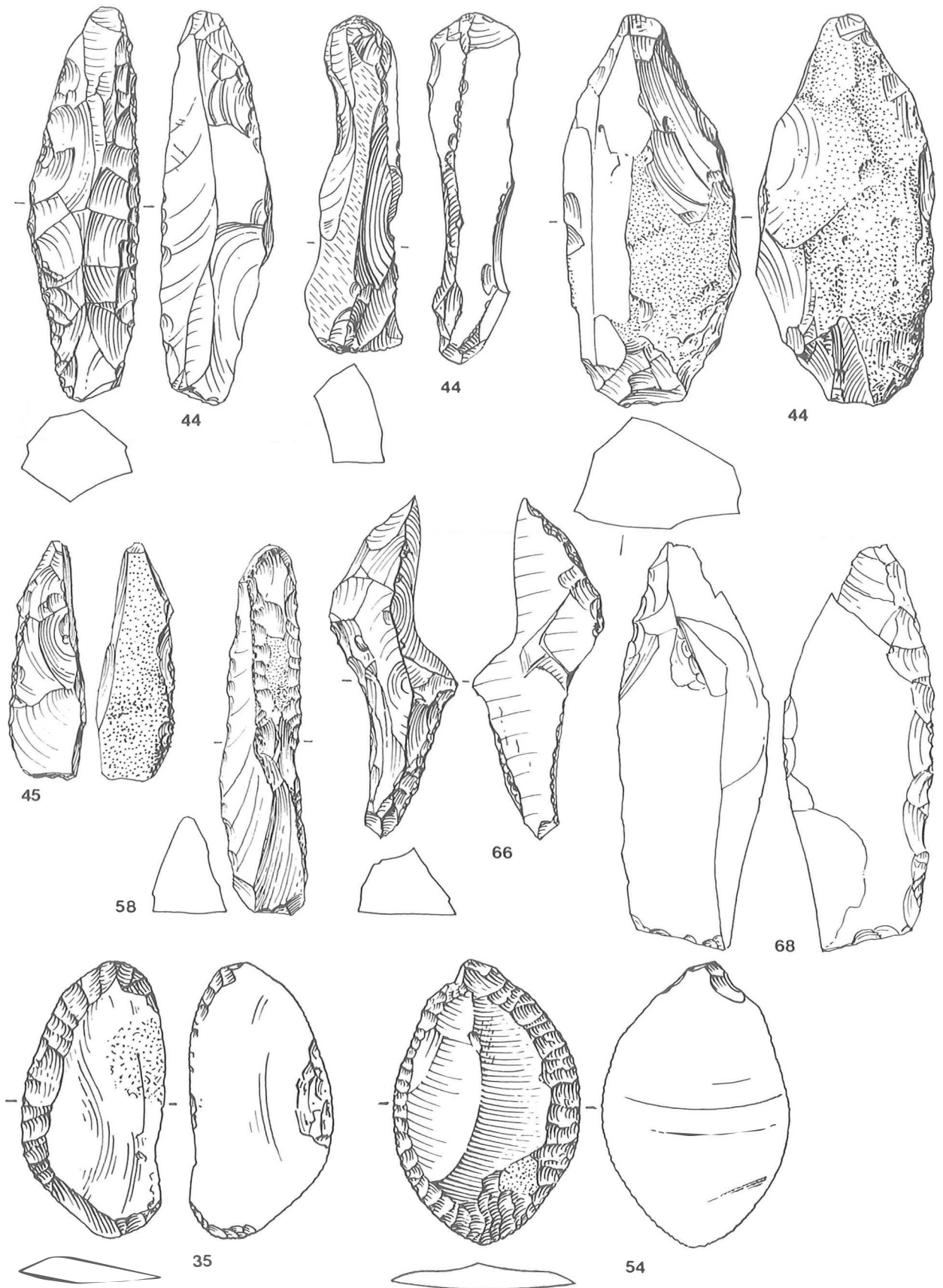


Fig. 24. *Bikkels* and Bell Beaker knives.

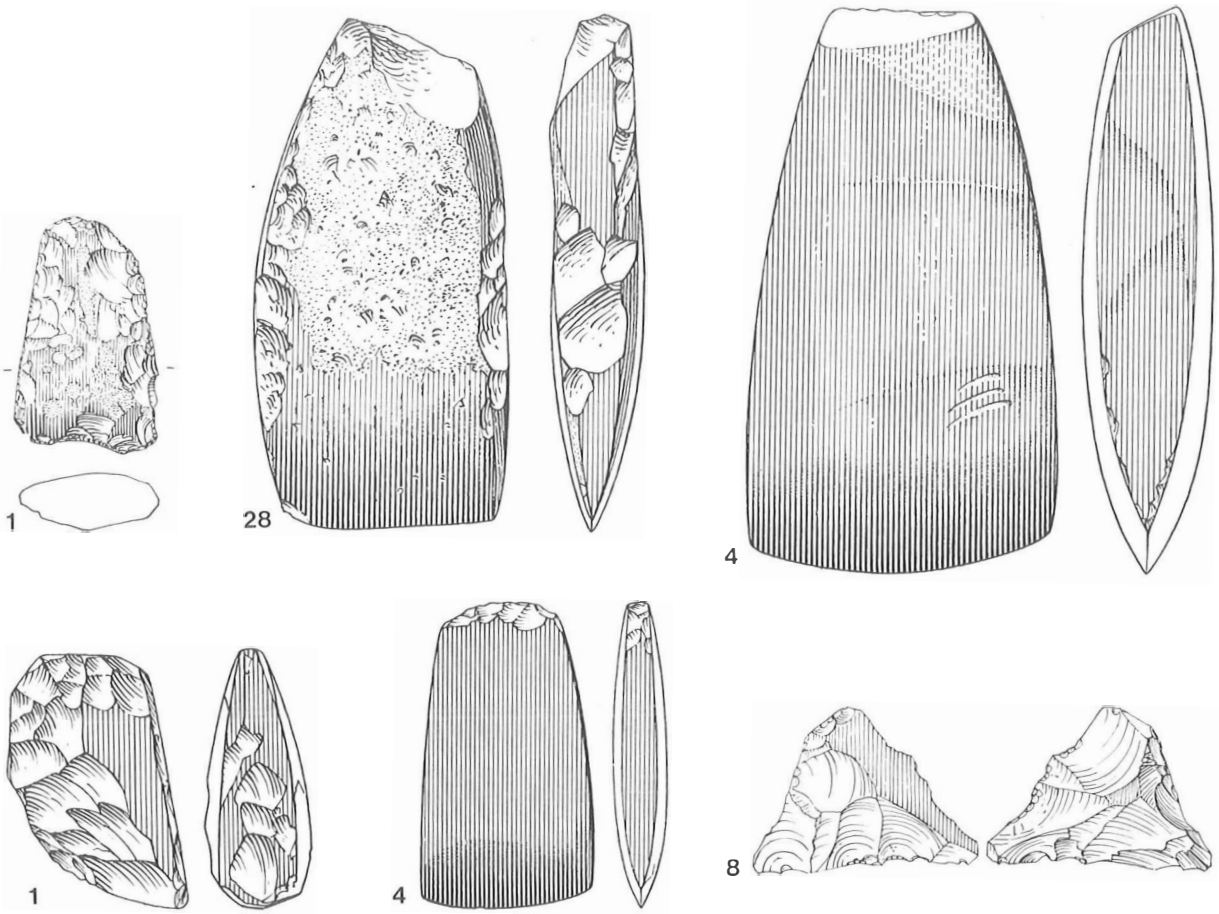


Fig. 25. Axes and axe fragments. Scale 2:3.

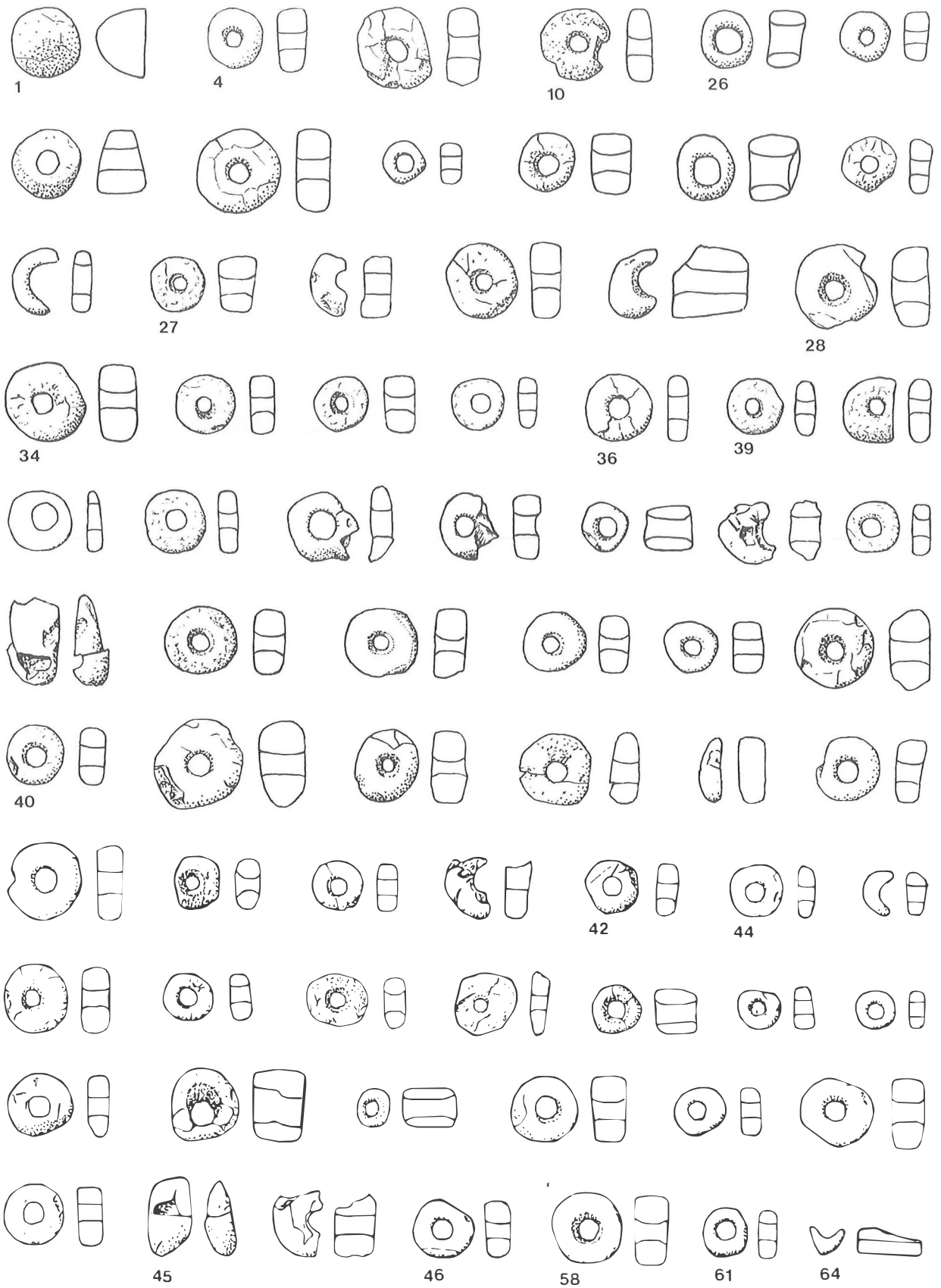


Fig. 26. Amber beads.

