

A RE-ASSESSMENT OF THE *HUNEBEDDEN* O1, D30 AND D40: STRUCTURES AND FINDS

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ABSTRACT: Re-investigations at three *hunebedden* excavated by A.E. van Giffen in 1918 are described and changes to the original conclusions given. O1 is shown to have had a minimum of seven pairs of side stones. The mounds of D40 and D30 are shown to have been constructed in several phases; the primary mounds did not completely cover the chambers. The finds have been re-analysed.

KEYWORDS: Netherlands, Neolithic, TRB culture, *hunebedden*, pottery, typochronology.

1. INTRODUCTION

In the summer and autumn of 1918, A.E. van Giffen investigated five *hunebedden* in Drenthe, namely D21 and D22 at Bronneger, D30 at Exlo, D40 at Emmen, and D53 at Havelte, and the remains of a destroyed *hunebed* in Overijssel, O1 on the estate De Eese, 6.5 km north of Steenwijk.

The excavations were made possible thanks to an 'unusually generous gift' from M. Onnes van Nijenrode, the owner of the De Eese estate (van Giffen, 1919: p. 110, *Ver slag PMD Assen over 1918*, p. 7). As labourers, van Giffen used a number of Belgian interneees, of whom A. van Dinter and J. Verdonck acted as supervisors and draughtsmen. Neither van Giffen nor his fieldteam had any experience of monuments on sand. It is therefore not surprising that the weakly developed soils in and beneath the mounds of the excavated *hunebedden* were either not recognized or only recognized in a few places. The fill of the burial chambers and the contents of the large extraction pit where the chamber of O1 had stood formerly were only dug over for finds with a spade. Sieving of chamber fills was not introduced until the 1960s, during the excavations by J.A. Bakker of D26 and by J.N. Lanting of G2. There is no doubt that the limited number of small artefacts such as transverse arrowheads and amber and jet beads amongst the finds of the 1918 excavations was due to the method of excavation employed by van Giffen. Most of the very small finds must have been missed during the digging of the stony and gritty chamber fills. Many of the smaller sherds and pieces of flint must have escaped discovery as well.

This does not mean that the results of the 1918 excavations have no value; on the contrary. In a number of cases, van Giffen left parts of the mounds intact in 1918 so that further research and re-interpretation of the original data is still possible. He did this at D30 and D40

amongst others, and at O1 where in September 1985, October 1987 and September 1985 respectively several of his cuttings were re-opened and the profiles inspected again. Recently, finds from these three sites have been re-examined and new drawings prepared.

The details of the excavations and descriptions and drawings of the finds are presented together in this article. It is assumed that van Giffen's publications of D30 and D40 (van Giffen, 1925/27, II: pp. 207-230, pp. 165-207) and of O1 (van Giffen, 1924, resp. 1925/27, II: pp. 311-322, the latter however, without finds catalogue) are known to the reader. The original documentation of the 1918 excavations is housed in the B.A.I., and consists of field drawings, photographs and finds lists. Excavation notes were not made at the time. The finds from O1 and D40 are stored in the B.A.I., those from D30 in the Provinciaal Drents Museum in Assen.

2. THE DESTROYED *HUNEBED* O1

2.1. The site (fig. 1)

In July and August 1918 van Giffen excavated the remains of the destroyed *hunebed* O1 on the De Eese estate in the *gemeente* Steenwijkerwold (now *gemeente* Steenwijk). This was without doubt the *hunebed* drawn by Petrus Camper in 1781 (fig. 2) when it was still in a reasonably good state of preservation although the capstones had already been displaced (Camper, n.d.). At some stage during the first half of the nineteenth century, possibly during the 1840s, the burial chamber was demolished. Van Giffen's publication is not very satisfactory (van Giffen, 1924b; 1925/27, II: pp. 311-322) which is largely due to the fact that he had no experience whatsoever with *hunebedden* at that time. It would have been much better if

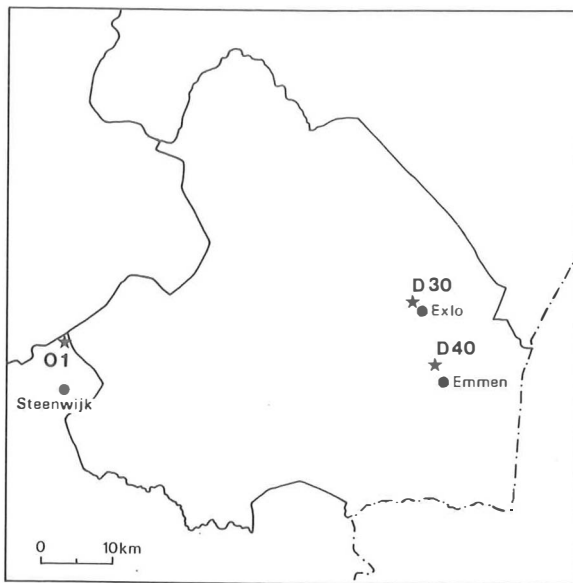


Fig. 1. Location of O1 near Steenwijk, D30 near Exlo and D40 near Emmen.

he had started with an undisturbed *hunebed* and then moved to O1, instead of the other way around as he might have developed a better understanding of the 'foundation pits', 'extraction pits' and the dimensions of chambers etc. He considered one part of the O1 mound to be an independent burial mound (No. II), apparently as a result of a mistaken interpretation of Camper's 1781 drawing. Camper's burial mound C is van Giffen's burial mound No. III, which lies 85 m to the north of the *hunebed* O1. His reconstructed groundplan is too short for a *hunebed* which according to Camper was 'fairly large', 'made of very large stones', and which according to his drawing, had at least 5 pairs of side stones.

During the excavation, van Giffen carefully mapped the remains of O1 and burial mound No. III in relation to the provincial border between Overijssel and Drenthe and actually noted down the distances to the border posts 5 and 6. In spite of this, in 1985 there was some uncertainty about the precise location of the monument. A *hunebed* and two burial mounds are shown immediately west of the border in the publication of the

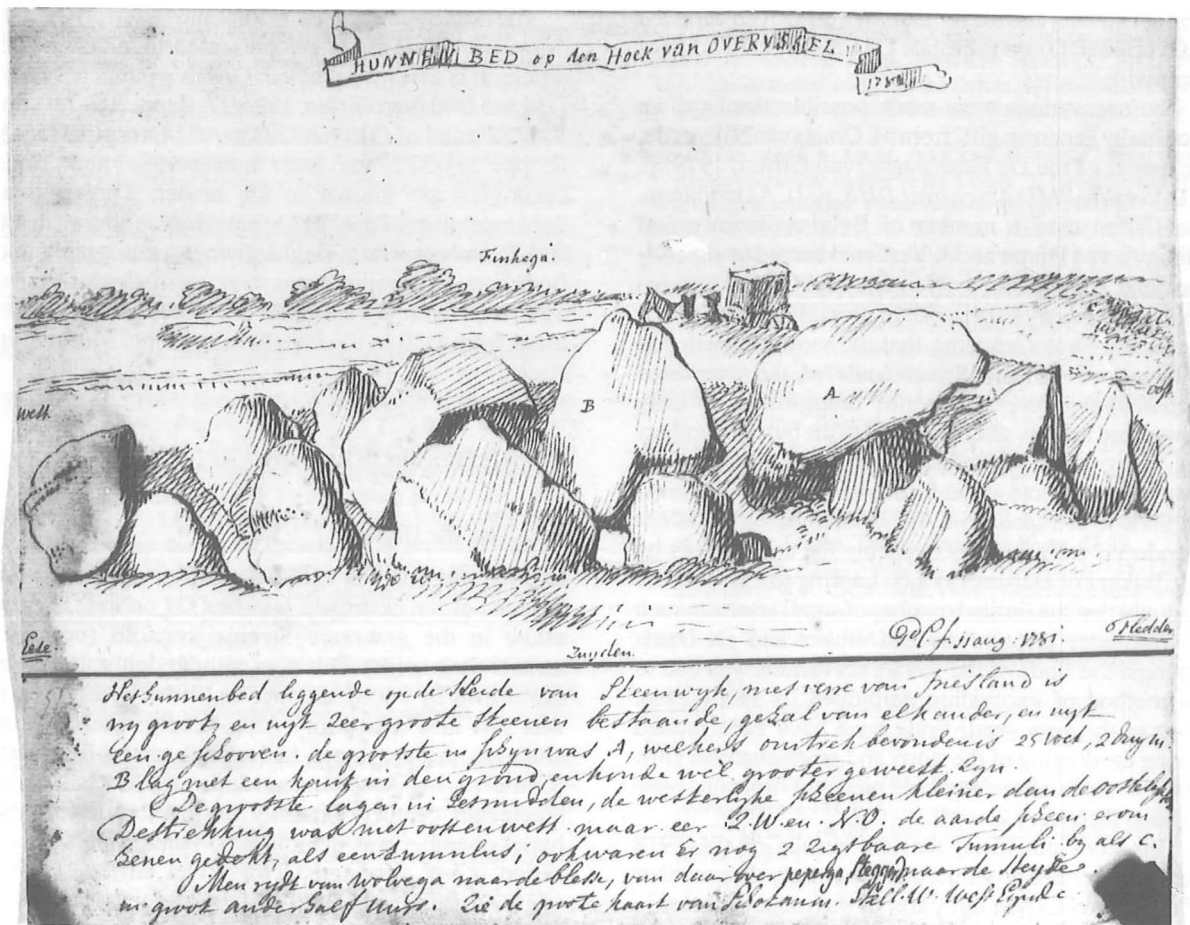


Fig. 2. Drawing and description of O1 by Petrus Camper. After a photocopy of the manuscript in the B.A.I.

excavation of a burial mound on the Drents part of the De Eese estate (Waterbolk, 1964: fig. 11). According to the list of protected monuments in the *gemeente* Steenwijk, the two burial mounds were protected, but the *hunebed* was not mentioned. There was also no visible trace on the ground of a prehistoric burial monument on the spot indicated although both the burial mounds were prominently visible. Further inspection made it clear that in fact the southern mound shown on Waterbolk's map was the mound of the *hunebed* O1 (i.e. van Giffen's mounds I and II), and the northern mound, van Giffen's mound III. The oval shape of the southern mound with the rectangular hollow in the centre already indicated this and it was confirmed by measurements in relation to the provincial border.

2.2. The 1918 excavation (fig. 3)

In advance of the excavation in 1918 a contour plan was made. The heights were taken relative to the base of the

boundary post 6, and not corrected to heights NAP. It appears from this contour plan that two oblong mounds lay on both sides of the southwest-northeast oriented hollow in which the remains of the burial chamber had previously stood. Van Giffen began his excavation by putting a narrow northwest-southeast trial trench across both remaining higher areas and the hollow. This trench is shown on the published ground plan only by a dotted line marking its position on the west profile face (section face A-B). The outline of the cutting and the word *proefgreep* (trial trench) are still visible on the original field drawing of the contour plan.

After this, van Giffen excavated an extended cutting between the two hillocks. This cutting was apparently cleared in stages down to what he took to be undisturbed subsoil. In addition, he made two smaller cuttings in the northern rise which he named mound II. Numerous pits with recent filling were located in the large cutting, some of which did not reach undisturbed ground. A few of these pits were identified as the extraction pits of side or end stones, apparently on the basis of their stony

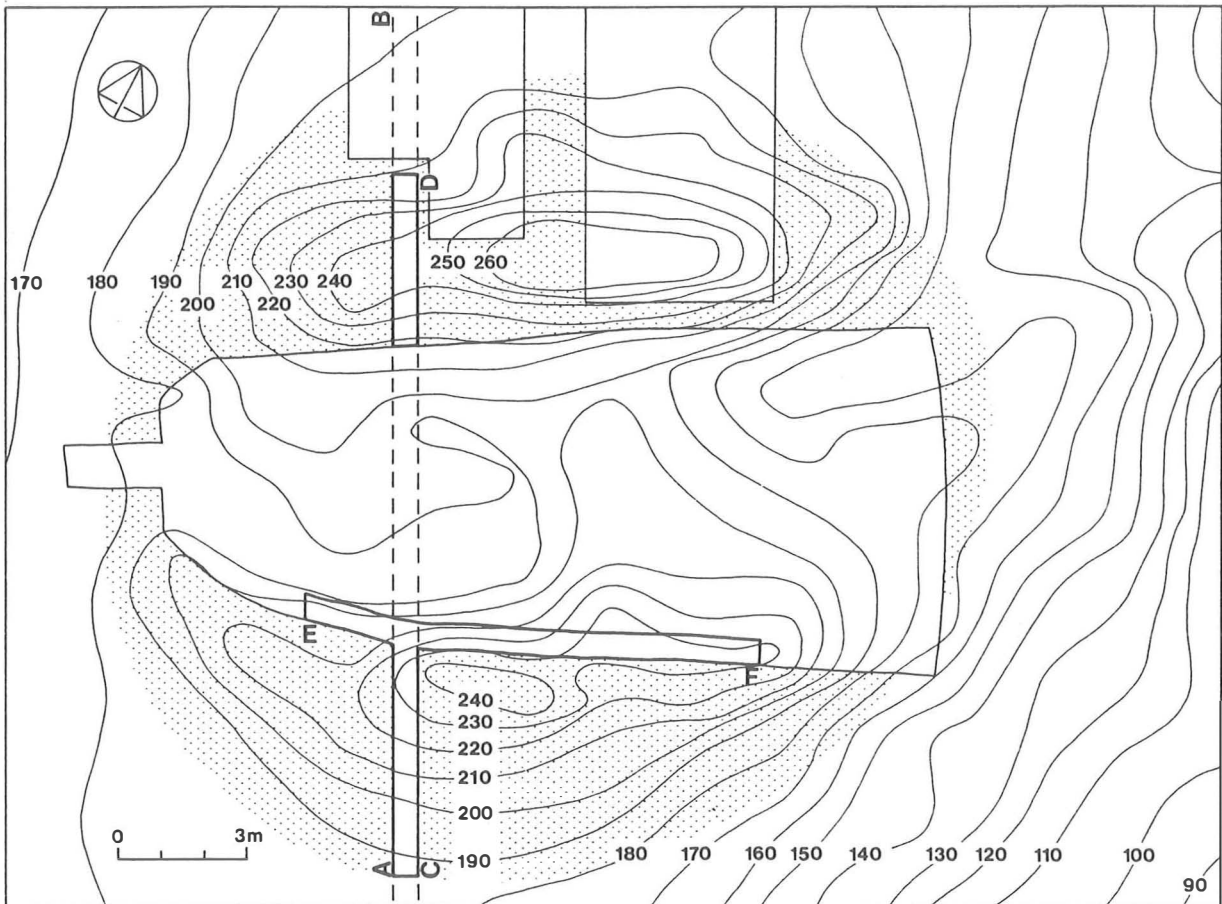


Fig. 3. Contour plan of the destroyed *hunebed* O1 in 1918. Elevations are relative to the base of borderpost 6 on the provincial border. The trial trench (interrupted line) and the three extended cuttings (thin solid line) of 1918 and the trenches of 1985 (thick line) are shown. The mound is shaded. The fig. 4 profiles are indicated by letters.