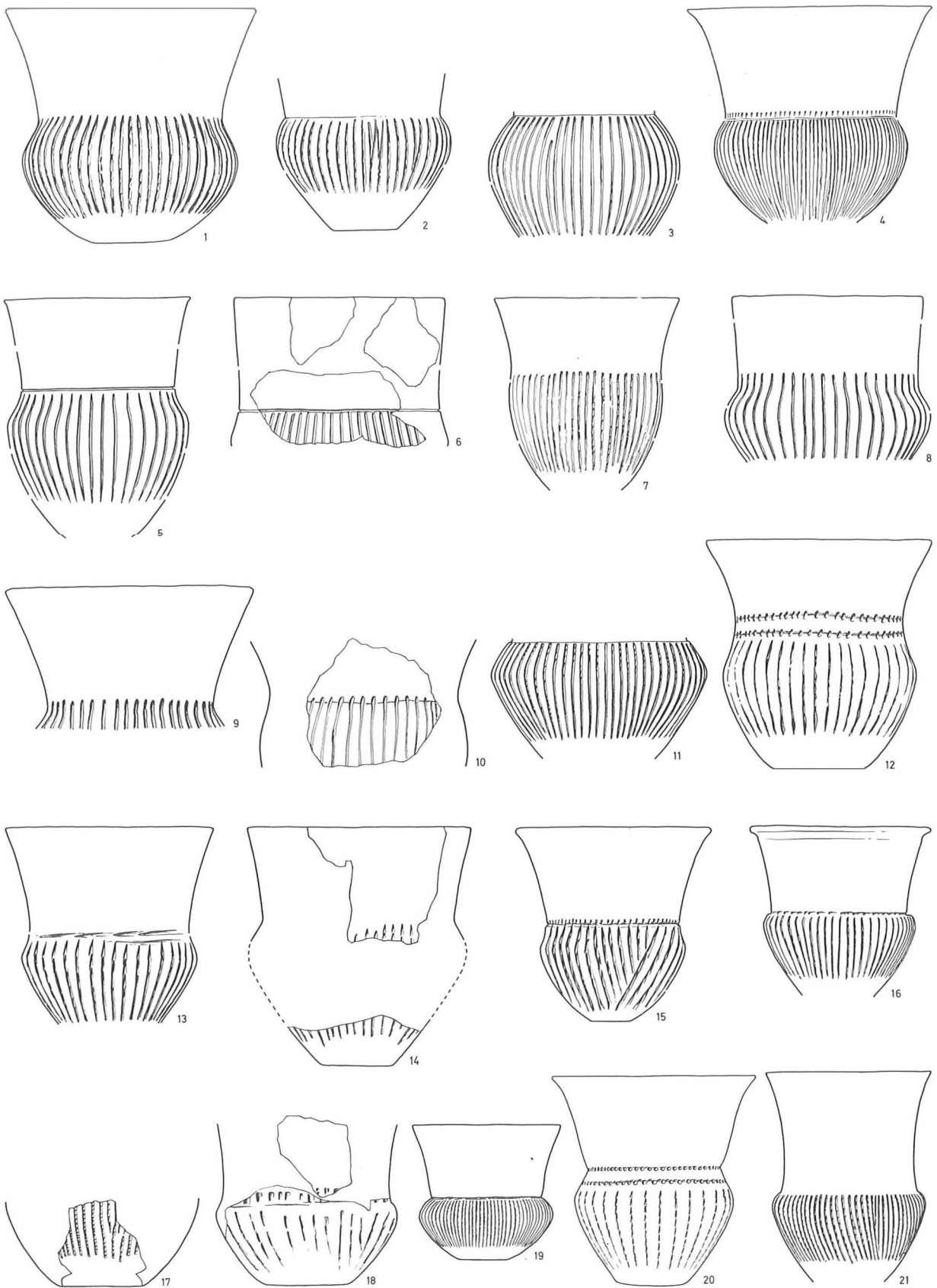


Fig. 27. Pottery.

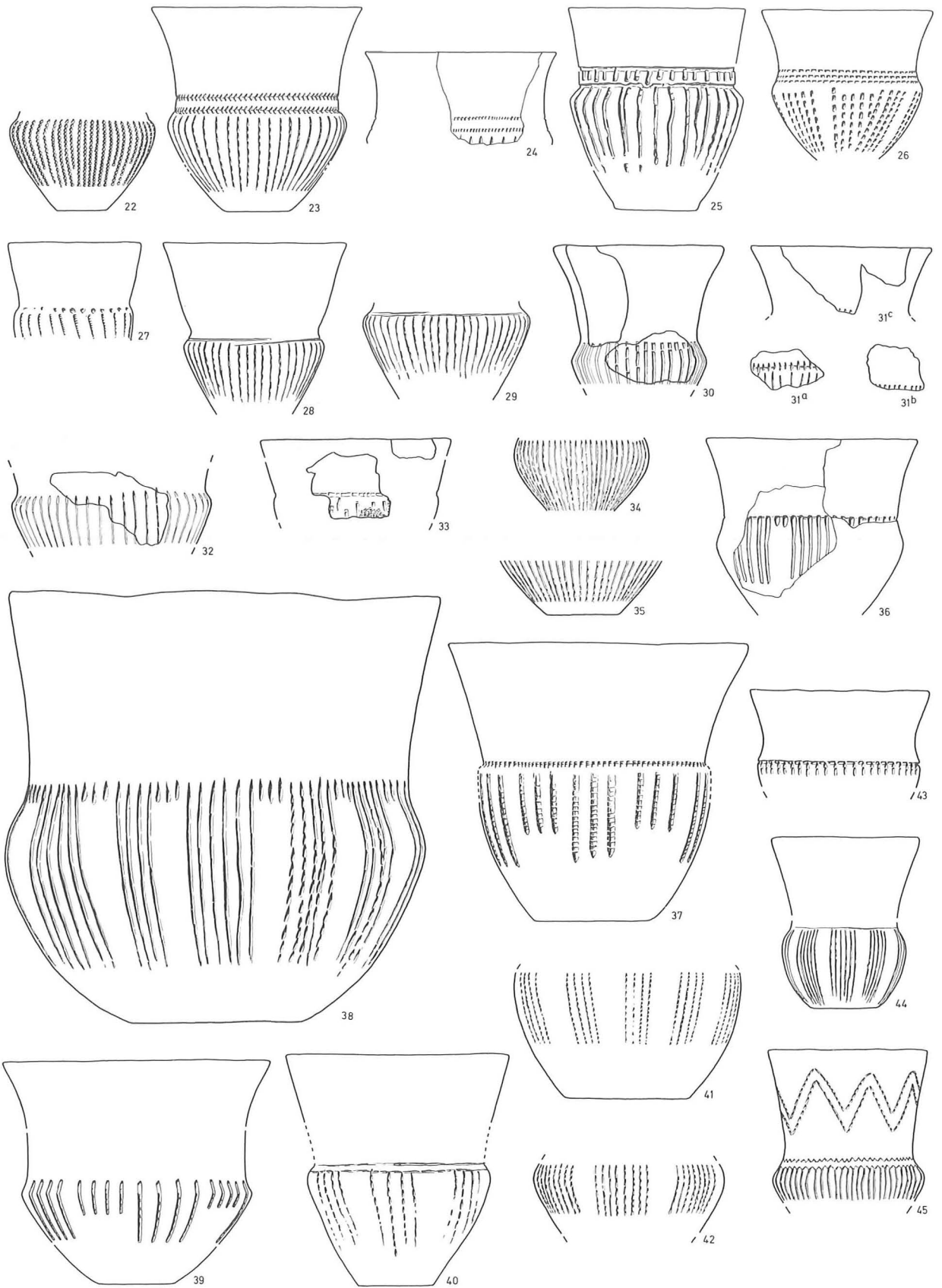


Fig. 28. Pottery.

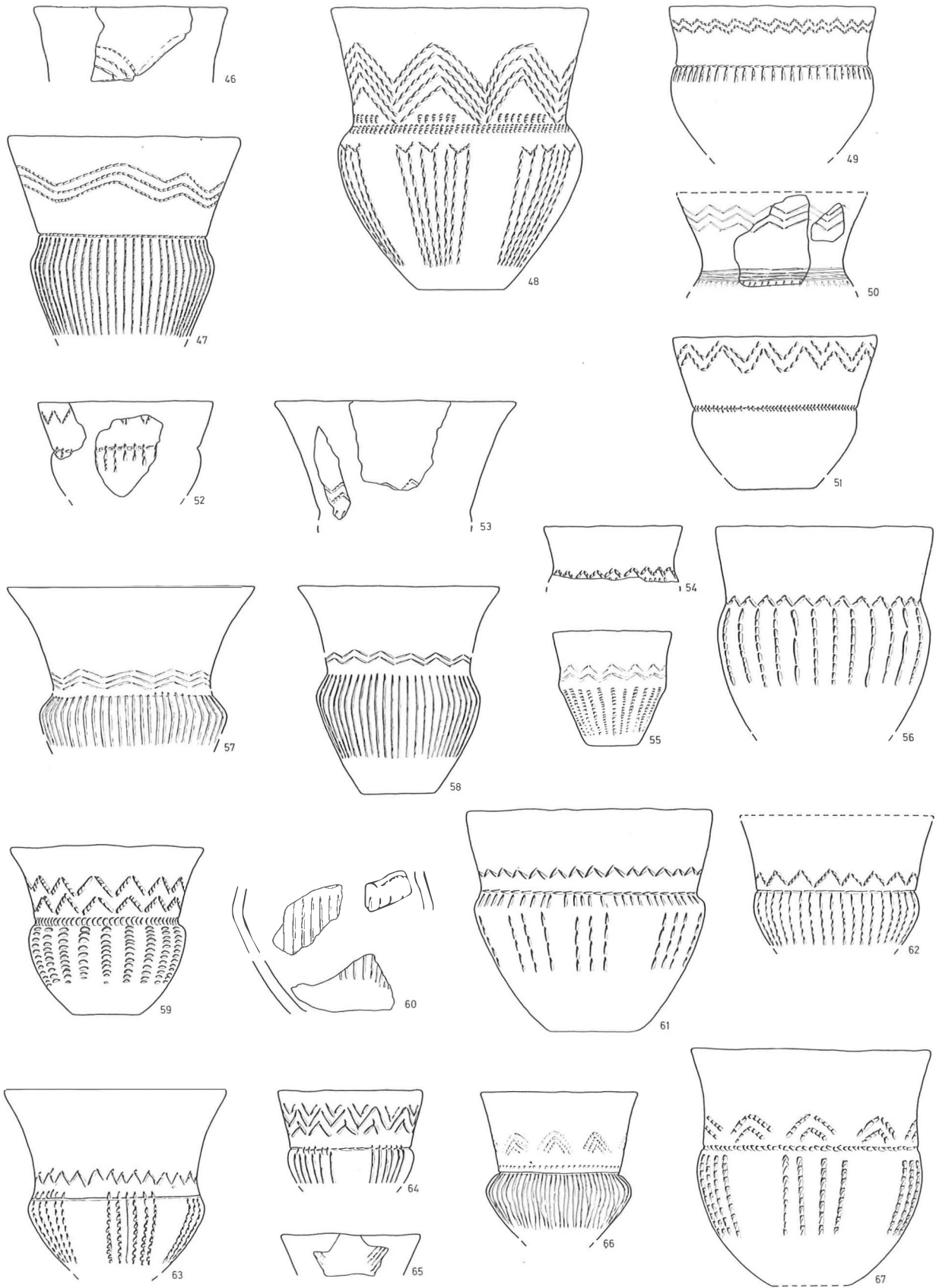


Fig. 29. Pottery.

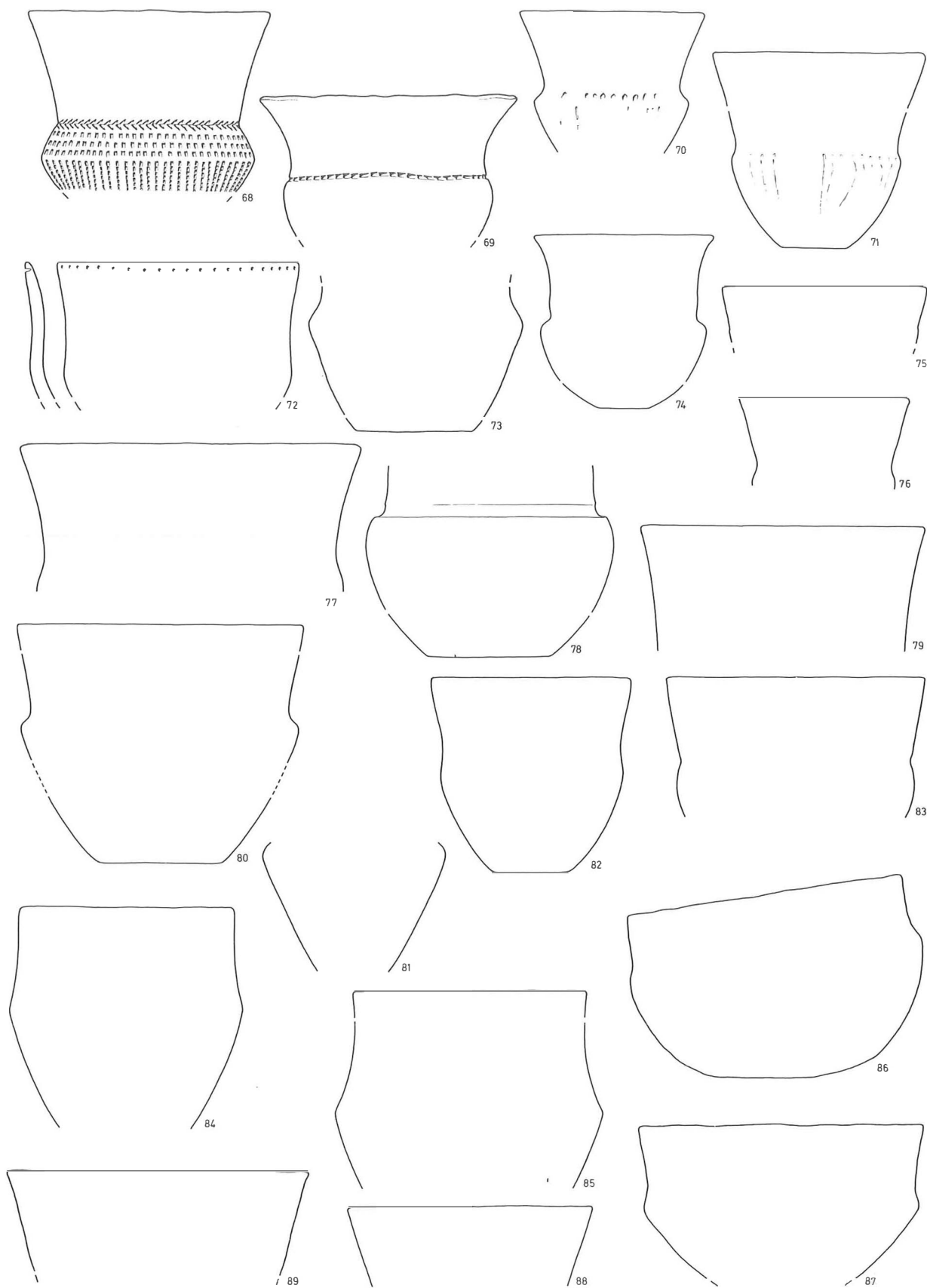


Fig. 30. Pottery.



Fig. 31. Pottery.

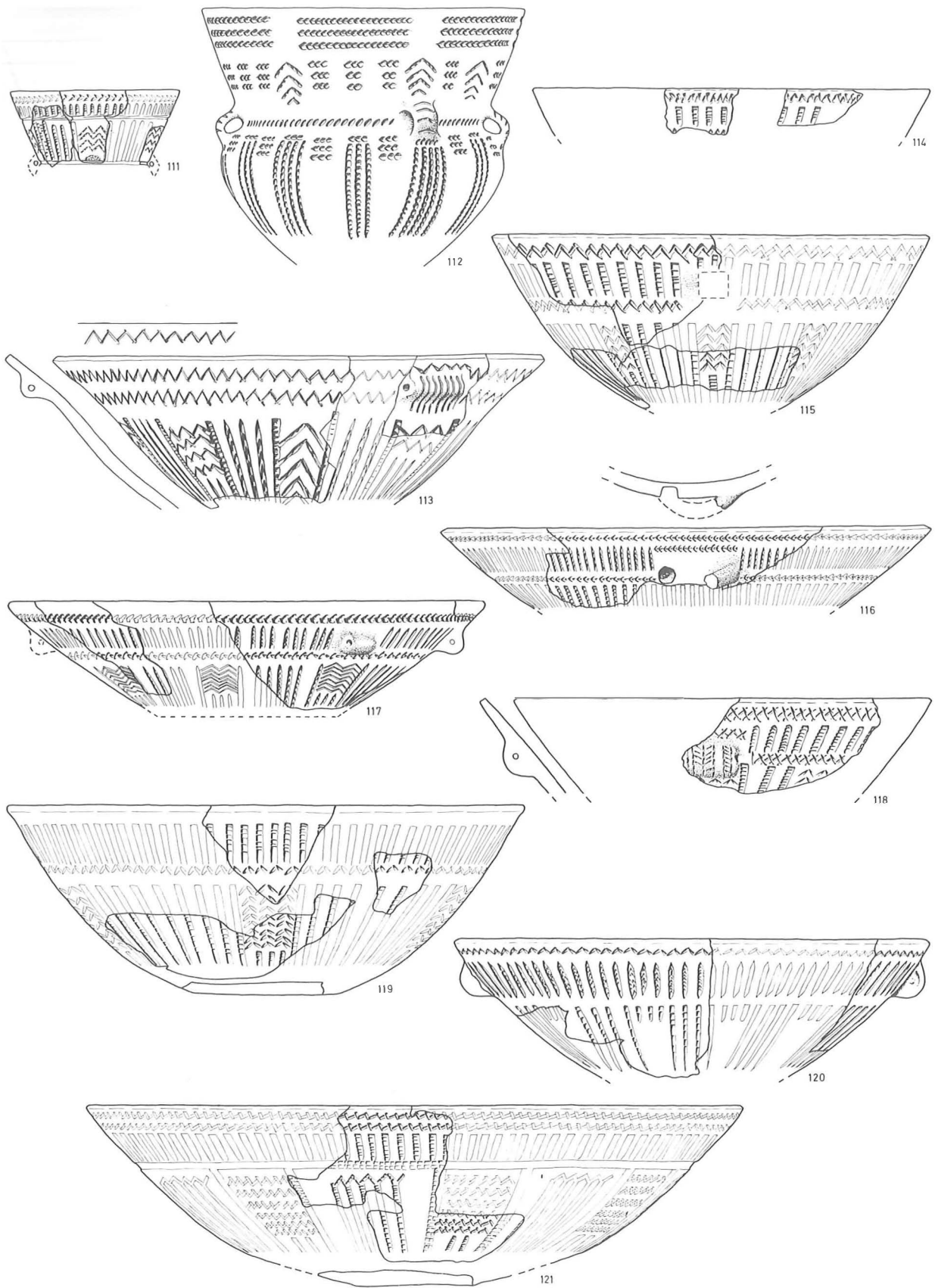


Fig. 32. Pottery.

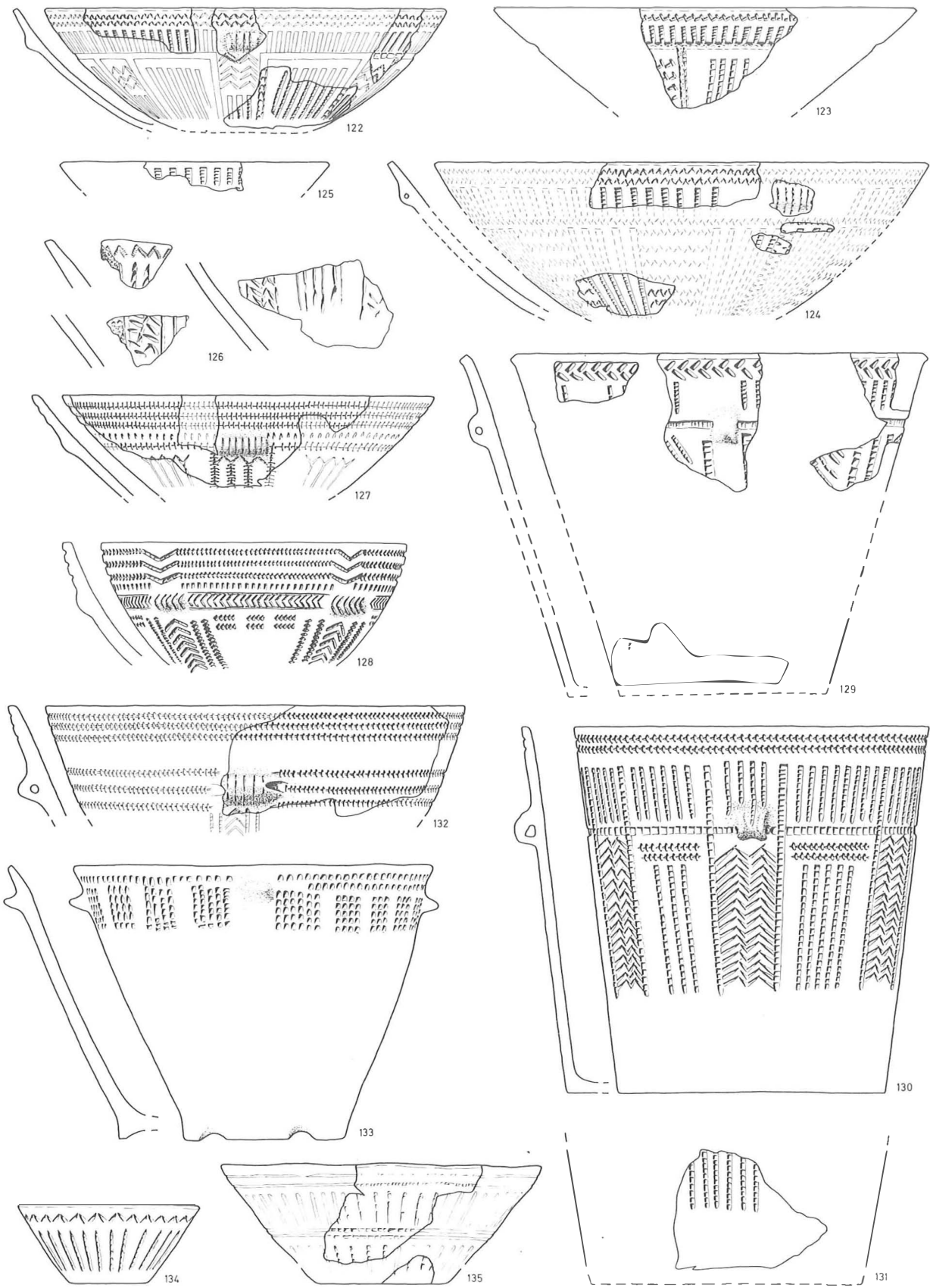


Fig. 33. Pottery.

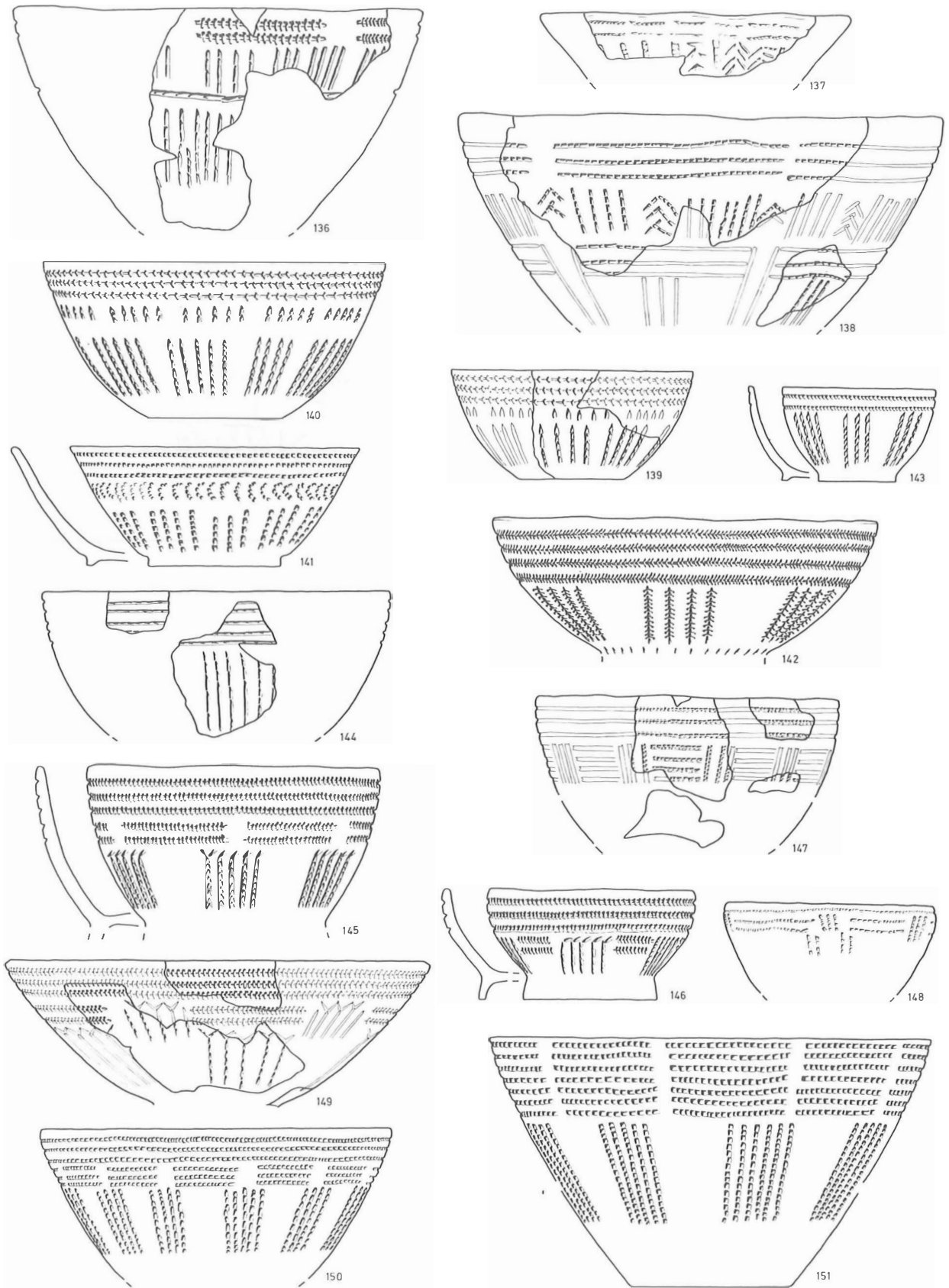


Fig. 34. Pottery.