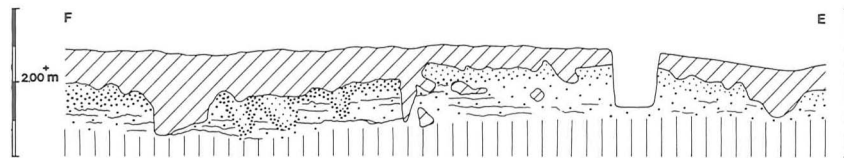
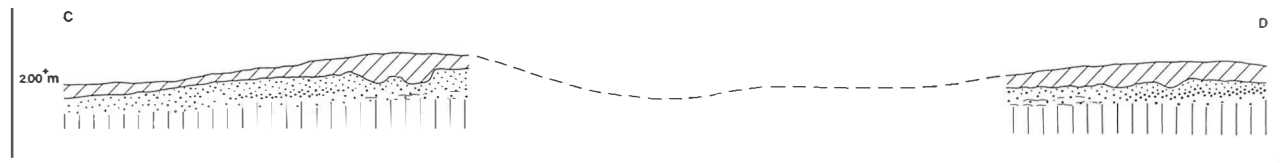
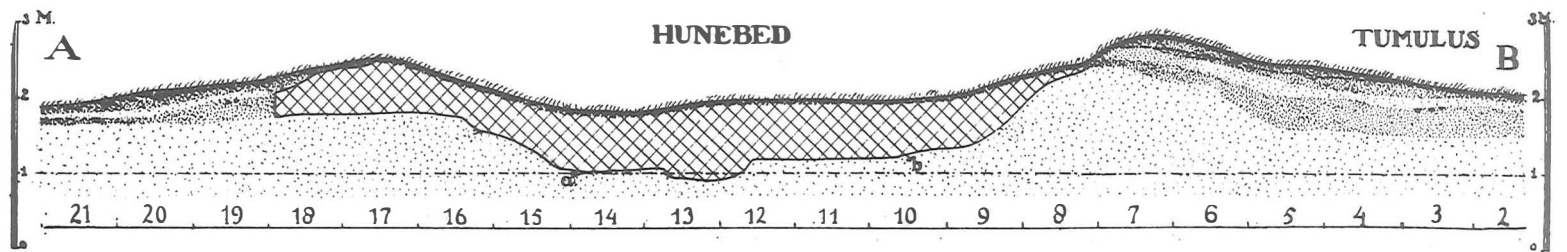


Fig. 4. Profiles through the mound, drawn in 1918 (A-B) and 1985 (C-D and E-F). The locations of these profiles are indicated in fig. 3.

filling. Other pits were marked as 'stone free' on the field drawings.

Other than this, the plans and section drawings of 1918 are not very informative.

2.3. The re-excavation of 1985 (fig. 3)

During the re-excavation in 1985, a trench about 10 metres long was excavated along the south side of van Giffen's large cutting. The profile was cleaned and drawn. The northwest-southeast oriented trial trench was also re-opened, for a length of 6 m in the southern rise, and for about 4 m in the northern one. This trench appeared to be about 0.5 m wide. The east profiles of these trenches were drawn. The levels were taken relative to the base of the border post 6, as in 1918.

Unfortunately the three profiles turned out to be particularly uninformative because of the very strong secondary staining resulting from the development of the soil profile in the top of the mound. A strong humus infiltration had taken place under a thick leached horizon. A similar well-developed soil profile had been en-

countered by Waterbolk in 1956 in the burial mound in the Drenthe part of the estate, about 700 m north of O1 (Waterbolk, 1964). The original ground level and the structure of the O1 mound were no longer recognizable due to the strong discolouration which had occurred.

During the cleaning of the profile sides, several big pieces of a large bowl (No. 1) were found in undisturbed ground 2.0 m above the level of the base of the boundary post 6, at the point where the eastern profile of van Giffen's trial trench through the southern rise had been cut by the long south side of the large cutting. A small undiagnostic sherd (No. 50a), was found at a level of 1.70+ m, in the profile along the long south side of the cutting.

2.4. The reconstruction of the mound and the burial chamber

From the contour plan which van Giffen had made in 1918, and taking into consideration the location of O1 on a low elevation, the shape and height of the mound can be reconstructed without difficulty, that is, at least

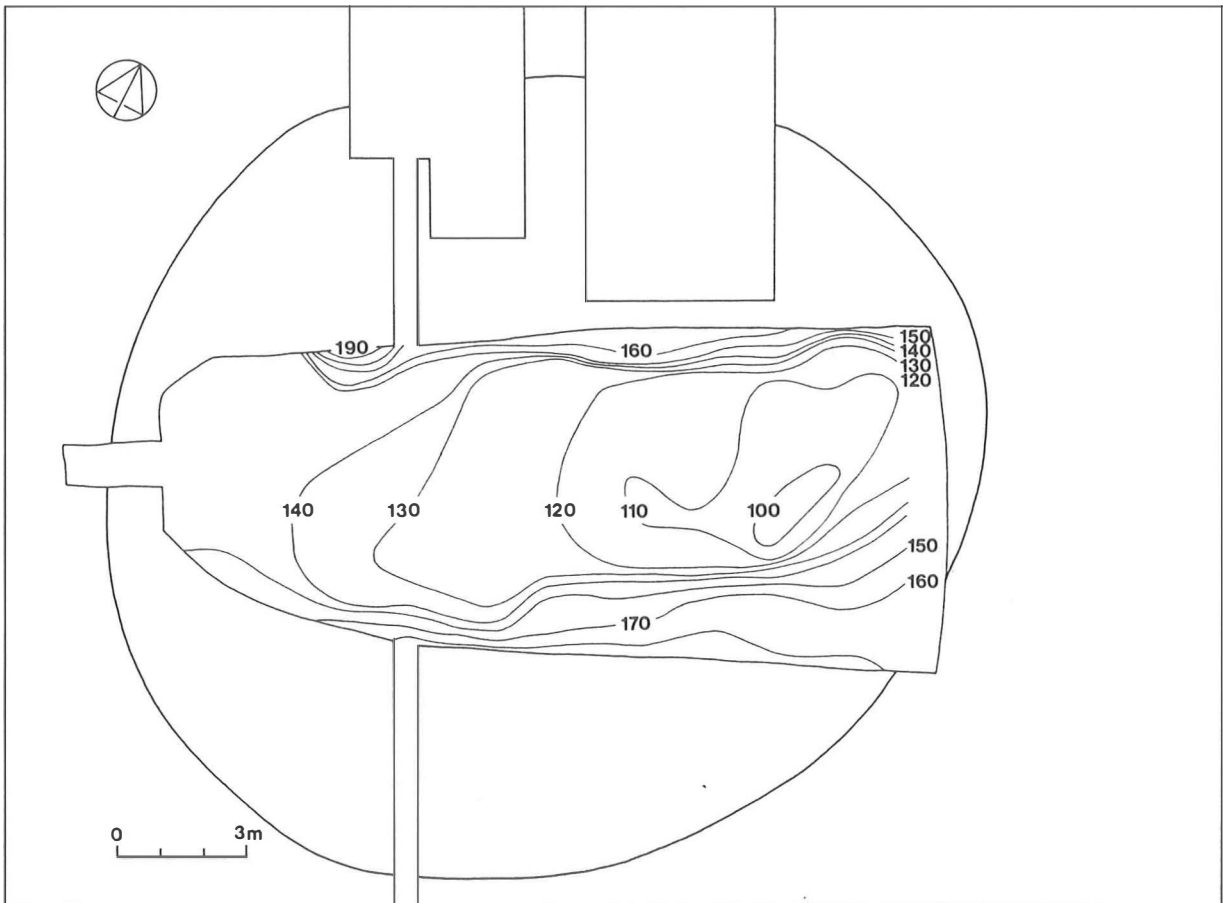


Fig. 5. Contour plan of the subsoil of van Giffen's main cutting, based on heights noted on the 1918 field drawing. The edge of the foundation pit of the megalithic structure is clearly visible. The outline of the mound is also indicated.

the mound which existed after the demolition of the hunebed (fig. 3). It can be assumed that the original ground level occurred at a depth of about 1.80 m on the south side and about 2.0 m on the north side, based on the pattern of the contours outside the mound. The mound itself was oval, oriented southwest-northeast, with dimensions of c. 21×16 m. The 1918 and 1985 profiles of the mound show that it had not been heightened by soil thrown out from the centre during the destruction of the burial chamber (fig. 4). The higher parts – 2.6 m on the north side and 2.4 m on the south side – indicate that it was 0.6 m high in these places. This means that the sherds of the previously mentioned bowl No. 1 lay in the body of the mound and that the small weathered sherd (No. 50a) lay in the old soil under the mound.

During the excavation of the central hollow, van Giffen apparently cleared out the soil, which had been dug over during the demolition of the chamber, down to the level at which the individual pits showed up in undisturbed subsoil. As a result, the base of the cutting was very irregular. A large number of levels were taken

to show this. Only a small number of these were reproduced on the published ground plan on which van Giffen used a stippled line in an attempt to indicate how the ground rose up towards the sides of the cutting. This was not very successful. However, using the many levels recorded on the field drawing it is possible to make a contour map that shows the relief quite clearly (fig. 5). In plan, the outline of a 4.5 m wide depression is visible. This appears to have a rounded end at the northeast but, unfortunately, no levels were taken for the last 1.5 m of the cutting. The depression has no clear end at the southwest. Most of this feature must have been the foundation pit, i.e. the pit which was dug by the builders of the burial chamber and in which it was constructed. The disappearance of a clear edge at the southwest end is probably due to the radical destruction of the chamber. The length of the foundation pit appears to have been at least 14 m to judge from the preserved straight edges of the southwest half. There are however, strong indications that the foundation pit had a length of at least 17 m (see below).

The side and end stones of *hunebedden* usually stand

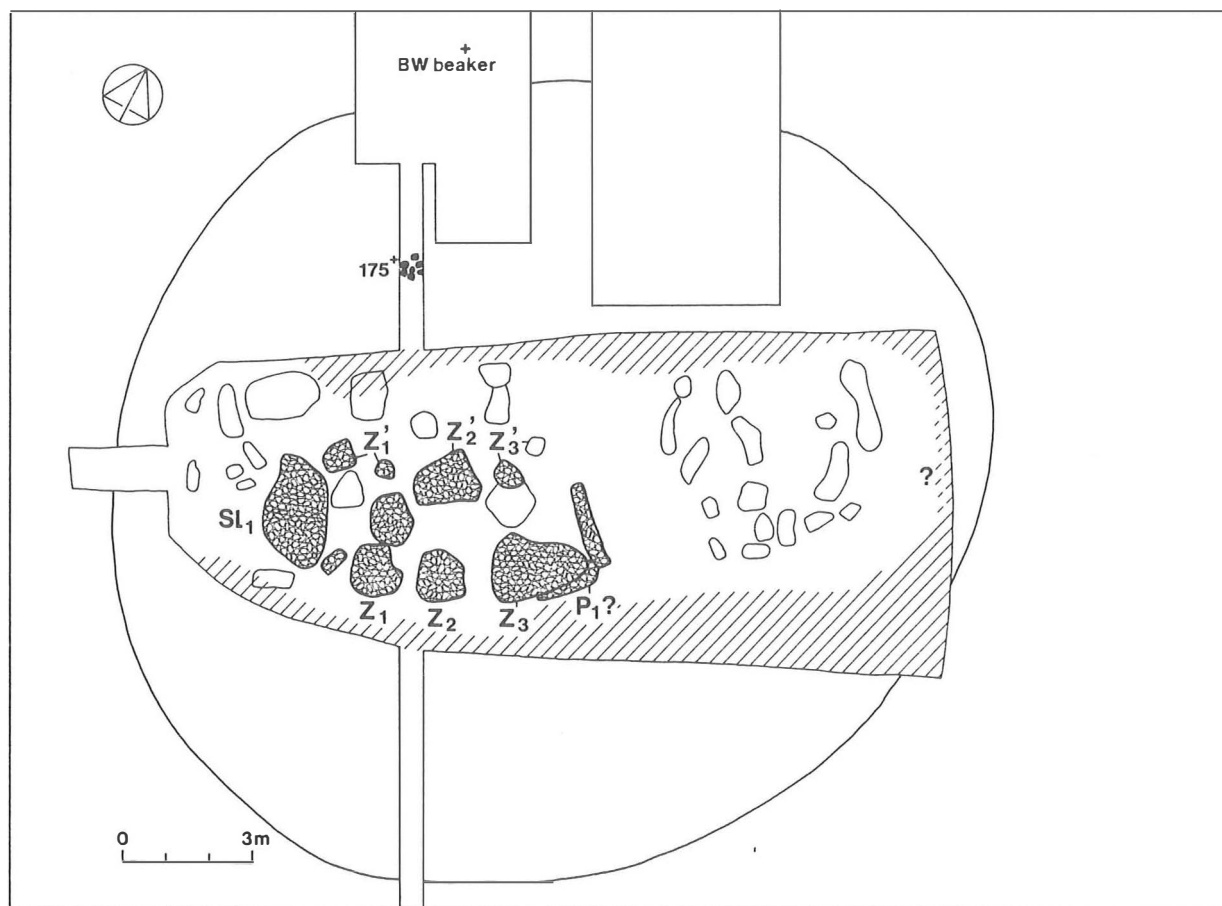


Fig. 6. Extraction pits and other recent disturbances in the subsoil of the main cutting. Redrawn after van Giffen (1925/27, Atlas: pl. 149). Pits with stony filling are shaded. Letters and numbers refer to the new identification of the extraction pits. The outline of the mound and the foundation pit are indicated.

on a base of field stones and sand in individual pits dug into the the base of the construction pit. Extraction pits, i.e. holes with a modern fill where end and side stones had formerly stood, are often still found during the excavation of destroyed *hunebedden*, if the subsoil has not been dug away to any great depth. A large number of pits in van Giffen's cutting were drawn of which several were identified as extraction pits apparently on the basis of their stony filling (fig. 6). According to van Giffen, these extraction pits belonged to a small *hunebed* of five pairs of side stones with external dimensions of c. 8x3.5 m.

The contour plan of the excavated cutting shows clearly that the subsoil in the eastern half of the foundation pit was dug out to a greater depth than in the western half. The extraction pits of the side and end stones must have been dug away as well. The features which van Giffen described as extraction pits only indicate the western half of the burial chamber, or at least in part because several pits do not fit into the picture. It is suggested here that Z1 and Z2 of van Giffen's ground plan together represent the remains of Z1, Z3 and Z4 should be adjusted to the numbers Z2 and Z3. On the south side, it is suggested that Z1' be disregarded and Z2', Z3' and, Z4'/Z5' be renumbered Z1', Z2' and, Z3'. The socket of a western portal stone is perhaps also included in van Giffen's Z4'/Z5' extraction pit. Van Giffen's extraction pit S12 may have been caused by the digging out of one of the capstones, just as pit D2. To judge by the position of S11, the length of the foundation pit must have been c. 17 m. Apparently, less than half the ground plan survived, represented by the extraction pits of one end stone, 3 pairs of side stones and possibly one portal stone. Neither the fieldstone floor of the burial chamber nor the stone packing around it had survived.