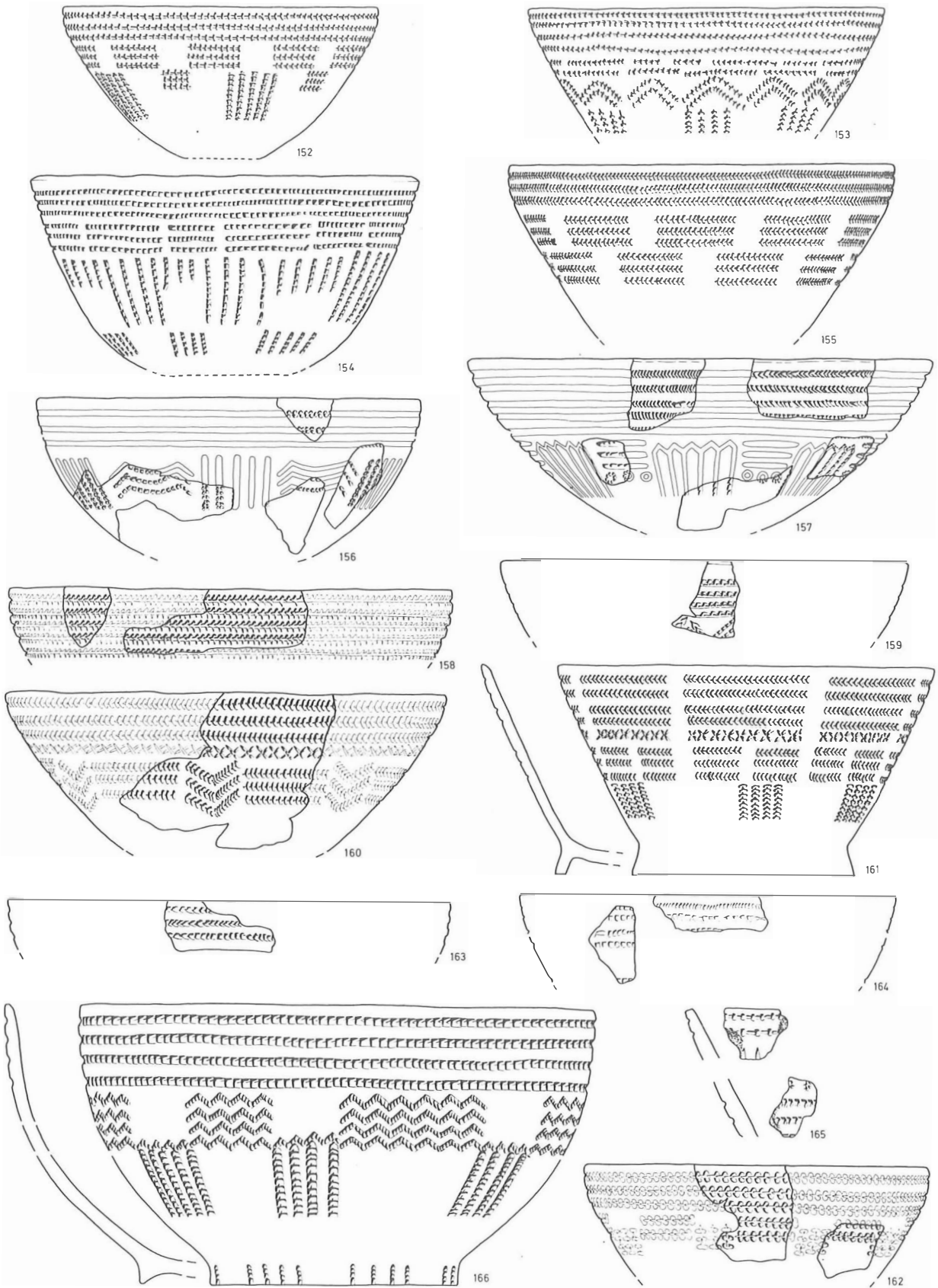


Fig. 35. Pottery.

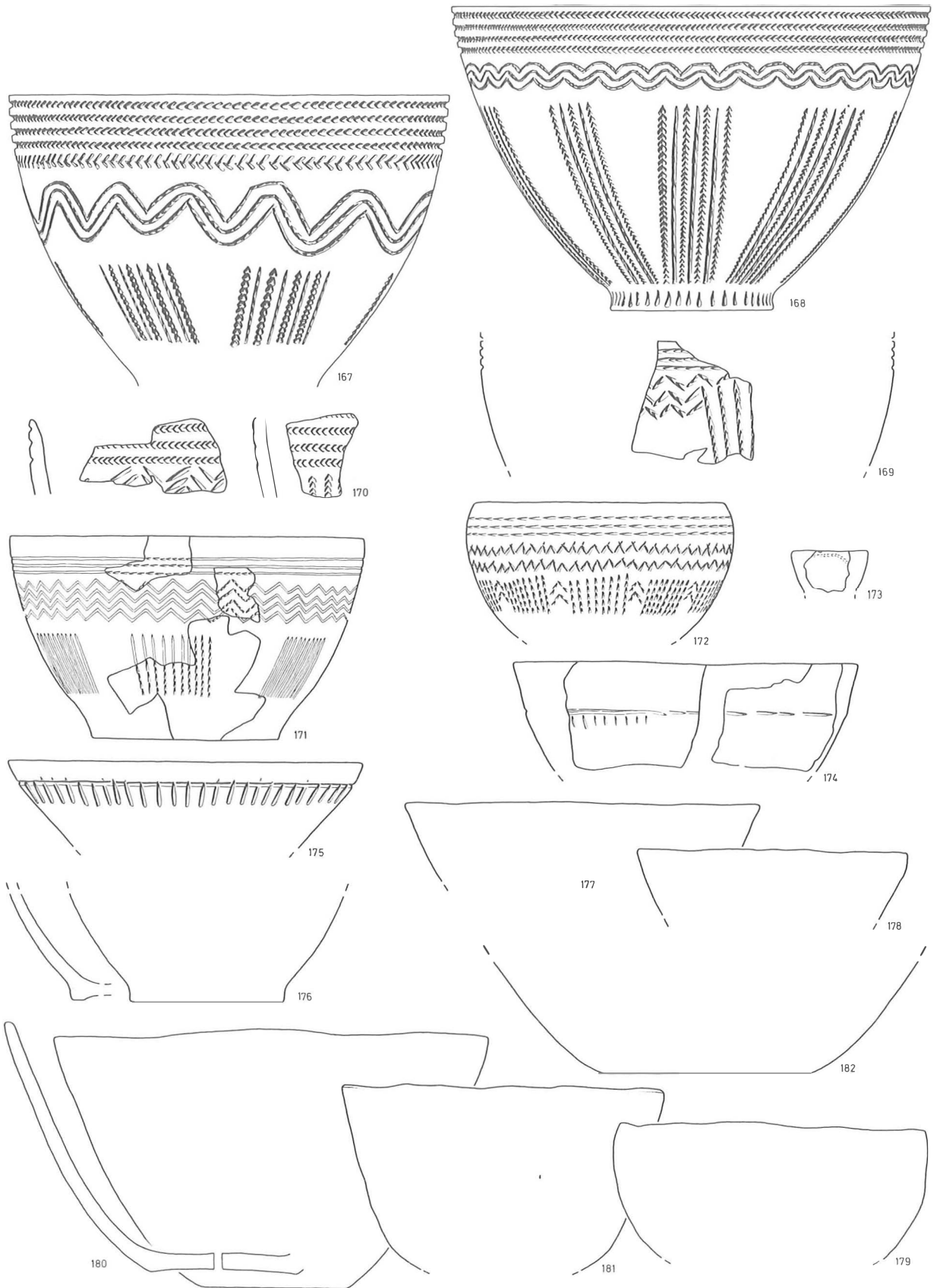


Fig. 36. Pottery.

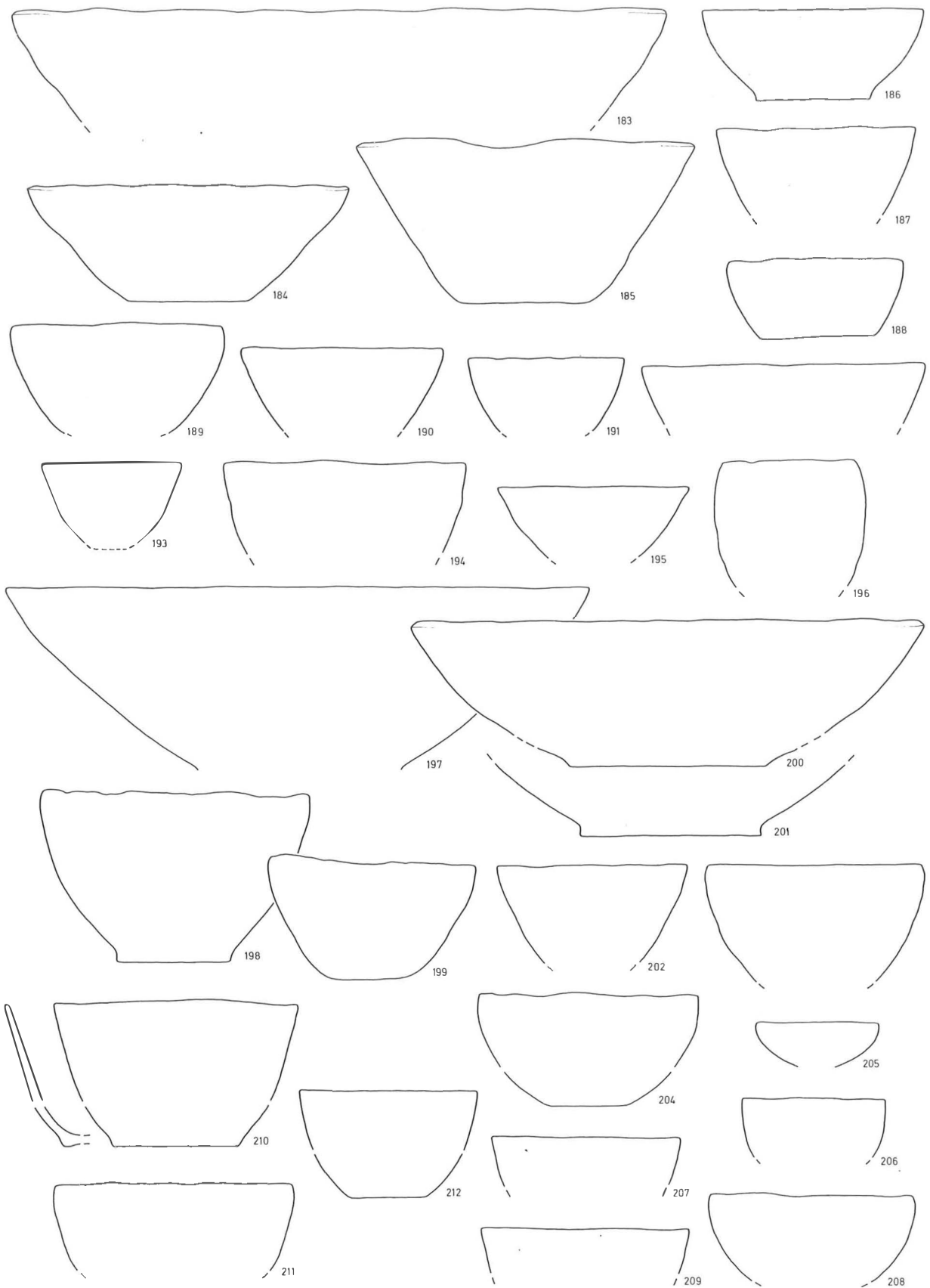


Fig. 37. Pottery.

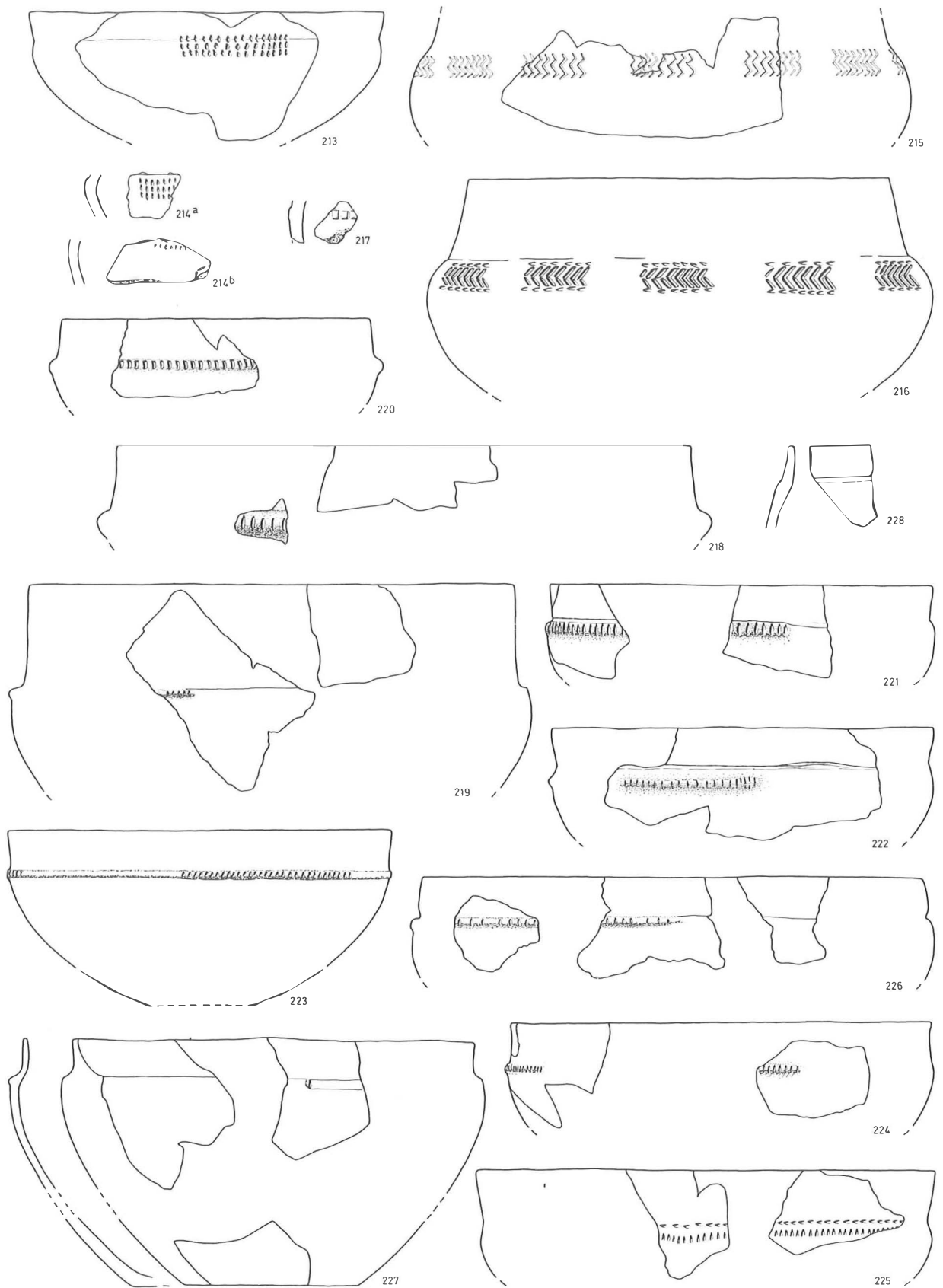


Fig. 38. Pottery.

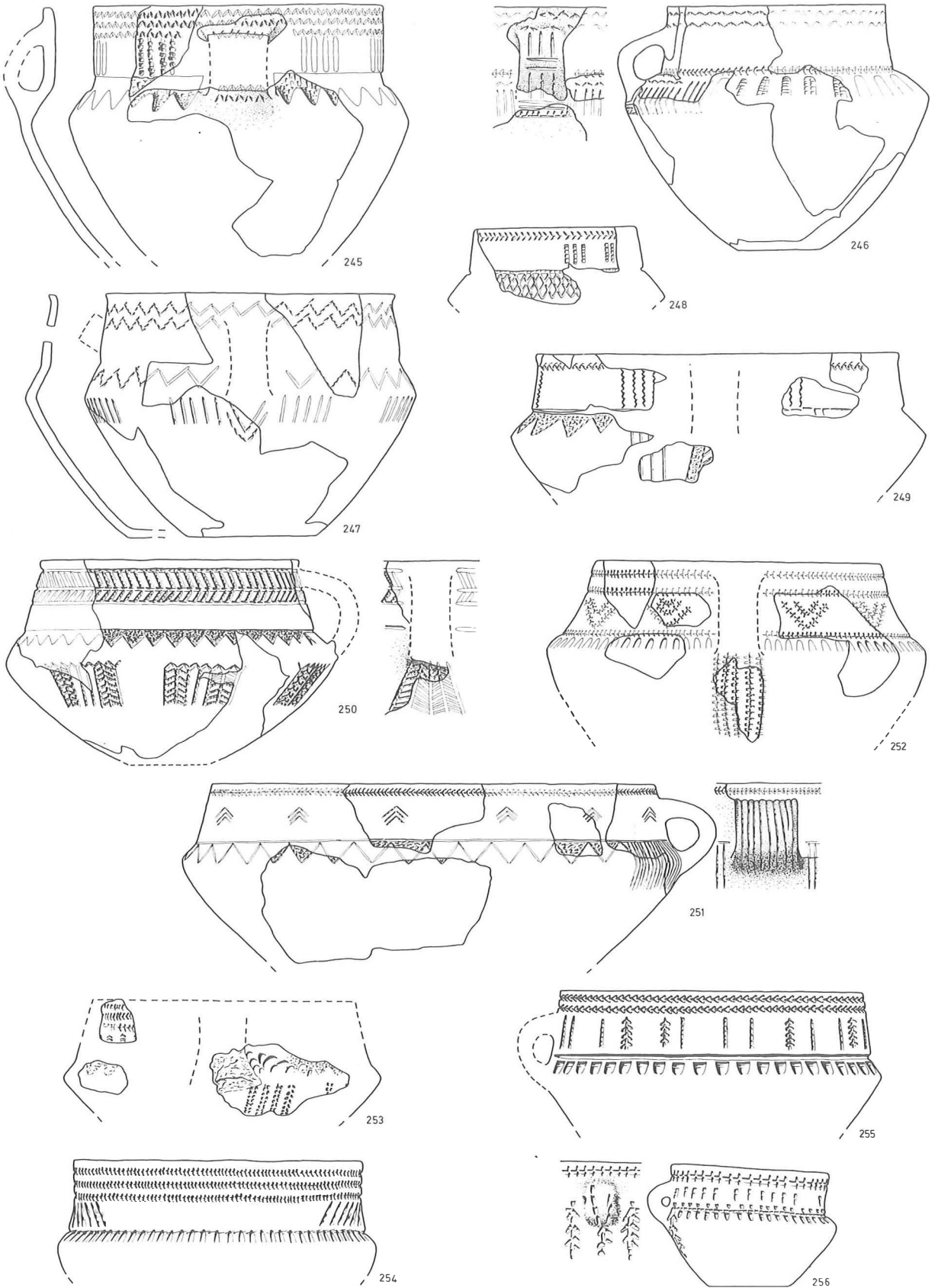


Fig. 39. Pottery.

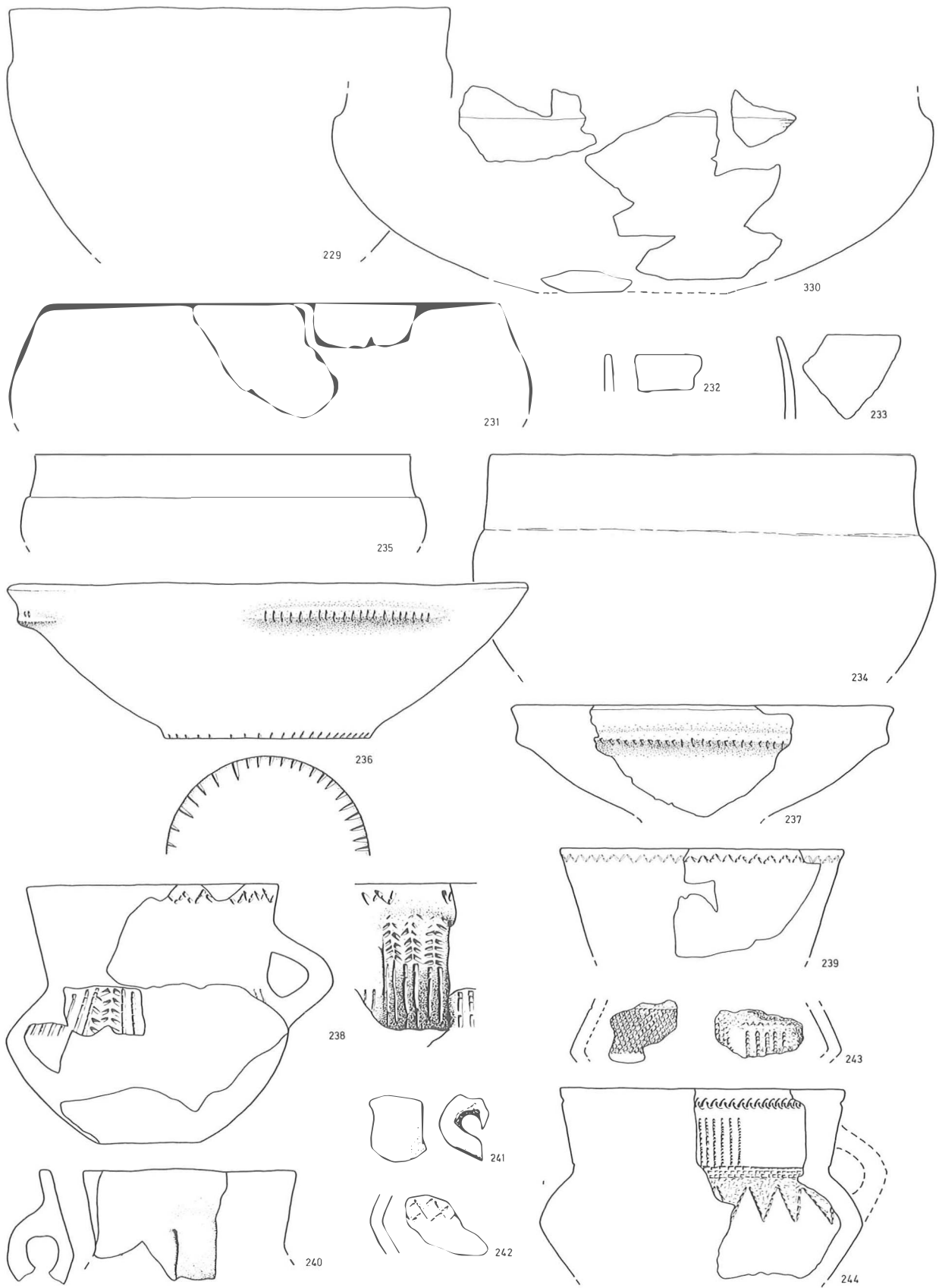


Fig. 40. Pottery.

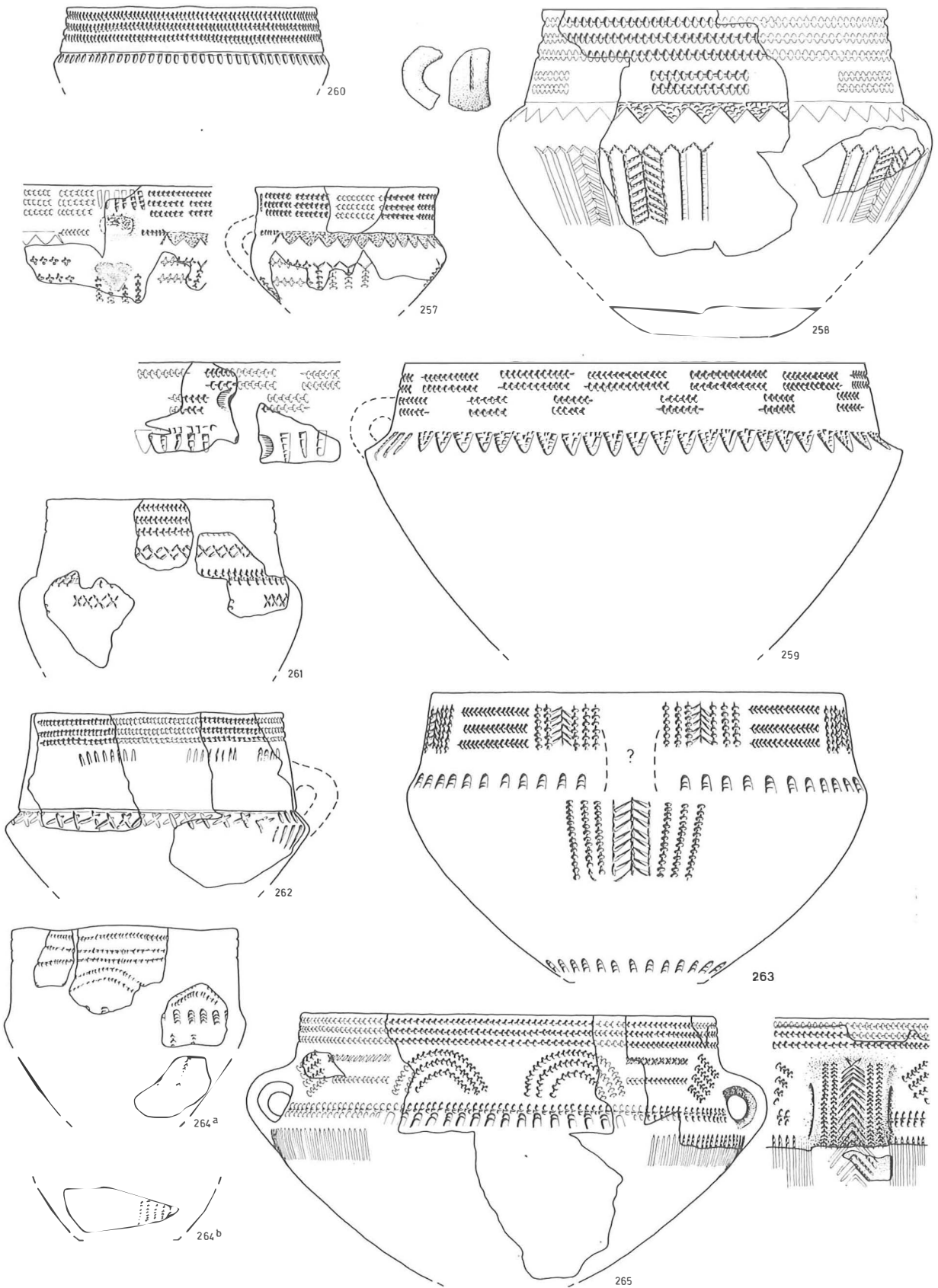


Fig. 41. Pottery.