It is clear that van Giffen's reconstruction of O1 is not supported by the size of the mound, the length of the foundation pit and drawings and descriptions made by Camper. Camper's drawing shows a *hunebed* with certainly 5 but possibly 6 or 7 pairs of side stones, which according to him were *zeer groot* (very large). From this it may be taken that O1 was comparable to those Drenthe *hunebedden* which were built of very large field boulders. *Hunebedden* with 5 pairs of large side stones can be expected to have an external length of 8.5-10 m, 6 pairs as having one of 10-12 m and 7 pairs, 12-15 m. The length of the associated foundation pits can be estimated at 10-12 m, 12-14 m, and 14-17 m respectively. With a length of c. 17 m for the foundation pit, O1 could have had 7 pairs of side stones according to these calculations. Camper's drawing does not exclude this possibility. The associated length of the burial chamber proper must have been as much as 14-15 m, clearly longer therefore than the 8 m which van Giffen allowed for at O1.

Hunebedden with 7 pairs of side stones may have a stone kerb around the base of the mound. However,

there were no indications of a kerb found in the excavation cutting of 1918. A small pile of fieldstones were discovered in situ during the re-opening of the trial cutting suggesting that a kerb may have been present (fig. 6).

2.5. The finds (fig. 7)

2.5.1. *The distribution of the finds*

During the 1918 excavation a surprisingly small number of finds were recovered. This is partly the natural result of the very complete destruction of the burial chamber. On the other hand, one must also consider that during the excavation insufficient attention was paid to the recovery of sherds etc. This is suggested by the fact that during the backfilling of the excavation trenches a small stone axe and various large sherds were found in the spoil heaps. As may be anticipated, the majority of the finds with known findspots came from the western half of the burial chamber. Only a few sherds came from the deeply dug away east part. Likewise, a few sherds came from the two excavated cuttings in the northern half of the mound, in part from the undisturbed subsoil according to the finds book (find number 14). During the 1985 re-excavation, several large sherds of a bowl (No. 1) were discovered in the undisturbed mound. Unfortunately it was no longer possible to discover if these sherds were deposited during the raising of the mound or belonged to an offering buried in the mound later.

Outside the edge of the mound sherds of a Barbed Wire pot of the Early Bronze Age were discovered. The sherds are apparently recorded twice in the finds book, under the numbers 2 and 29. Find number 29 does not appear on the field drawings. In the publication the pot has been given the find number 28 by mistake. The sherds apparently lay together at a depth of 0.6 m beneath the surface. No pit was visible, probably because of the strongly developed soil profile. The vessel is a beaker, not a large domestic/storage vessel. Because of its broken state, it is not clear whether it represents a burial gift, or sherds in a domestic pit.

The finds from O1 consist of a relatively small group of sherds (about 120), two stone axes, a flake from a polished flint axe, two flint flakes and an amber bead. With the exception of the sherds of bowl No. 1, two flint flakes (Nos 58 and 60), and a single undiagnostic sherd (No. 50a) which were found in 1985, all the finds stem from the 1918 excavation.

The pottery from the 1918 excavation was drawn on three occasions; a selection of sherds was drawn for the *Atlas der hunebedden* published in 1925/27; a smaller selection was drawn, possibly for a revised edition, but never published (archives of the B.A.I.); and in the 1940's, the draughtswoman J.C. Kat-van Hulten drew almost all the pottery for the B.A.I. finds register. The first two sets of drawings included two joining rim sherds of a funnel beaker with two zigzag lines below

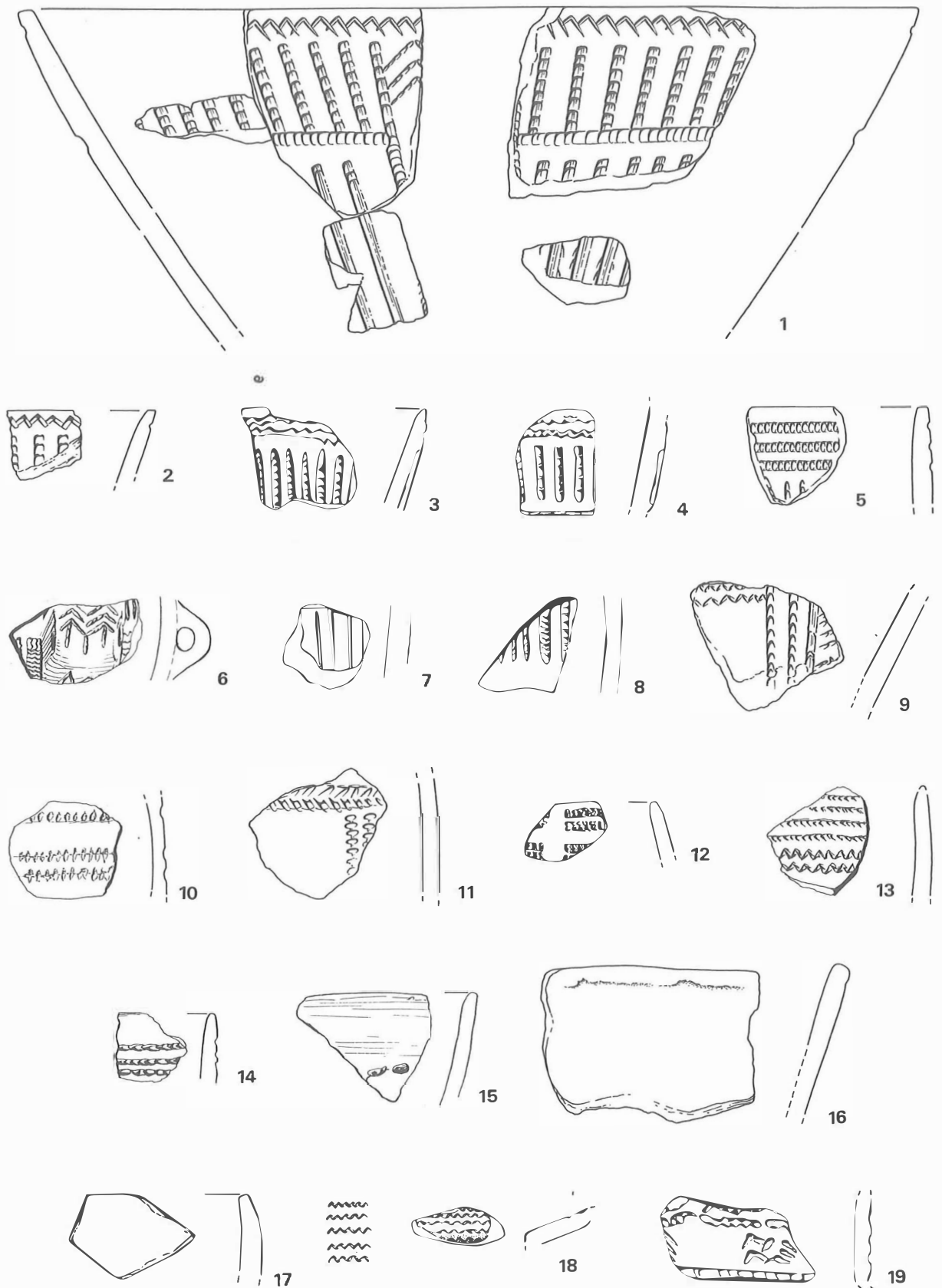


Fig. 7a-c. The finds from the destroyed *hunebed* O1. Scale: all finds 1:2.

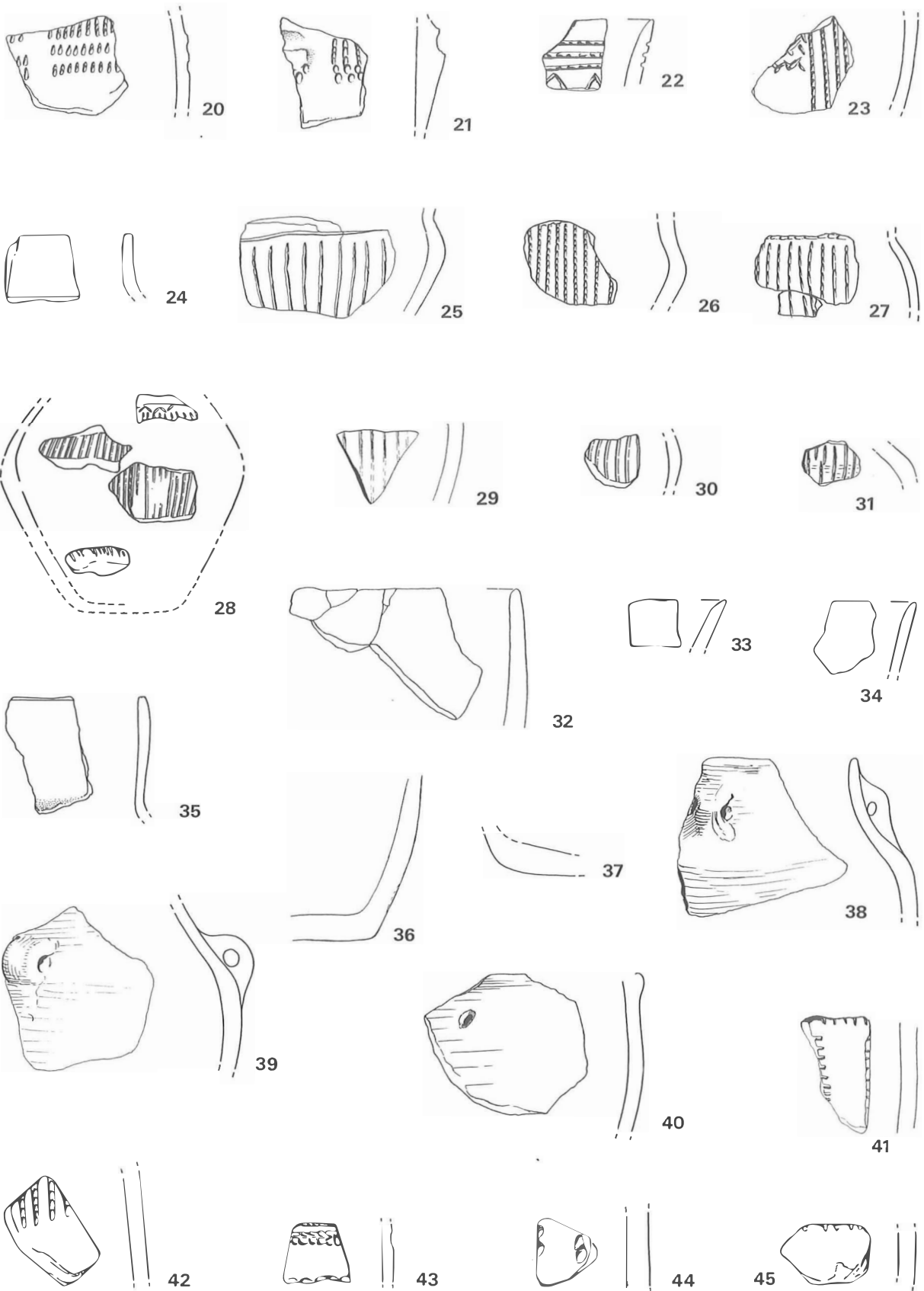


Fig. 7b.

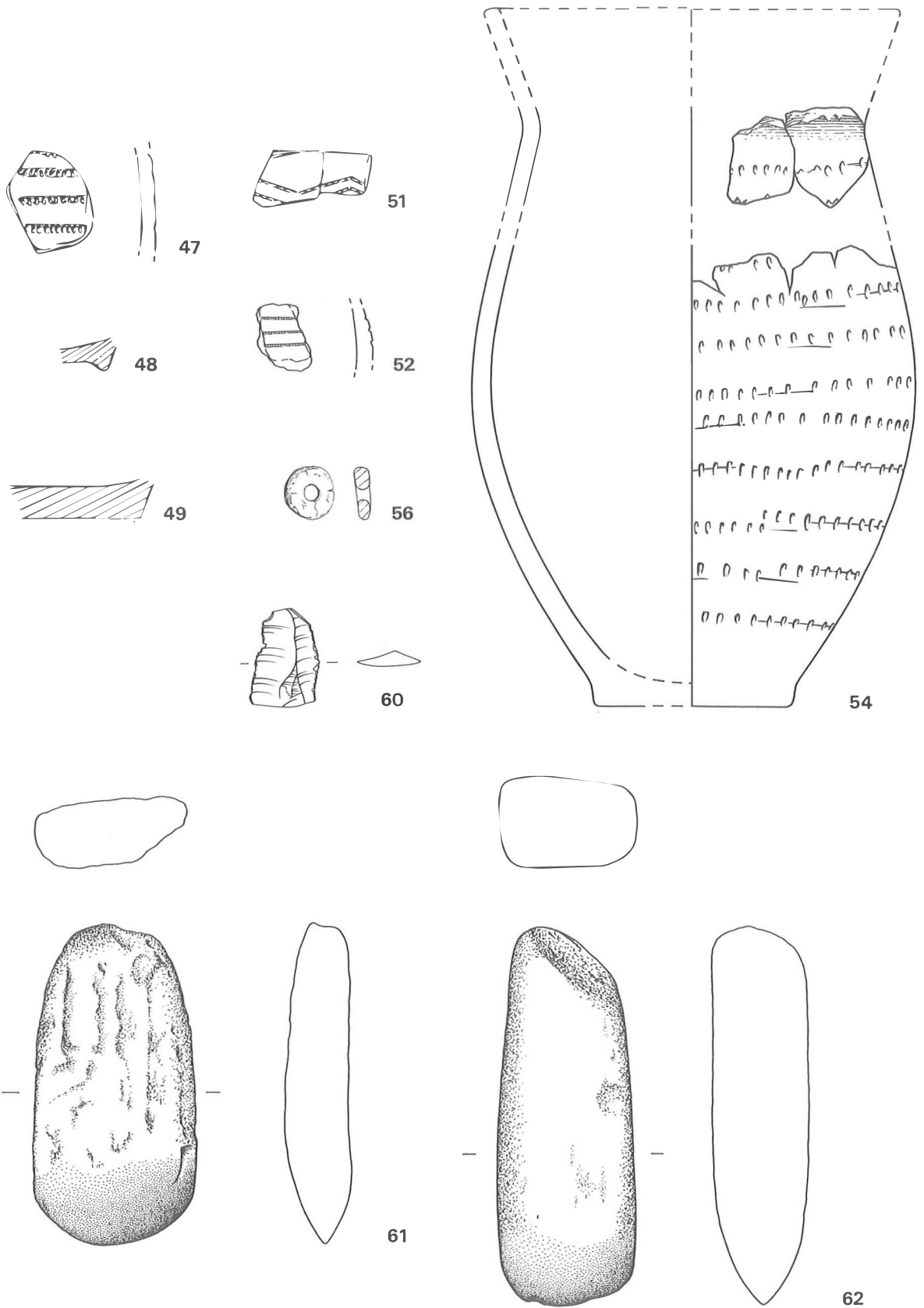


Fig. 7c.

the rim but these had apparently disappeared by the 1940's. The Kat-van Hulten drawings with some corrections and additional drawings are used in this publication.