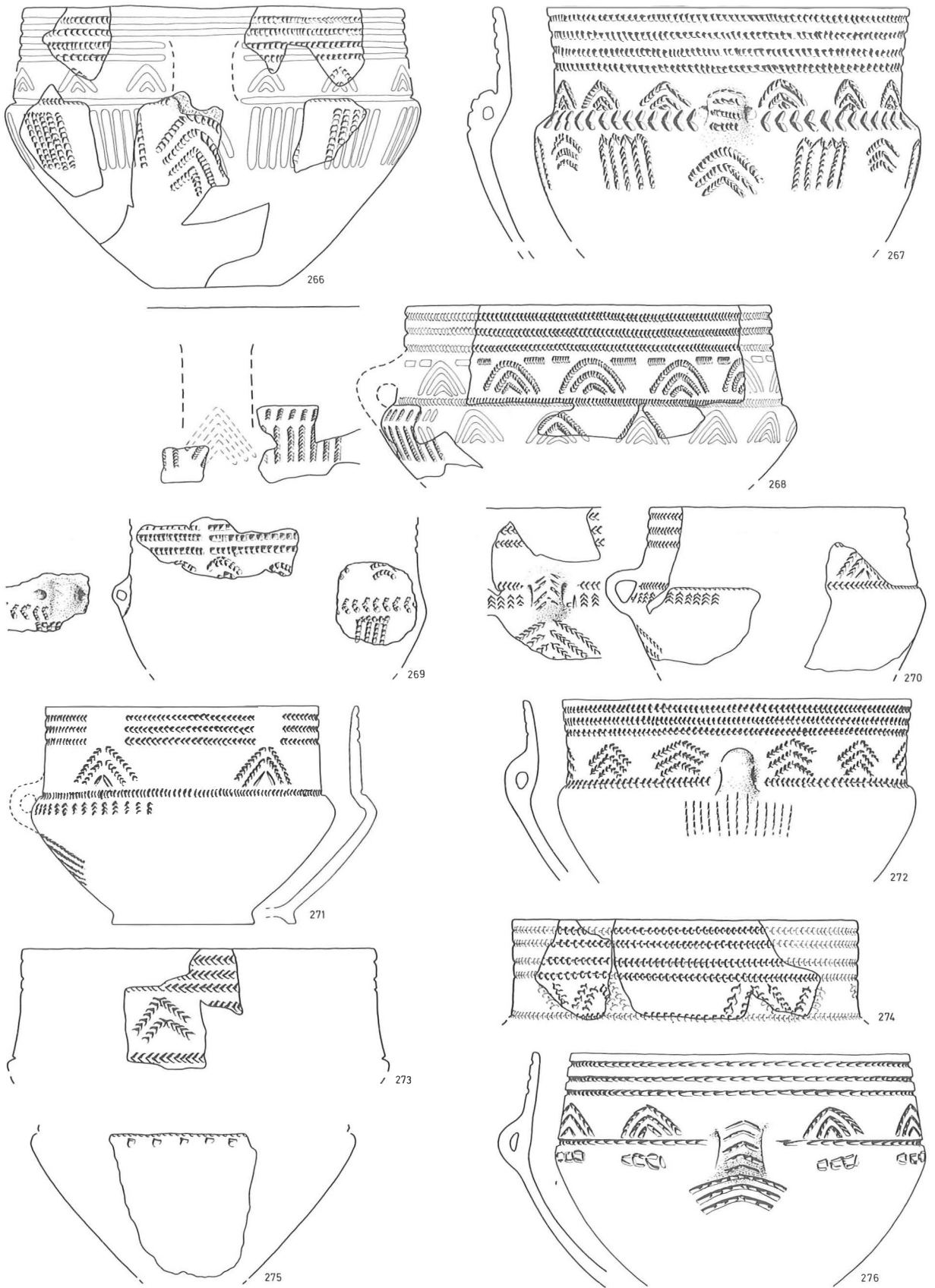


Fig. 42. Pottery.

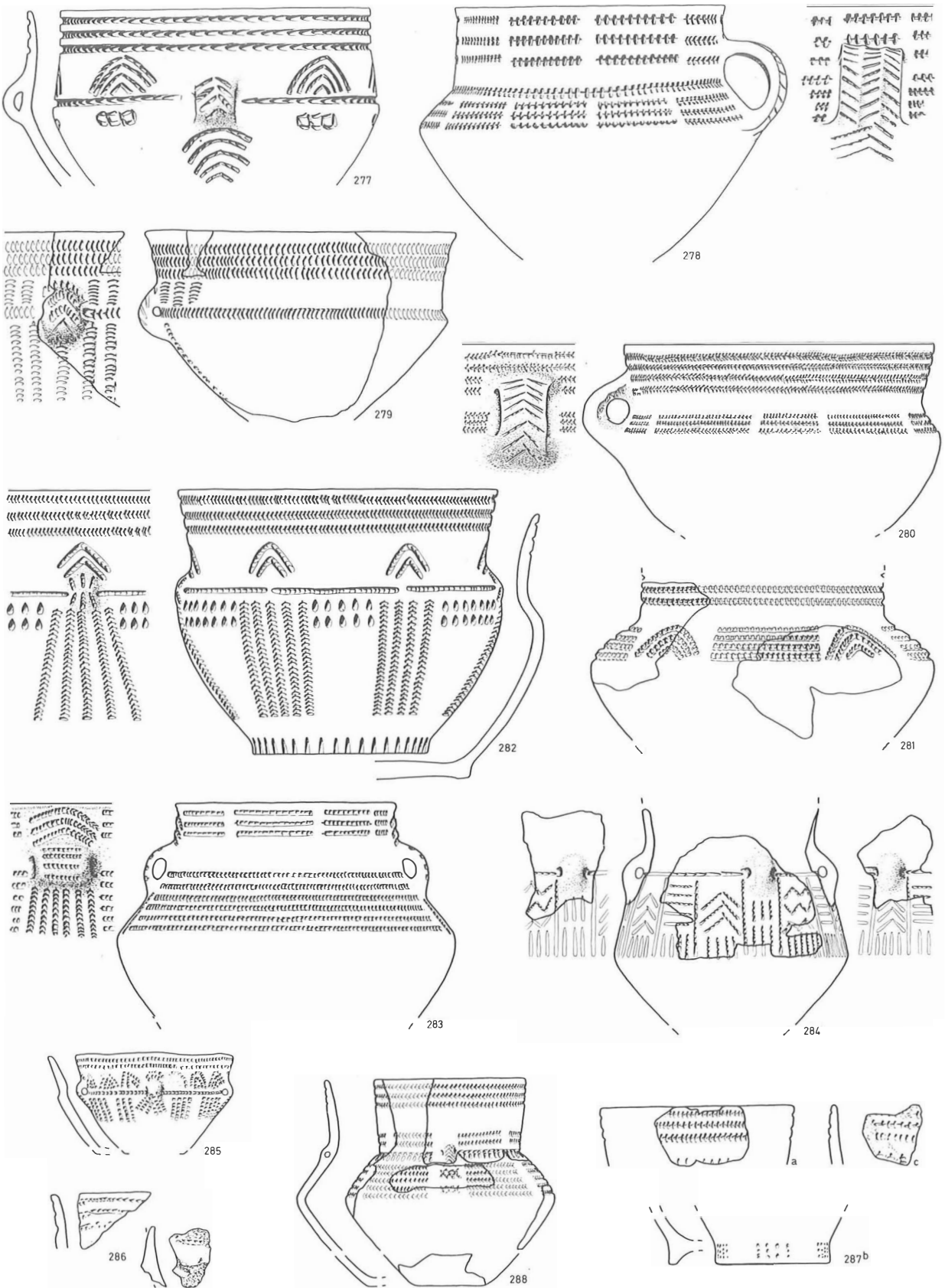


Fig. 43. Pottery.

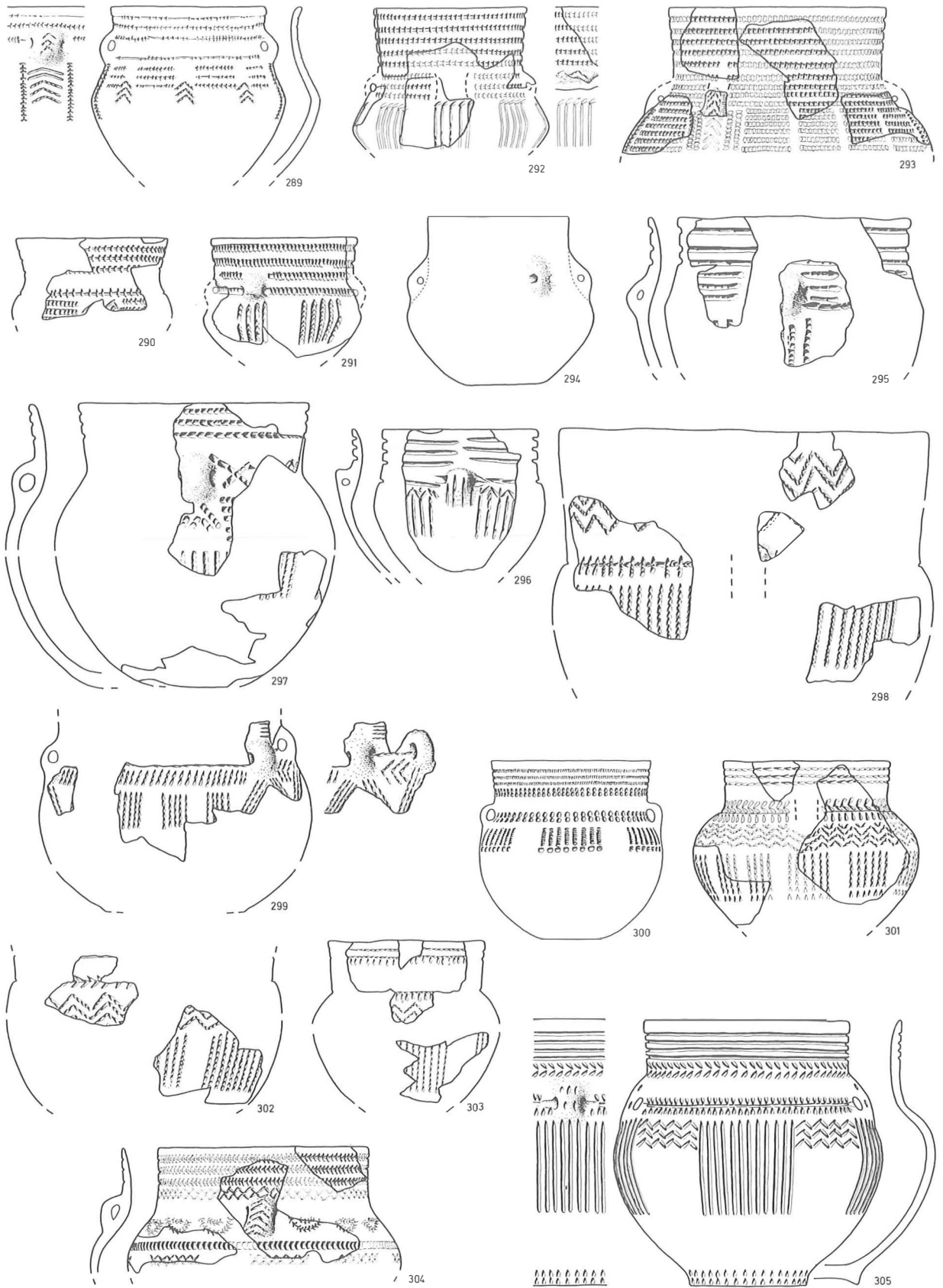


Fig. 44. Pottery.