Probably as a result of the very thorough demolition of the burial chamber which apparently involved the use of explosives, the majority of the sherds are small and in most cases each vessel is represented by a single sherd. The two notable exceptions are the bowl No. 1 and the Barbed Wire beaker (No. 54), both of which were found in undisturbed ground.

2.5.2. Dating the construction and use of the chamber

The majority of the finds belongs to the TRB use of the monument. Later material is represented by sherds of two or three beakers (Nos 52-54) and a post-medieval vessel (No. 55). It is unclear to what extent the surviving assemblage represents the original contents of the burial chamber. A *hunebed* with 7 pairs of side stones could have contained a relatively large assemblage of 300-400 vessels (or more), considerably in excess of the number of sherds actually found at O1. The surviving identifiable vessels must form a relatively small proportion of the original contents, probably from a relatively restricted part of the chamber (the western part). Excluding the typologically insensitive material (funnel beakers, undecorated bowls and non-specific sherds), the following horizons (Brindley, 1986b) are represented:

Horizon 3: 7 pails and lugged bowls, 1 tureen (Nos 1-7 (possibly 8), 18);

Horizon 4: 4 bowls, 1 tureen (Nos 9-12, 19);

(Horizons 3 and 4: funnel beakers (Nos 25-36);

Horizon 5: 1 bowl, 4 tureen-amphorae, and one other vessel (Nos 13, 20-23, 14);

Horizon 6: 1 possible bowl (No. 15);

Horizon 7: 1 possible shouldered bowl (No. 24).

This suggests that the chamber was used chiefly during Horizon 3 and early Horizon 4, and during Horizon 5 but possibly not on a continuous basis. Discontinuous activity at *hunebedden* is not uncommon (e.g. G2 (Brindley, 1986a) appears to have been avoided during H6 and G1 (Bakker, 1982-83) during the latter part of H4, H5 and H6) and it may be that the surviving pottery is reflective if not wholly representative of the original pattern of use. As regards the date of construction of the tomb, the position of the large bowl No. 1 in the makeup of the original mound, whatever the precise details of its deposition, indicates that the mound cannot have been raised later than Horizon 3. The style of the bowl is similar to pails and bowls Nos 2-4, which are likely to represent the earliest material in the burial chamber.

Single vessels or very small numbers of sherds of beaker pottery are found quite frequently in *hunebedden* (i.e. Bell beaker at D9, D30, D40, G2, D54b/c; Single

Grave pottery has been found at D9, D30, D32a, D54b/c, G5 etc.).

Conclusion: O1 was built no later than Horizon 3.

2.5.3. Catalogue of finds

In the catalogues the following terminology is used:

Complete: complete section of profile.

Almost complete: indication of base or rim, but actual feature missing

Incomplete: not reconstructible

Fragmentary: identification of type of vessel is evident

Restored: the pot has been conserved and the restoration covers some of the individual pottery and makes an independent assessment of the reconstruction impossible

H+number: Horizon assignment.

TRB pottery:

1. Bowl. Incomplete. Rim and body sherds of very large bowl with horizontally perforated lugs. *Tiefstich*. Upper zone. band of verticals with stacked 'M' motif over lugs. Horizontal line divides upper and lower zone. Lower zone with defined panels of vertical lines and possibly 'M' motif under lugs. H3;

2. Pail/bowl. Fragmentary. *Tiefstich*. 1 rim sherd, zigzag under rim, verticals below. H3;

3. Pail/bowl. Fragmentary. *Tiefstich*. 1 rim sherd. two small zigzags below rim, verticals below. H3;

4. Pail/bowl. Fragmentary. *Tiefstich*. 1 rim sherd, two small zigzags below rim, verticals. Horizontal line at base of upper zone. H3;

5. Pail/bowl. Fragmentary. *Tiefstich*. 1 rim sherd, 3 horizontal lines below rim, verticals and another element (?M over lug?). H3;

6. Pail. Fragmentary. *Tiefstich*. 1 body and lug sherd. 'M' motif on lug. Lower zone of defined panels with 'M' motif under lug. H3;

7. Pail/bowl. Fragmentary. *Tiefstich*. 1 body sherd, horizontal line separating upper zone and lower zone with verticals. H3;

8. Pail/bowl. Fragmentary. *Tiefstich*. 1 lower body sherd, showing verticals in panels. H3;

9. Pail/bowl. Fragmentary. *Tiefstich*. 1 body sherd with panels of chevron/'M' motif defined by three verticals, and separated by at least two small zigzag lines at the top of open spaces. H3;

10. Bowl. Fragmentary. *Tvaerstik*. Neck sherd of probable bowl (no indication of shoulder), with horizontal lines under the rim, narrow empty zone and blocks of at least two lines below. H4;

11. Bowl. Fragmentary. *Tvaerstik*. 1 body sherd, horizontal chevron (technique, opposed oblique, pointed impressions superimposed on parallel grooved lines, see D40, pot No. 11 for comment) with spaced groups of vertical *tvaerstik*. H4;

12. Bowl. Fragmentary. *Tvaerstik*. 1 rim sherd, narrow blocks of horizontal lines. H4;

13. Bowl. Fragmentary. *Tiefstich*. 1 upper body sherd. Min. 4 horizontal lines below rim, two lines small zigzag. H5;

14. Bowl or tureen rim. Fragmentary. 1 rim sherd. *Tiefstich*. Min. 3 lines under rim. Position of lines and use of pointed *Tiefstich* suggest H5;

15. Fragmentary. 1 rim sherd of open shallow dish with some decoration. ?H6/H7;

16. Bowl. Large fragment of largish, open bowl with fairly straight sides;

17. Bowl. Rim of undecorated, slightly globular bowl;

18. Tureen. Fragmentary. 2 sherds: shoulder sherd with min. 4 concentric lines very small zigzags on shoulder and fifth line below shoulder; second very small sherd has grooved lines. H3?;

19. Tureen. Fragmentary. *Tiefstich*. 1 neck sherd. irregular small tight zigzag lines under rim, interrupted by inverted 'V' motif, stacked 'M' motif above horizontal line at base of neck. Late H3?;

20. Tureen-amphora. Fragmentary. *Tiefstich*. 1 body sherd, groups of vertical lines terminating in double line of small stabs (tear motif). H5;

21. Tureen-amphora. Fragmentary. *Tiefstich*. 1 shoulder sherd close to horizontally perforated lug, short band of verticals terminating in bone impressions. H5;

22. Tureen-amphora or possibly small bowl. Fragmentary. *Tiefstich*. 1 rim sherd, 3 lines below rim, line of zigzag. H5;

23. Amphora type 2. Fragmentary. *Tiefstich*. 1 shoulder sherd with alternating groups of vertical lines and small zigzag. H5;

24. Shouldered bowl? Fragmentary. 1 small rim sherd. H7;

25. Funnel beaker. Fragmentary. 1 body sherd with high, fairly angular shoulder, horizontal line at base of neck and vertical *Tiefstich* on body;

26. Funnel beaker. Fragmentary. 1 body sherd with fairly angular shoulder and *Tiefstich* on body;

27. Funnel beaker. Fragmentary. 2 body sherds, rounded body, probably line at base of neck. *Tiefstich* on body;

29. Funnel beaker. Fragmentary. 1 body sherd with *Tiefstich* on body;

31. Funnel beaker. Fragmentary. 1 body sherd with *Tiefstich* on body;

28. Funnel beaker. Fragmentary. 4 small body sherds. Zigzag at base of neck and finely grooved lines on body;

30. Funnel beaker. Fragmentary. 1 body sherd. Finely grooved lines;

32. Funnel beaker. Incomplete. Rim and neck, undecorated;

33. Funnel beaker. Small fragment;

34. Funnel beaker. Small fragment;

35. Funnel beaker? Rim and neck fragment;

36. Funnel beaker. Incomplete. Base and part of side wall, undecorated;

37. Funnel beaker. Fragmentary. Small base;

38. Lugged vase. Incomplete. 1 large piece. Undecorated small vase with applied horizontally perforated lugs on the neck and a semi-angular shoulder. H5/6;

39. Lugged vessel. Incomplete. 1 shoulder sherd with lug. Undecorated. Horizontally perforated applied lug on semi-angular shoulder. H5/6;

40. Lugged vessel. Incomplete. 1 body sherd with small lug. Undecorated bowl with small horizontal unperforated and probably pinched up lug. Post firing perforation. ?H6/H7;

Miscellaneous:

41. Fragmentary. *Tvaerstik*. 1 body sherd, horizontal line above spaced verticals. H4;

42. Fragmentary. *Tiefstich*. 1 lower body sherd, vertical lines;

43. Fragmentary. *Tvaerstik*. 1 body sherd, possibly neck of tureen, horizontal lines with an empty band;

44. Fragmentary. *Tiefstich*. 1 body sherd, vertical lines, possibly pail;

45. Fragmentary. 1 body sherd, probably base of horizontal *Tiefstich* decoration;

46. Fragmentary. 1 very small coarse sherd with *Tiefstich*;

47. Fragmentary. 1 body sherd with horizontal *tvaerstik*. Probably bowl with lugs;

48. Base. Small portion of base with undecorated foot ring;

49. Base. Portion of flat base;

50. Sixty-three featureless body sherds;

51. Sherd shown in publication but no longer present and not included in inventory of B.A.I. stores. 2 lines shallow zigzag below rim of funnel beaker.

Non-TRB pottery:

52. Beaker. One featureless body sherd from largish, apparently undecorated vessel;

53. One sherd of a Bell beaker marked with the year and month of the De Eese excavation. However, the distinctive elements on the sherds (two shallow grooved lines and a line of horizontal finger nail impressions bordering an empty zone) indicate without doubt that this sherd (and possibly also No. 52) comes in fact from Havelte D53.

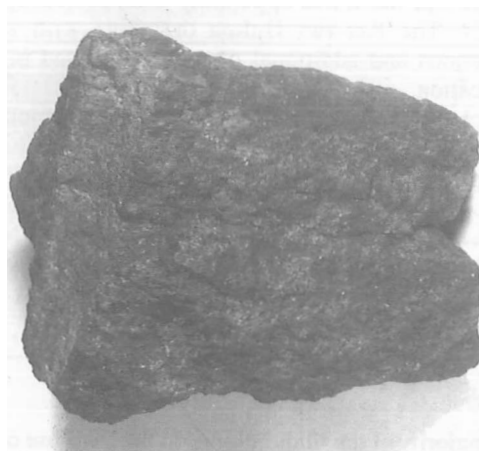


Fig. 8. Fragment of granite boulder with cylindrical bore hole, found in 1918. This shows that the boulders at O1 were blasted with black powder. Photograph: C.F.D. Scale 3:5.

54. Almost complete. 1 medium sized Barbed Wire beaker.

55. 10 sherds soft reddish fabric, glazed. At least two wheel thrown pots, probably *grapes*, are present. Of red fabric, with brownish-greenish glaze on the inner surface only. Most likely of late 18th – or early 19th century date.

Other finds:

56. Disc-shaped amber bead with central perforation;

57. Flint flake, ending in hinge fracture. No traces of working;

58. Irregular-shaped flake of flint with traces of cortex;

59. Flake from polished flint axe, no traces of working;

60. Distal end of blade of grey, transparent flint. Use retouch along edges. Found with large bowl (No. 1) in 1985;

61. A axe of fine crystalline stone (unidentified). Apparently made from piece of stone that had an axe-like shape, although the sides may have been shaped artificially. Only the cutting edge shows polishing;

62. A axe of fine crystalline stone (unidentified). Regular shape, but top broken obliquely. In side view, widest near top;

63. Fragment of granite with part of cylindrical bore hole for explosive powder. This indicates that at least one stone of O1 must have been blasted to pieces using black powder (fig. 8).

3. HUNEBED D40

3.1. The 1918 excavation

After van Giffen had investigated the destroyed *hunebed* O1 and seven burial mounds at De Eese, and subsequently the large *hunebed* of D53 and a small group of pyre mounds near Havelte, he excavated the small *hunebed* of D40 with its mound, on the Emmerveld (now Valtherbos), *gemeente* Emmen (fig. 1).

It is possible to reconstruct the sequence of events during the excavations to a large extent, using the field drawings and photographs. It is even possible to make some corrections to the location of the profiles as published. It appears that the profiles E and G lay 1 m further east than is indicated. The excavation began with the preparation of a contour plan of the mound and

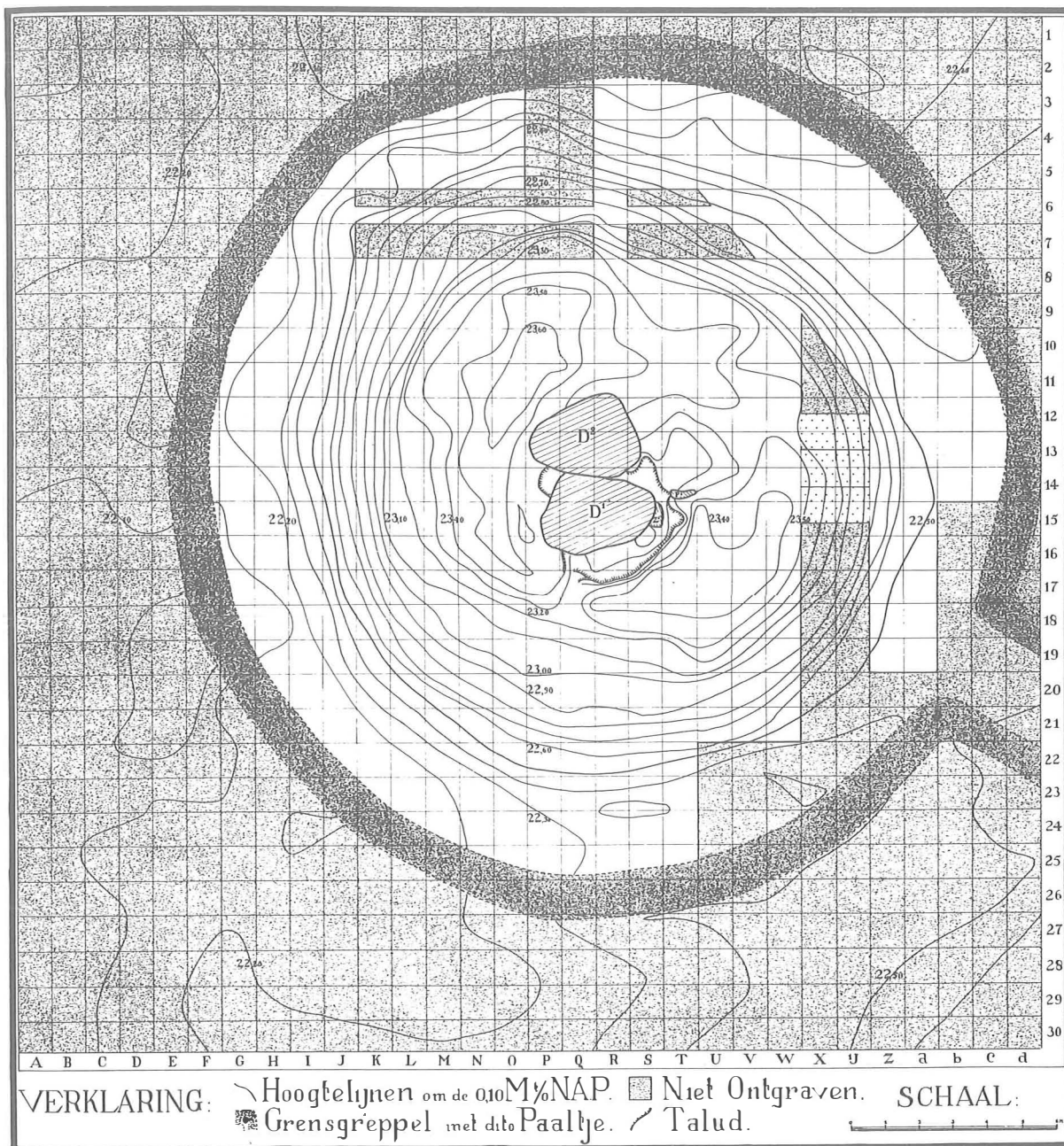


Fig. 9. Contour plan of hunebed D40 and surrounding area, after van Giffen (1925/27, Atlas: Pl. 127).

its immediate vicinity (fig. 9). Following this, two trenches were dug through the mound; a 1 m wide north-south trench which apparently was dug immediately down to undisturbed subsoil and which joined S12 in squares R2-11, and an east-west trench in front of the entrance to the chamber. This trench was initially 3 m wide but was reduced in width to 1 m about 0.5 m below the surface of the mound. At a depth of 0.75 m excavation was stopped although the subsoil had not yet been reached. The north-south trench is particularly poorly

documented; not even the profiles were drawn. It is possible that it was excavated earlier in the year to establish the potential of the site.

The mound was excavated in stages (fig. 10), beginning with the excavation by layer of the parts of squares O-T/10-17 which lay outside the chamber. Apparently van Giffen only realized after some time that he was digging away valuable data in the form of profiles which joined up with the chamber (van Giffen, 1925/27, II: p. 181). At this stage, it was still possible to

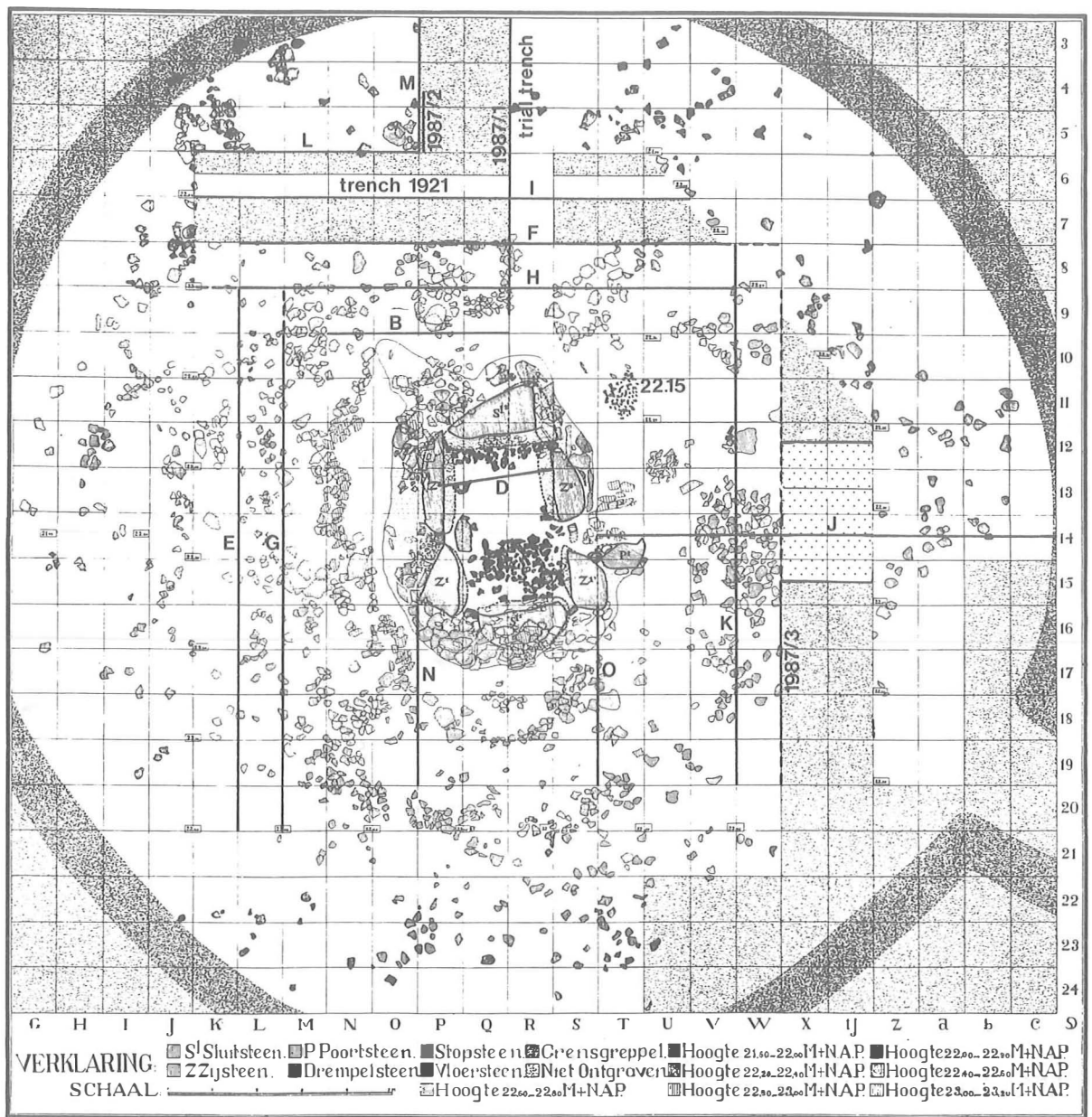


Fig. 10. Plan of the excavated area surrounding D40, after van Giffen (1925/27. Atlas: Pl. 129, with minor changes). The location of the profiles of 1918, 1921 and 1987 through the mound are indicated.

rectify this in part by drawing the profiles N, O and J. The gradual extension of the cutting made it possible to draw two parallel profiles (G and E) on the west side, three (B, H and F) on the north side, and two on the east side (K and the profile drawn only in outline between the squares W and X/15-19).

Following this, the edge of the mound was investigated, leaving on the north side a T-shaped piece of mound of which the profiles L and M were drawn, on the east side a broad baulk of which the profile on the

west side was drawn only in outline, and on the southeast side several small pieces of the edge of the mound. A large number of field stones were found both in and under the mound. These were very carefully recorded in three dimensions (fig. 10). According to van Giffen these stones lay more-or-less concentric to the chamber on a slope, forming a sort of capping. In places, mainly on the northwest side of the mound, van Giffen came across fragments of stone in and on the podsolized soil of the mound. He interpreted this as an artificial surface

deliberately laid as a path along which the capstones had been dragged.

Van Giffen claimed to have recognized two phases during which the mound was raised, on the first of which rested the stone capping and on the second, the 'path'. Both episodes should date therefore to the construction of the *hunebed*. The northwest side was subsequently raised again. Van Giffen did not exclude completely the possibility that this was a result of drifting sand.

There was a surprising number of finds, chiefly sherds of TRB pottery and flint but also sherds of a late Bell beaker in the body of the mound in ground which had not recently been disturbed. A large proportion of this material lay southeast of the entrance to the burial chamber, in squares V15-17, under the stone capping according to van Giffen (1925/27, II: p. 201).

The burial chamber was similarly investigated. Unexpectedly, the filling of the chamber consisted largely of recently silted in material. The floor was destroyed in places. The number of finds in the chamber was, not surprisingly, small. A large stone (1.0x0.85x0.4 m) was found in the modern filling which van Giffen identified as the missing portal stone P2. In other respects, the chamber was intact, although a substantial amount of the drystone infill between the side, end and cap stones was missing.

The chamber is oriented approximately north-south and consists of two pairs of side stones, two end stones and two capstones. Because the southern end stone is much shorter than the adjacent side stones, there is a gap between it and the capstone D1. The entrance lay in the centre of the east side and was originally flanked by two portal stones. The northern portal stone P2 was later removed and was found by van Giffen in the chamber. Apparently van Giffen left the stone there as the position of P2 is indicated now by a concrete marker.

A large portion of the stone packing was still intact around the chamber, although in places stones had been removed. The chamber and stone packing stood in a more-or-less oval foundation pit of 6.5x4.5 m. Undisturbed subsoil under the chamber lay about 0.30 m below the level of the old ground surface. According to van Giffen, the side and end stones stood in a trench which was 0.7 m deep.

3.2. Supplementary excavation in 1921

Apparently during the writing up of the excavation van Giffen ran into a problem relating to the construction of the mound. Therefore in 1921 it was decided to carry out a supplementary excavation. A trench was dug in the cross baulk of the T-shaped piece of the mound, of which profile I was drawn (fig. 10). It is not clear why van Giffen wanted to see a 'new' profile and did not just re-open one of the sections which he had already drawn.

3.3. The re-excavation of 1987

The discovery of what was apparently part of the original chamber contents in the mound and beneath the concentric stone capping clearly indicates that van Giffen's dating of the phases of construction of the mound cannot be correct. The chamber contents included sherds of a late Bell beaker. The clearing out of the chamber cannot therefore have taken place earlier than during the Late Neolithic. The stone capping can only have been laid down after that had taken place and subsequently the second heightening, on top of which lay the 'path' along which the capstones were supposed to have been dragged. Only van Giffen's first phase, the mound under the stone capping, can be the *hunebed*'s original mound. The other heightenings and, therefore, also the 'path' are clearly later.

In order to test this, it was decided to carry out a small re-excavation. This took place in October 1987. Three profiles were re-opened, namely a 8.5 m long piece of the western profile of van Giffen's north-south oriented trial cutting (profile 1987/1), a c. 1 m long piece of profile M (1987/2) and a 3.5 m long part of the profile which had only been drawn in outline, on the edge of squares W and X (1987/3). These profiles were drawn and photographed and soil samples for pollen analysis collected. Samples for dating purposes were not found.

The re-excavation showed that the mound had been constructed in three clearly recognizable phases, separated by well-developed soil horizons. A soil horizon is also clearly visible under the mound. Furthermore, it appears that the stones in the mound did not lie on the slope of the primary mound, but on the slopes of periods 1 and 2. An analysis of the original three dimensional records had already shown that the stones lay at different levels.

The height NAP was not remeasured in 1987. The levels were taken relative to the top of the portal stone P1 whose height in metres NAP had already been established in 1918. There are strong indications, however, that the levels of 1918 are about 1 metre too high.

3.4. The construction of the mound on the basis of the evidence from 1918, 1921 and 1987 (fig. 11)

It appeared in 1987 that the old ground surface below the primary mound was clearly visible in profiles 1987/1 and 1987/3 as a 0.10 m thick light grey coloured layer, with some local secondary infiltration veins. Van Giffen's observation that the old ground surface had been desodded because no humic layer was visible is therefore incorrect (van Giffen, 1925/27, II: p. 179). The old ground surface was not recognizable in profile 1987/2 because it lay too near the edge of the mound. This old ground surface was observed and drawn in 1918 in profile B, just north of the chamber, as a thin grey layer. In profiles H, squares O-V, and K, squares 15-19, it was drawn as the lowest, thick band of

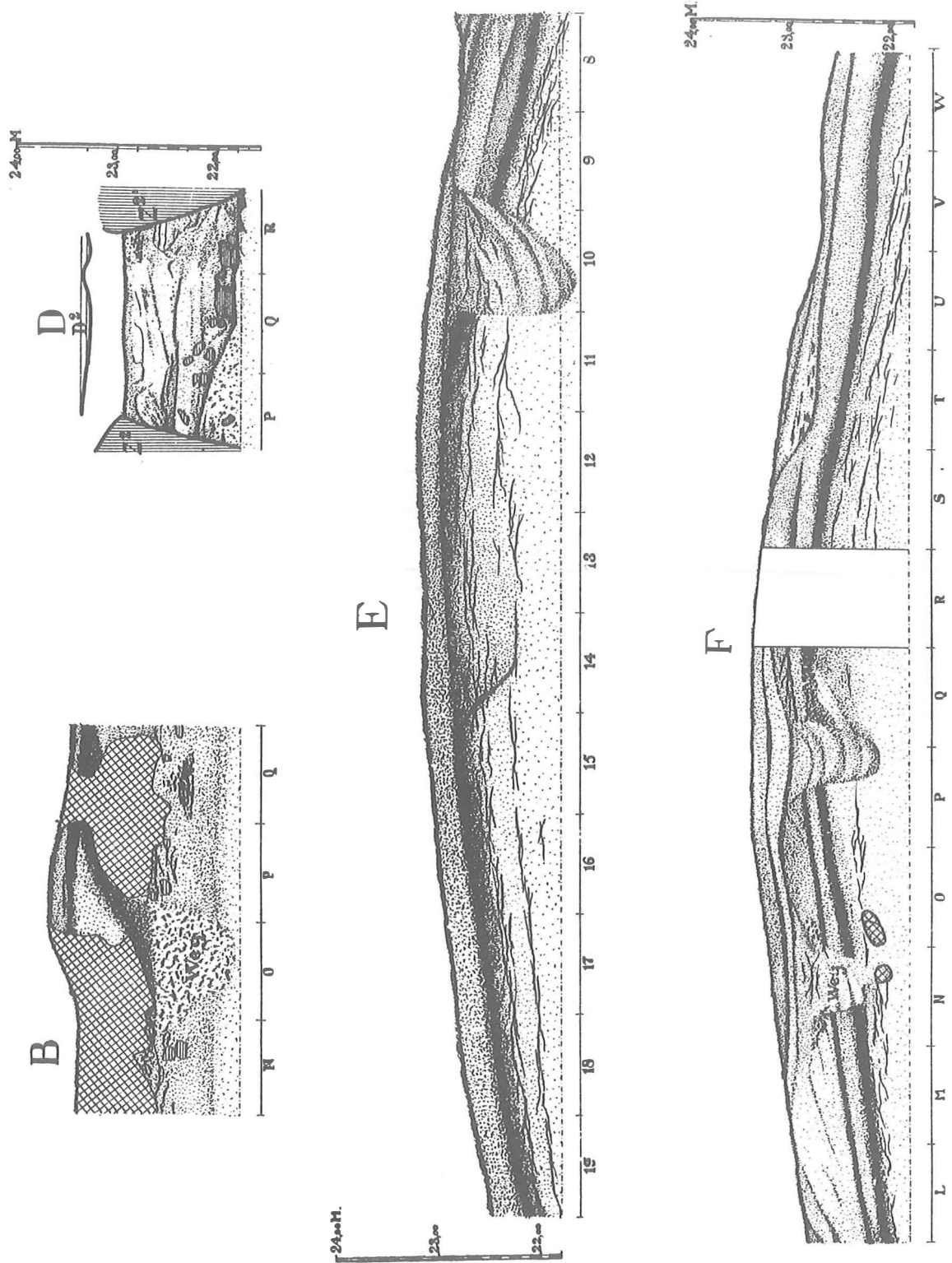


Fig. 11a-d. The 1918, 1921 (after van Giffen, 1925/27, Atlas: Pl. 130) and 1987 profiles through the mound of D40.