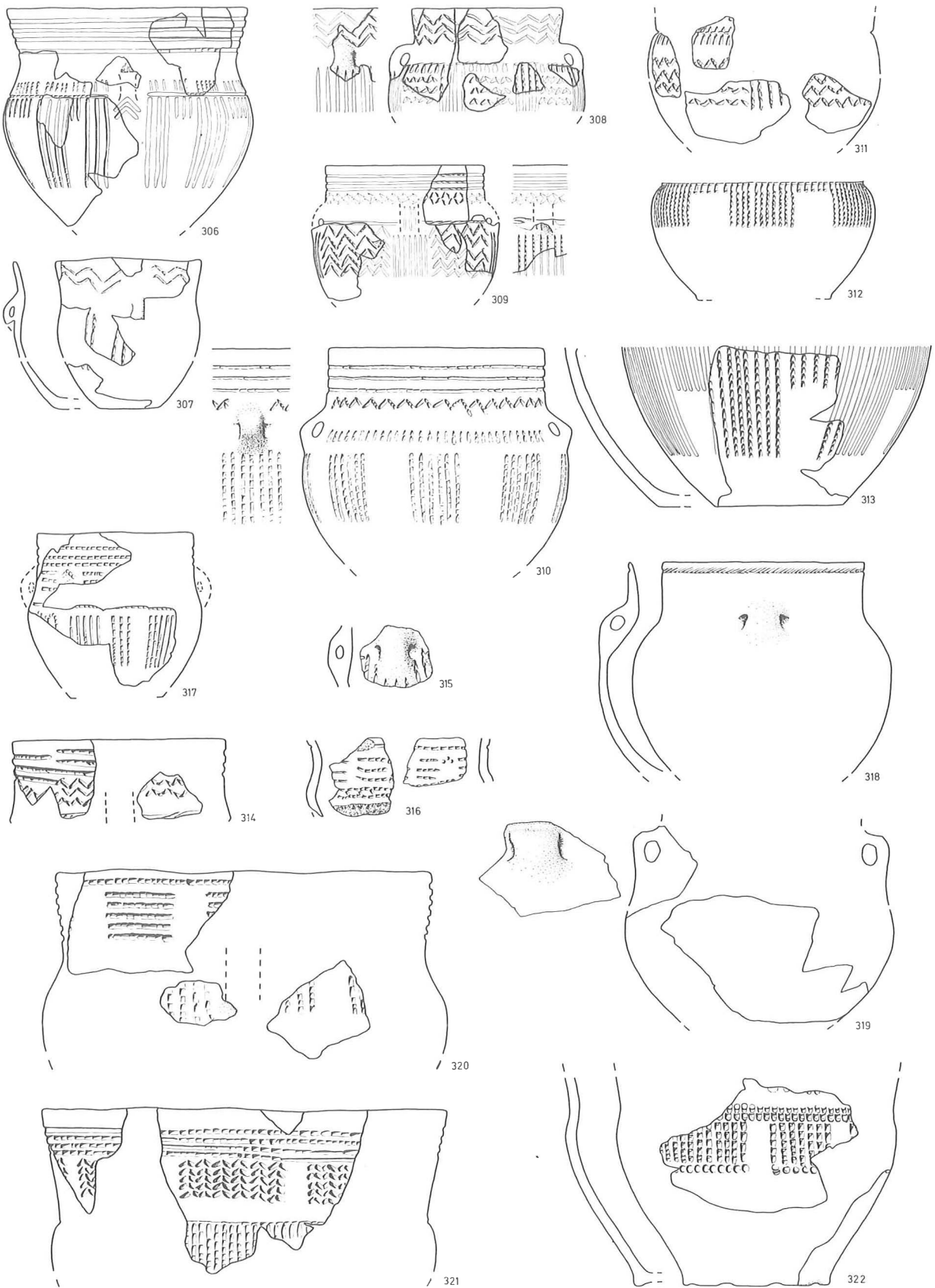


Fig. 45. Pottery.

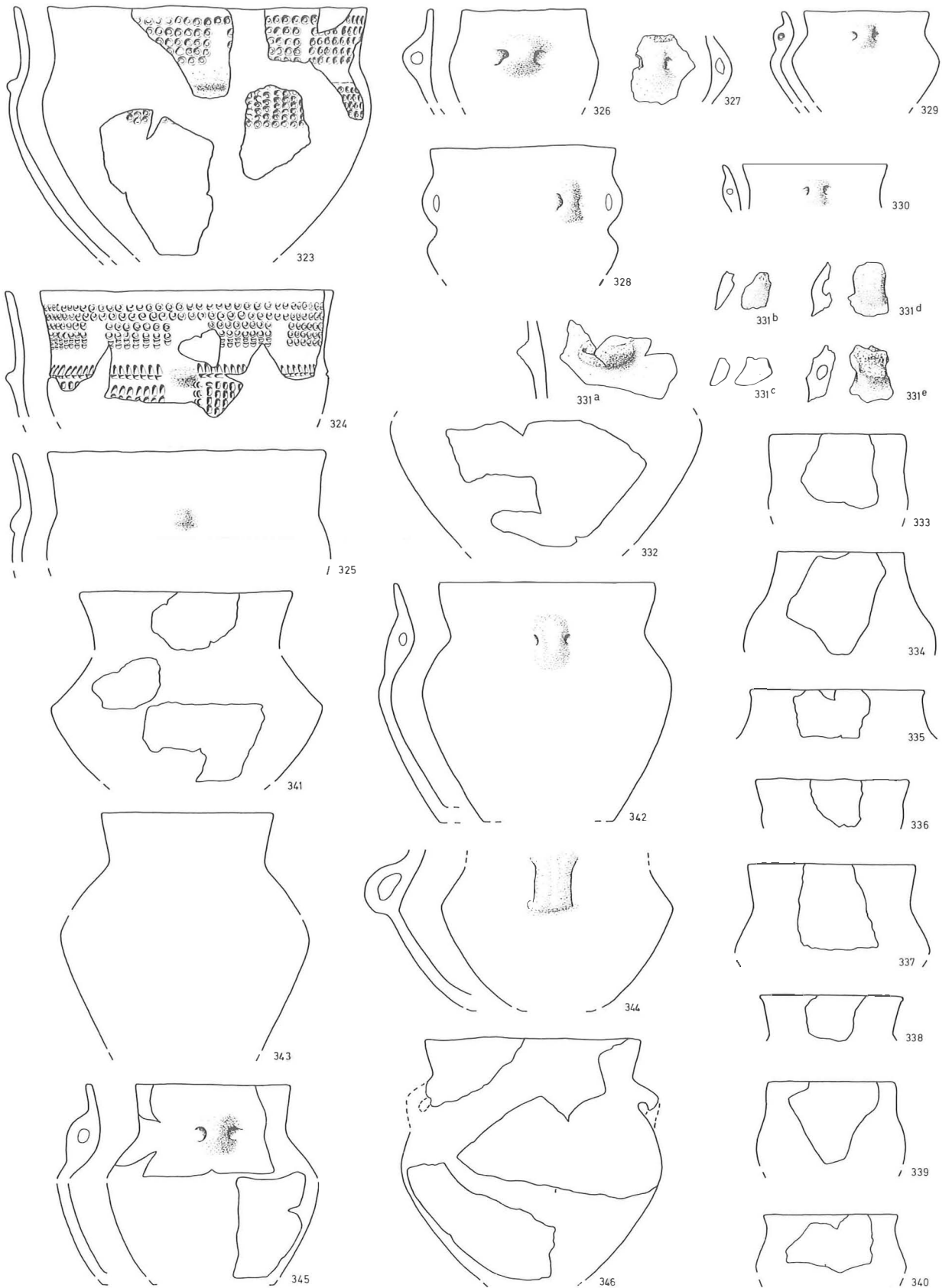


Fig. 46. Pottery.

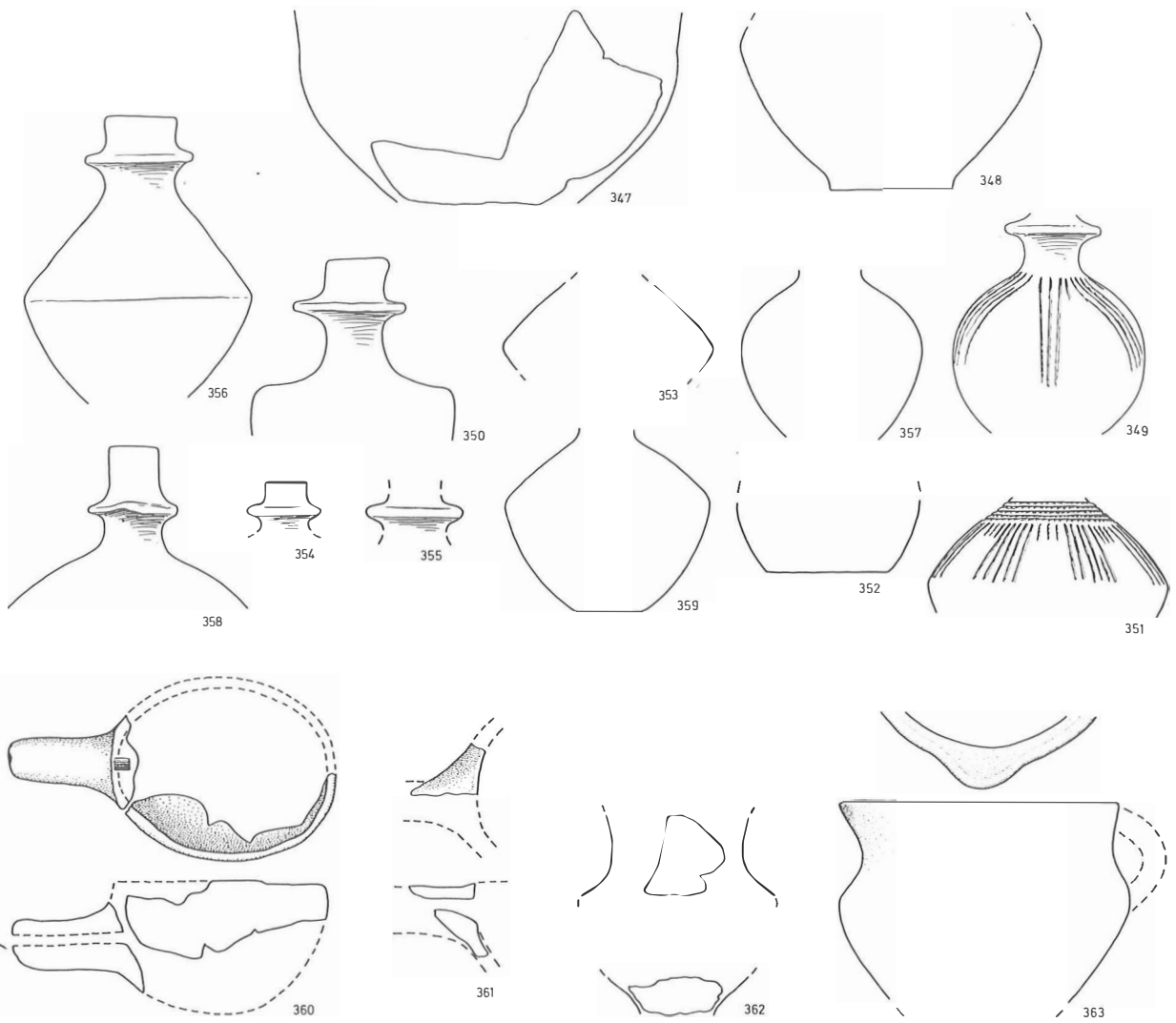


Fig. 47. Pottery.