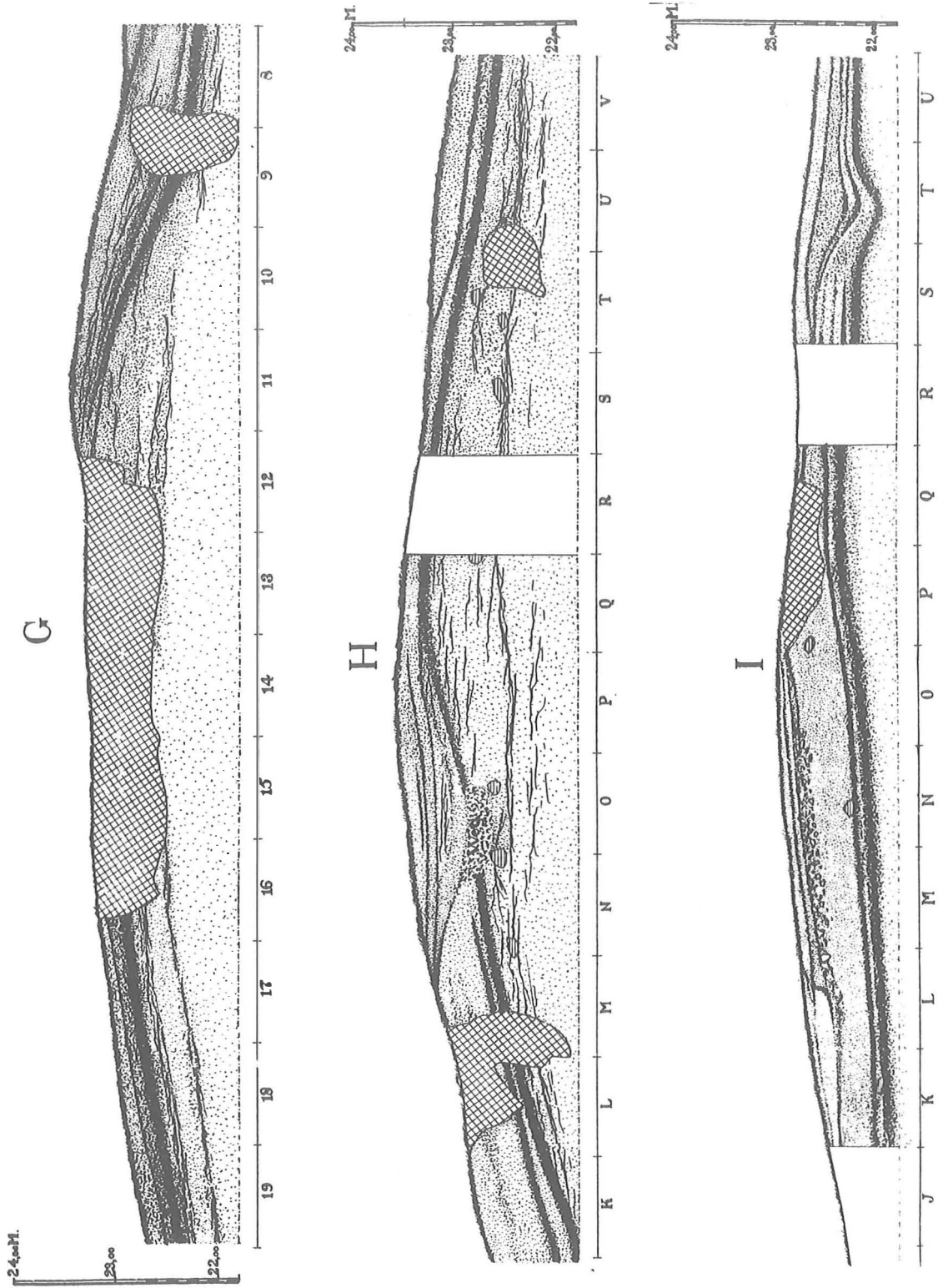


Fig. 11b.

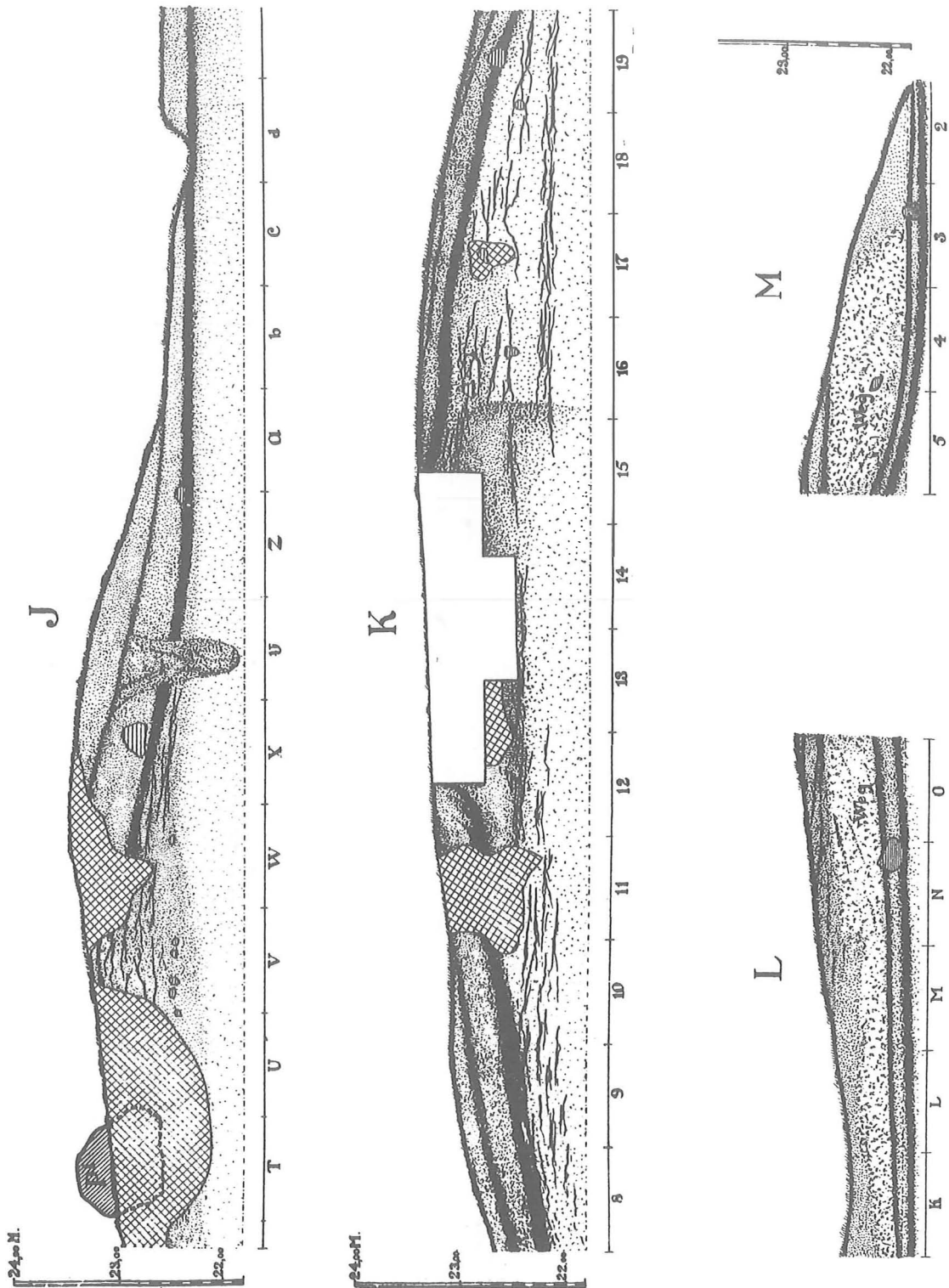


Fig. 11c.

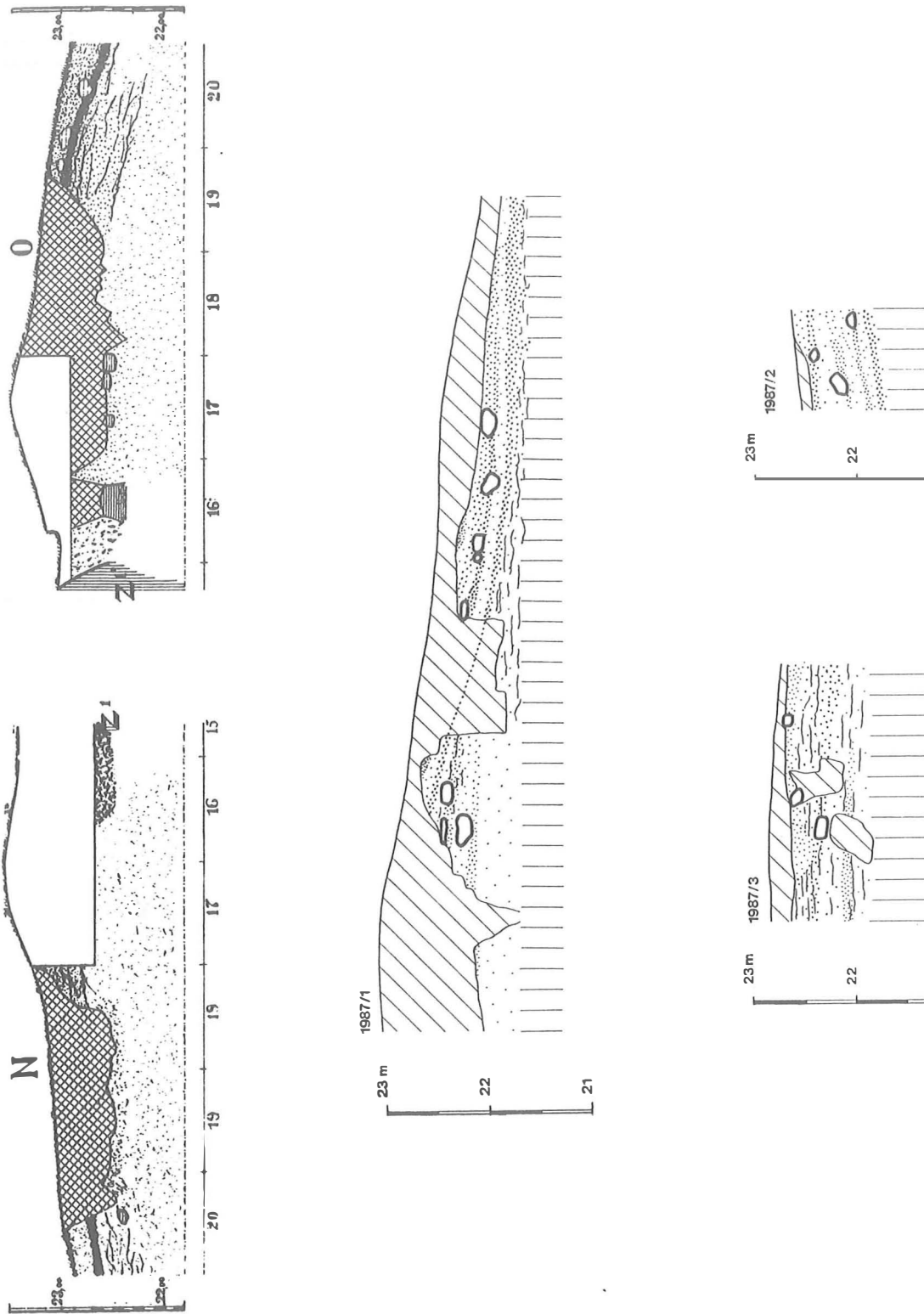


Fig. 11d.

infiltration veins. The old ground surface under the mound occurred at c. 22.20 m +NAP.

The primary mound was constructed of yellow sand. In its upper part a clear soil development was present in the form of a dark grey humus layer, c. 0.15 m thick and with locally strongly developed veins. This soil is also visible in places in the 1918 profiles, for example in the profiles E, G, and F as the lowest, curved band of infiltration veins, in the profiles H and K as the lowest but one of the bands of infiltration veins and in profile B as the thin band of infiltration veins halfway up. Large and small stones occur scattered in and over this soil horizon.

Although the primary mound was only well documented in a couple of profiles, the dimensions and height can still be extrapolated. The mound extended to about 6 m outside the north and south sides of the chamber and therefore had a diameter of about 15 m. The mound may have been slightly oval (oriented north-south) and was 0.6 m high at the time that topsoil formed on its surface. It therefore did not reach the tops of the side and end stones, which stood about 1 m above the old ground surface (with the exception of S11). The fact that the top of the mound reached only c. 22.80 m+ appears to contradict the maximum height of 22.95 m+ given by van Giffen (1925/27, II: p. 178) for the stone packing around the chamber. After some checking, it was established that this level related to loose stones above the stone packing. The in situ stone packing did not extend above c. 22.75 m+.

As a corollary one must ask whether the small primary mound consisted of more than the sand which originated from the digging of the foundation pit.

The volume of the mound can be established without much difficulty as 30 to 35 m³. The contents of the foundation pit must have had a maximum volume of 15 m³ based on the dimensions given by van Giffen (see above). A large part of the mound's soil must therefore have been obtained from elsewhere.

The period 2 mound was made up of brownish sand, and was strongly veined. It had a well developed soil on its upper surface with a thin black humus layer, thick grey leached horizon and a thin brown horizon. It is easily recognizable in the 1918 and 1921 profiles. The edge of the mound is only visible in these profiles on the north side. On the south side, where the mound had not been raised further, the contour map can be used to establish the position of the edge of the period 2 mound. The period 2 mound appears to have had a diameter of about 19 m at the time of consolidation. By extrapolation, the mound at that time had a height of c. 1.5 m, through which only the tops of the capstones may have protruded.

The period 3 mound is eccentric to the periods 1 and 2 mound, and is limited more-or-less to the northwest side of the mound. This restricted heightening is visible on the contour plan (fig. 9). The profile 1987/2 shows that the mound consisted of yellow-grey sand with flecks of humus and above, yellow sand. On its upper

surface a narrow grey leached horizon and a brown infiltration layer had developed. Van Giffen had seen the same soil horizon in 1921 in profile I. Large field stones were found in various places in the period 3 mound. This eliminates the suggestion that this was a natural raising formed of blown sand as van Giffen (1925/27, II: p. 189) thought possible. It must have been added artificially. In the upper surface of the period 3 mound are the stones and stone fragments which according to van Giffen belonged to the cobbled track along which the capstones had been dragged.

3.5. The finds (fig. 12)

3.5.1. *The distribution of the finds and the dating of the phases*

Van Giffen established that the chamber was for the most part filled with recently deposited/silted sand, and that the floor had been partially destroyed. Only where the floor was still intact were some of the original contents of the chamber present. The remainder apparently lay in and under the mound, where, above all in squares V16/17, artefacts were recovered. These occurred quite deep down, just above the old ground surface. Together with the finds in these squares were also the sherds of a late Bell beaker. It appears that a large part of the chamber contents were deposited in a pit at the edge of the primary mound, in squares V16/17. The depth at which other sherds were found suggests very strongly that they lay on the slope of this mound. The good condition of all the sherds also suggests that they were covered over immediately by the period 2 mound. It is likely that a clearing of the chamber took place before its re-use and the associated raising of the mound. Because of the presence of the Bell beaker sherds, this must have taken place at the earliest at the end of the Neolithic, or more probably in the Early Bronze Age or the beginning of the Middle Bronze Age. Much later is not likely because of the absence of a podsol profile under the period 2 mound.

In addition to the chamber contents there appear to have been several separate deposits in the primary mound. Outside the chamber, behind end stone S11 and in the stony backfill, portion of a funnel beaker (No. 25) was found. It seems likely that this became incorporated in the backfill during the construction of the chamber rather than being deposited as a formal offering. About two metres north of the same end stone, and within the primary mound, the complete lower half of a funnel beaker (No. 30) was found. It is possible that the neck was inadvertently dug away during the 1918 excavations. No trace of a pit was recorded but stones are noted in the finds book. About two metres northwest of the same end stone, a shouldered bowl (No. 38) was found within the primary mound. Again, no pit was recognized.

The date of the period 3 mound is very unclear, it may belong to the Iron Age.

3.5.2. Dating the construction and use of the chamber

The finds consist of a small collection of pottery and three pieces of flint. 680 sherds of pottery were found during van Giffen's excavations but only a small number of these was discovered in the chamber. The majority were found in two locations, in a pit at the foot of the first period mound (find numbers 25-28) and in a patch of recently disturbed ground just outside the entrance (find number 21). In some cases, large portions of individual pots were recovered intact or more-or-less so. Some of the sherds are also large but the majority are medium to small in size. The vast majority of the pottery, representing about 60 vessels, belongs to the TRB family. Sherds of a *Wellenband* pot, a potbeaker, and an almost complete Bell beaker are also present. A complete *Kümmerkeramik* pot clearly marked 'Emmen' and with the year and month of the excavation has also been discovered in the collections of the B.A.I. Its relationship to the excavation is, however, unclear. Sub-recent material is represented by one sherd of glazed 16th/17th-century fabric and a spindle whorl of the same date. The apparent absence of small items such as arrowheads and amber beads may be due to the fact that sieves were not employed during the excavation.

TRB pottery

The TRB assemblage consists of an estimated original total of 60-80 pots. This figure is based on the number of reconstructible pots (thirty-eight) and the number of decorated sherds (fifteen) plus a notional twenty for undecorated and featureless vessels. With a few exceptions, the pots are represented by small numbers of sherds. Complete profiles of only two pots (Nos 2 and 25) are preserved although others are reconstructible. However, because of the regularity of the ornament, the reconstruction of the full decorative scheme is possible in many cases. All the TRB pottery can be identified to a single horizon, Horizon 3. The pottery without diagnostic features (the funnel beakers) can also be accommodated within this horizon. The assemblage consists of six pails (Nos 1-6), seven bowls (Nos 7-12, 42) plus lugs of two others (Nos 41B and C), six tureens (Nos 13-18) plus the lug of another arguably shouldered pot (No. 41A), and nineteen funnel beakers (Nos 19-37). There are also sherds of a weakly shouldered bowl (No. 38). The fifteen small, decorated but otherwise featureless sherds (No. 39) represent other vessels, probably funnel beakers but possibly other types as well. The assemblage does not appear to have included biberons, collared flasks, baking plates, type I amphorae or, surprisingly, undecorated bowls, all of which can occur in Horizon 3 assemblages.

The finds indicate that the tomb was built and used exclusively while pottery of Horizon 3 was in use. Aspects of the vessels themselves indicate that the tomb was constructed at the beginning of this horizon and continued in use throughout its duration. Most of the

parallels suggested for the small tureen No. 13 appear to belong to late Horizon 2 or early Horizon 3 contexts. The bowls Nos 9 and 12 and tureen No. 15 have elements which suggest the end of Horizon 3.

Conclusion: D40 was constructed at the beginning of Horizon 3 and remained in use for a period estimated as lasting about 100 years between 3300 and 3200 cal BC. It was not subsequently re-used during TRB times.

Non-TRB pottery

Finds of Bell beakers and other Late Neolithic/Early Bronze Age pottery, either complete or represented by small numbers of sherds are relatively frequent at *hunebedden*. The Bell beaker appears to have been the last deposit in the burial chamber as its condition (practically complete) and its association with the larger part of the redeposited chamber contents indicates. Sherds of *Wellenband* pottery have been found at a number of *hunebedden*, e.g. Ostenwalde I (Fansa, 1978) and Havelte D53 (van Giffen, 1925/27, Atlas: Pl. 154:72 and 80) as have potbeaker sherds e.g. Bronneger D21/22 (van Giffen, 1925/27, Atlas: Pl. 154:87 and 89) and Annen D9 (de Groot, 1988).

3.5.3. The catalogue

TRB pottery:

1. Pail. Incomplete. *Tiefstich* of three different types. 4 lugs in spaced pairs. Very regular upper and lower zone with defined panels including zippers. H3;

2. Pail. Complete profile. 4 lugs in spaced pairs. Pointed *Tiefstich*. Upper and lower zone and lower zone panels defined by grooved line. 2 horizontal lines immediately below horizontal groove forming horizontal element in lower panels. This last combination is not common but three examples occur at Gross Berssen (Nos. 15, 20 and 144, Schlicht, 1972) and at least one other example (although of not fully continuous lines) occurs at Drouwen D19 (Bakker & Luijten, 1990: pl. 2 d). H3;

3. Pail. Incomplete. Lugged (one present). *Pseudo-tvaerstik*: although *Tiefstich* lines are deeply indented, well-marked guideline is clearly visible. Verticals in upper zone, well-defined panels in lower zone. H3;

4. Pail. Fragmentary. *Tiefstich* and *tvaerstik*. Horizontal lines in lower panels. H3;

5. Pail/bowl. Fragmentary. Upper zone consists of band of verticals bordered by double line of small zigzag. H3;

6. Pail. Incomplete. Lower body consists of panels with horizontal lines, vertical lines and chevron/'M' motif. H3;

7. Lugged bowl. Fragmentary. Lower zone only, apparently consisting of defined panels with vertical lines, hatched strips and chevrons/'M' motif, layout similar to Pail No. 1. H3;

8. Lugged bowl. Fragmentary. Regular, neatly executed ornament. *Tiefstich* and *tvaerstik*. H3;

9. Lugged bowl. Fragmentary. *Tvaerstik*. 3 discontinuous horizontal lines below rim, band of verticals. H3;

10. Lugged bowl. Fragmentary. *Tvaerstik*. Two horizontal lines below rim, verticals below. H3;

11. Lugged bowl. Incomplete. Low, unperforated lugs and decorated footing. Variant of *tvaerstik*, consisting of regularly grooved line with dots superimposed on it. 3 horizontal lines below rim, band of verticals. Horizontal zipper. Lower zone, groups of verticals, 'M' motif below lugs. Bakker & Luijten (1990) have recently drawn attention to this technique and its apparently limited distribution. Other versions of the technique include the use of an obliquely impressed pointed implement (O1, No. 11, above) and a single

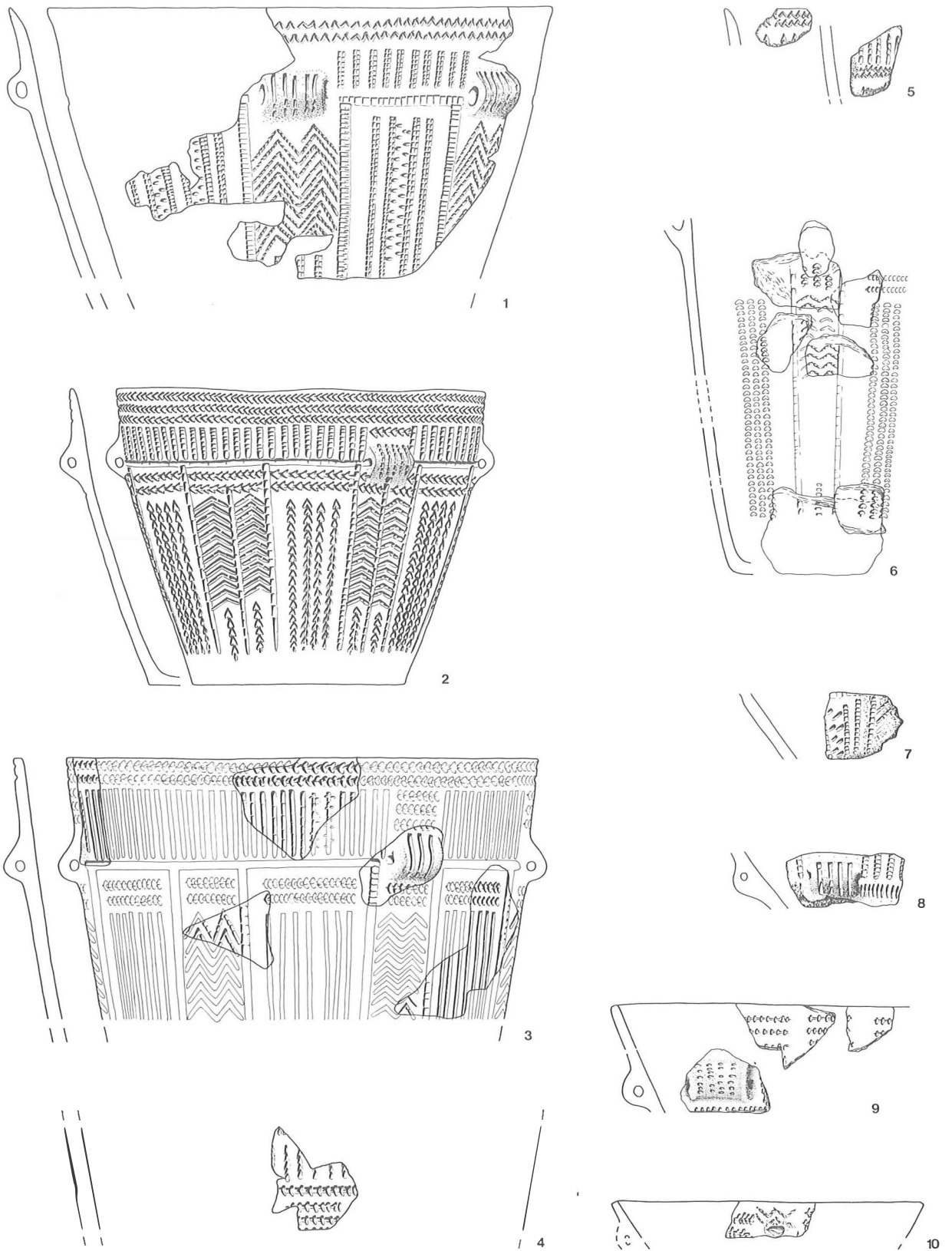


Fig. 12a-e. The finds from D40. Scales: pottery 1:3, other finds 1:2.

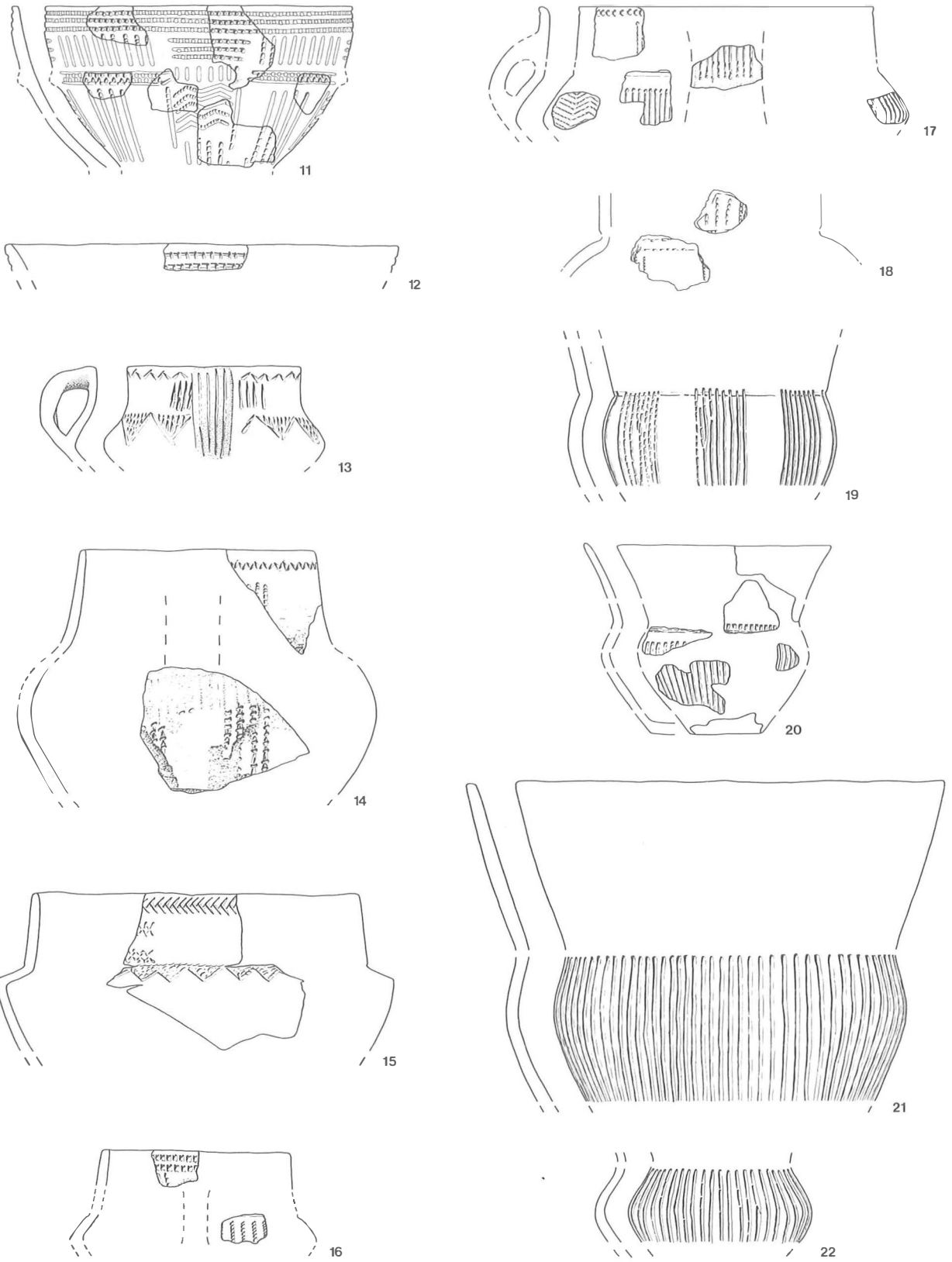


Fig. 12b.