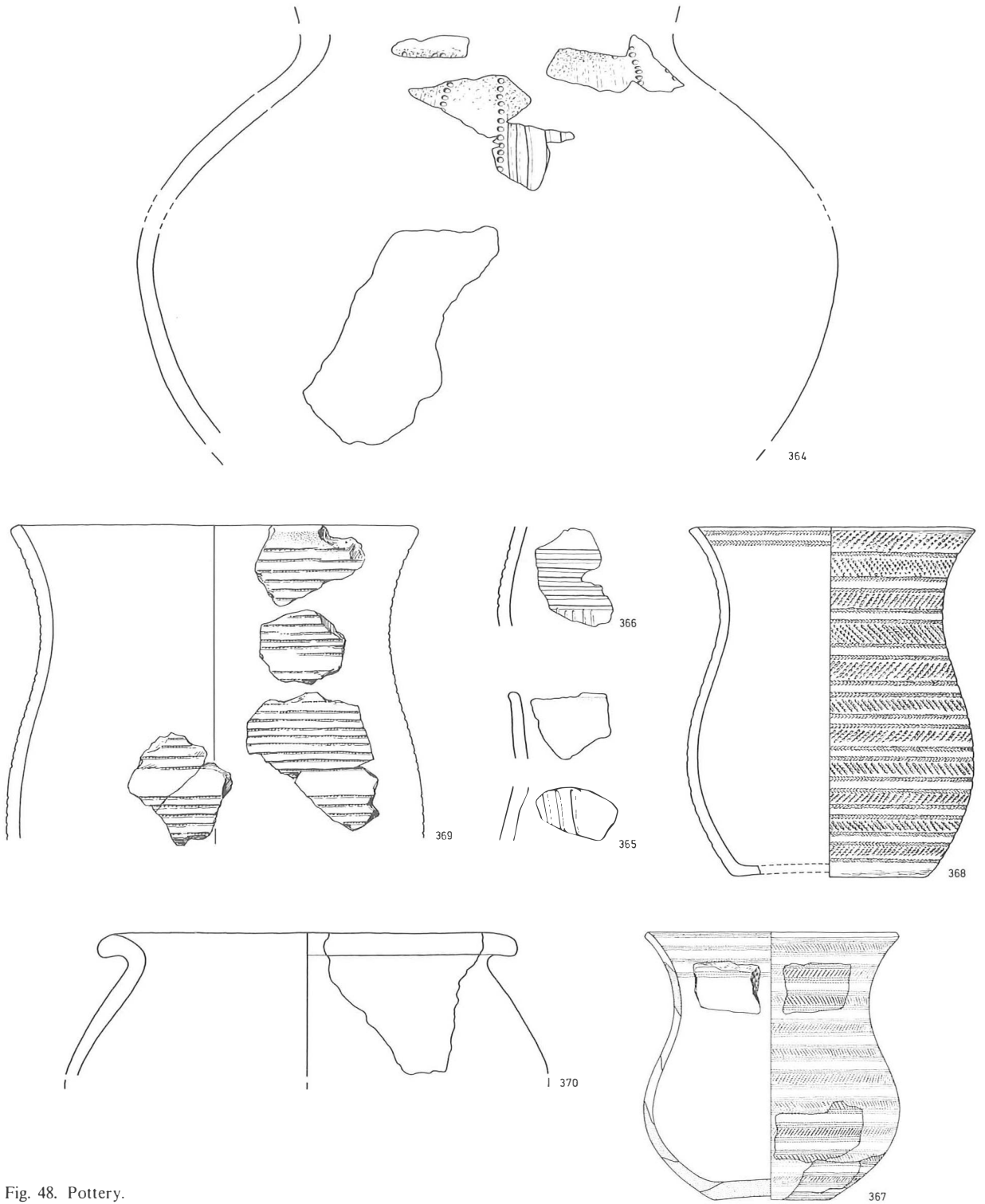


Fig. 48. Pottery.

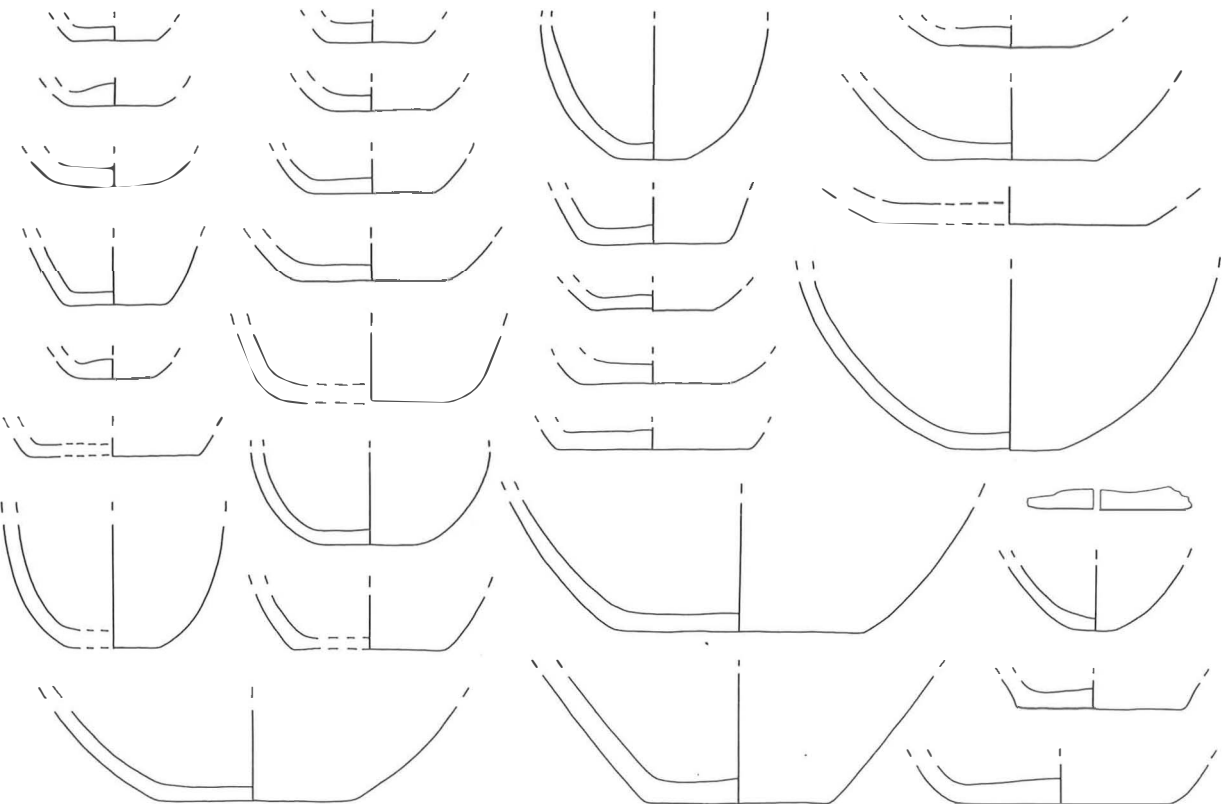
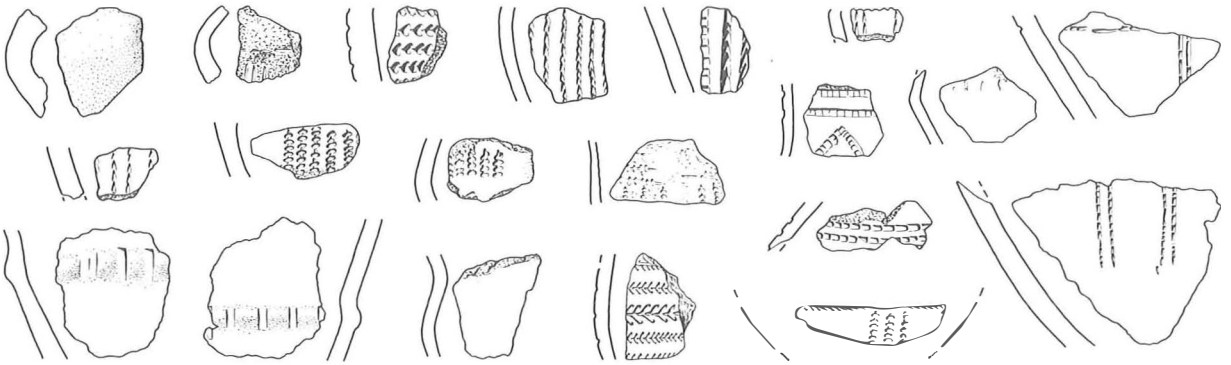
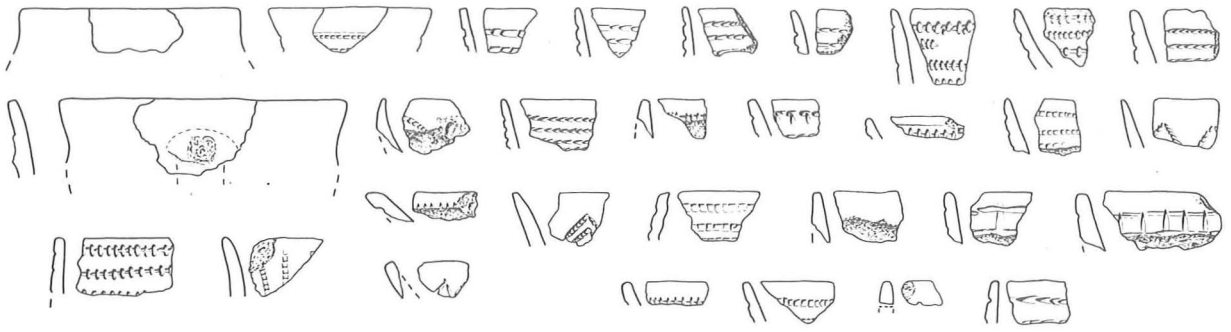


Fig. 49. Pottery.

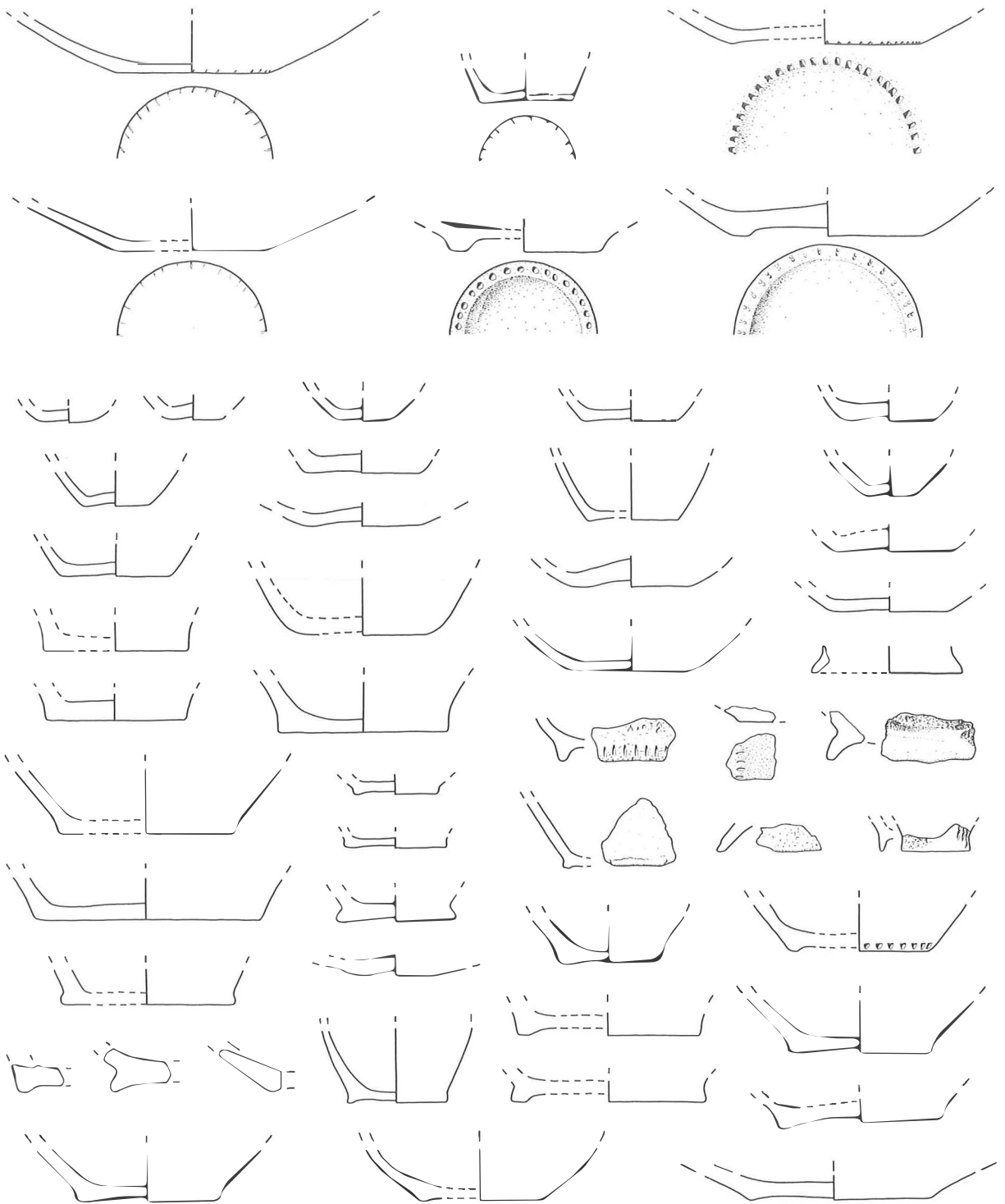


Fig. 50. Pottery.