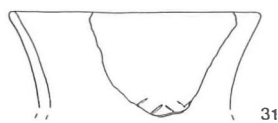
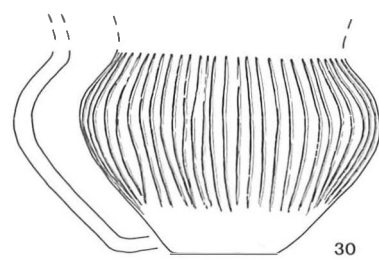
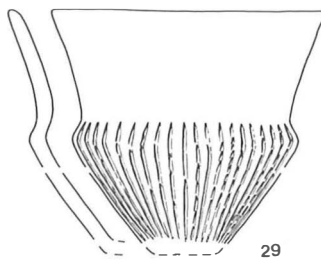
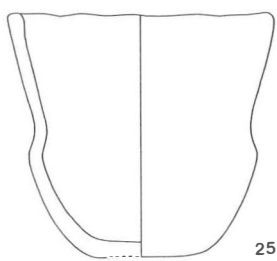
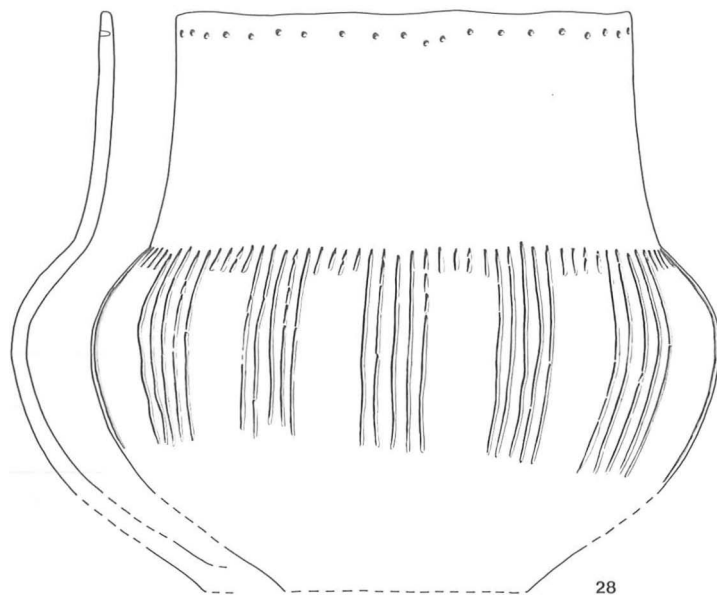
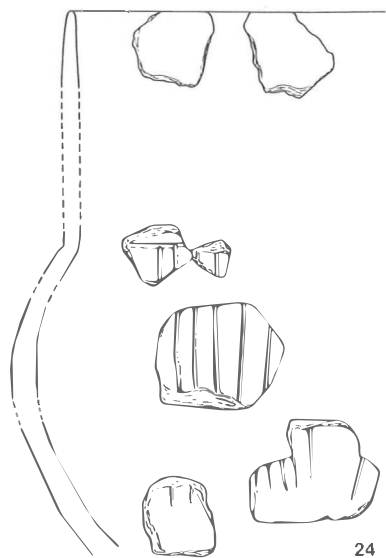
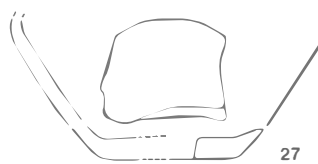
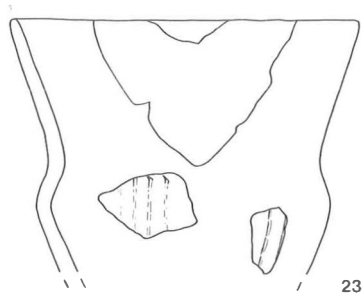


Fig. 12c.

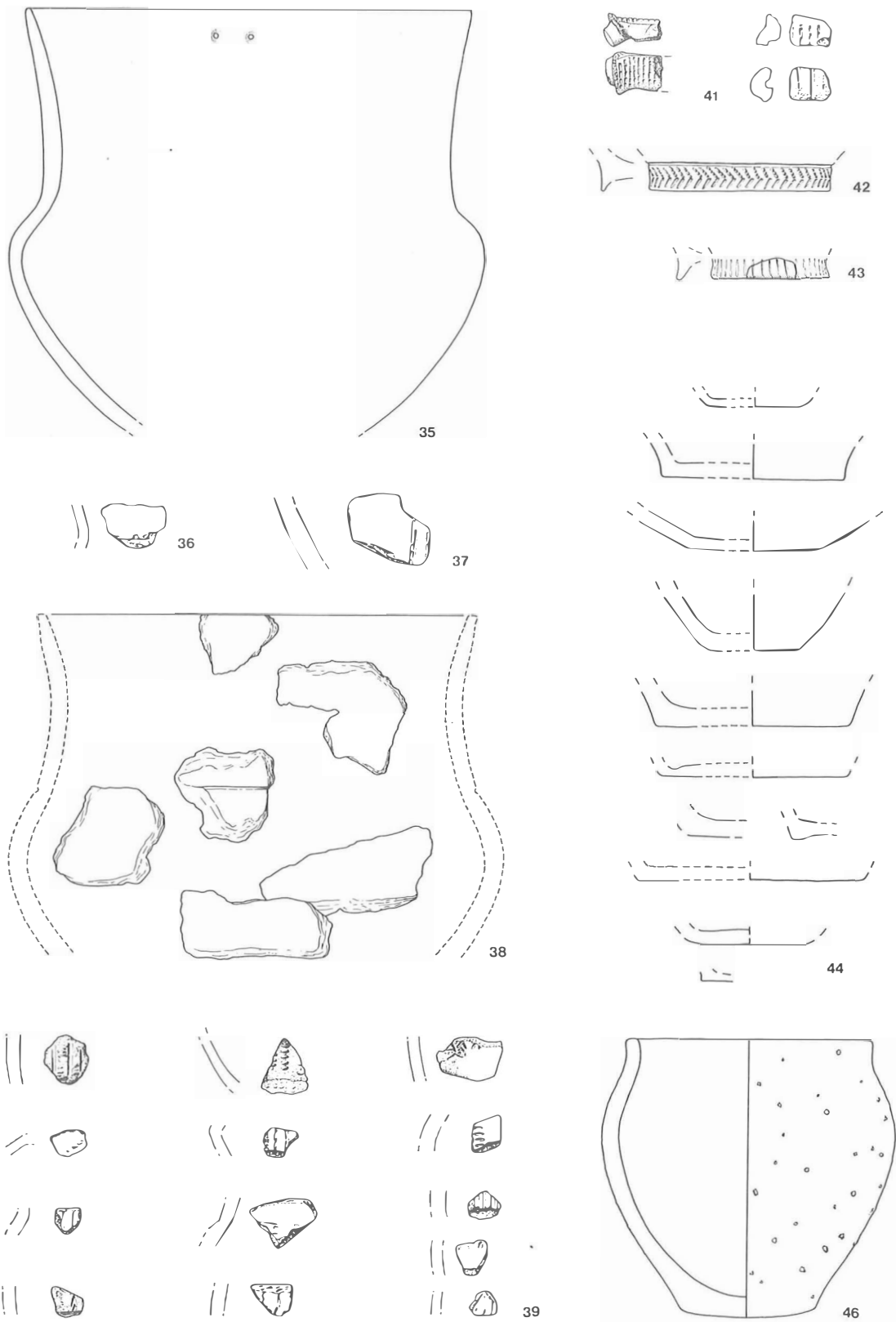


Fig. 12d.

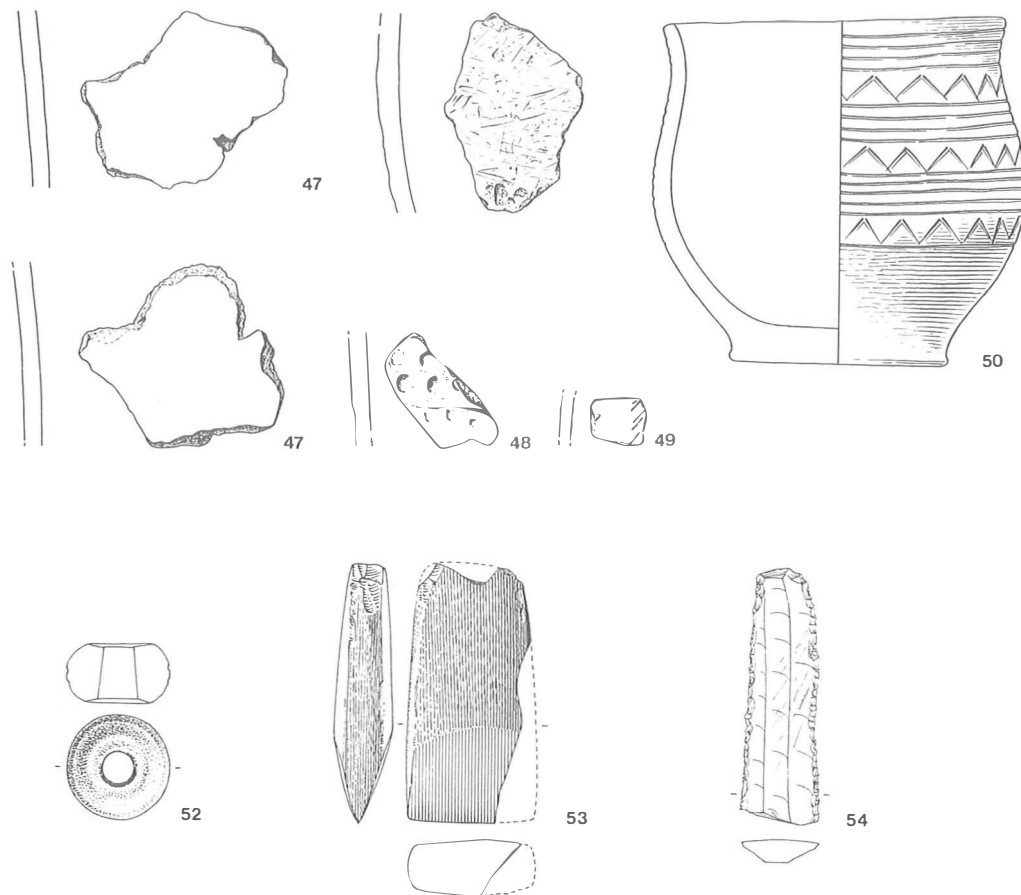


Fig. 12e.

grooved line with the rounded impressions on either side (e.g. Emmeln Nos 166 and 167, Schlicht, 1968; Bronneger, Knöll, 1959: Tafel 15, 14). H3;

12. Bowl. Fragmentary. Horizontal *waer.stik*. H3.

In addition to the above, the decorated footring, No. 42, probably represents a finely decorated bowl, probably of Horizon 3.

13. Tureen. Incomplete. Zigzag below rim, filled triangles on shoulder and vertical incised lines on high, thick handle. True hatched triangles are uncommon on tureens and jugs in this area although they do occur on a small tureen from Tinaarlo which also has a high handle. Parallels for the combination of hatched triangles, high placed handle and small and slightly crude shape become more frequent as one moves eastwards (e.g. Kleinenkneten 1, Knöll, 1959: Tafel 2, 15; Kleinenkneten 2 (filled triangles), Knöll, 1959: Tafel 3, 3; Kleinenkneten, Fansa, 1982: Tafel 9, 7; Sögel, Kr. Aschendorf-Hümmling (reversed triangles), Knöll, 1959: Tafel 4, 8; Himmelpforten, Kr. Stade (Grave 5, hatched triangles), Knöll, 1959: Tafel 8, 15; Dötlingen, Kr. Oldenburg, Fansa, 1982: Tafel 25, 1962) and amongst the pottery of the Altmärk (e.g. Düsedau, Kr. Osterburg, Preuss, 1980: Tafel 8, 1 and 2 and Eichholz, Kr. Zerbst, Preuss, 1980: Tafel 48, 1). H3;

14. Tureen. Fragmentary. Rim and neck ornament suggests Horizon 3 tureen; lower sherd is unusually rounded for a tureen but has indications of a wide strap handle. H3;

15. Tureen. Fragmentary. Slightly cylindrical neck and short sharp shoulder. Single line of skating technique below rim, blocks of two lines of incised lozenge, possibly only in vicinity of handle. Filled

triangles on shoulder. Shape and general style of decoration is similar to tureen from D26 (Bloemers et al., 1981: p. 46). H3;

16. Tureen. Fragmentary. H3;

17. Tureen. Incomplete. Groups of verticals on neck, panels of verticals and zigzag on shoulder. Wide strap handle. H3;

18. Tureen. Fragmentary. Very friable fabric. H3;

19. Funnel beaker. Incomplete. Undecorated neck, horizontal line at base of neck, pendant groups of verticals on body;

20. Funnel beaker. Incomplete. Undecorated neck, line of stab marks at base of neck, fine grooves running over shoulder onto body;

21. Funnel beaker. Incomplete. Undecorated neck. Vertical lines on body;

22. Funnel beaker. Incomplete. Body, vertical lines;

23. Incomplete. 12 sherds. Undecorated, slightly flaring neck with faintly scored lines on body;

24. Funnel beaker. Incomplete. Undecorated neck, groups of grooved lines on body;

25. Funnel beaker. Complete profile, undecorated;

26. Funnel beaker. Incomplete. Faint line at base of vertical neck;

27. Funnel beaker. Incomplete. Undecorated;

28. Funnel beaker. Incomplete. Line of dots below rim, alternating groups of long and short lines on body;

29. Funnel beaker. Almost complete. Undecorated neck, vertical lines on body;

30. Funnel beaker. Incomplete. Almost complete body with vertical lines;

31. Funnel beaker. Incomplete. Very faintly scored double zigzag at base of neck;

32. Funnel beaker. Fragmentary;

- 33. Funnel beaker. Fragmentary;
- 34. Funnel beaker. Incomplete;
- 35. Funnel beaker. Incomplete. Large, thick-walled, with repair hole below rim;
- 36. Funnel beaker. Fragmentary;
- 37. Funnel beaker. Fragmentary.

Miscellaneous TRB pottery:

38. Shouldered bowl. Incomplete. Coarse friable fabric. Single line at base of neck. A fairly similar vessel in both shape and fabric is present at Exlo (No. 67, this paper) and another is known from Eext (1923/1 2k, van Giffen, 1944b: fig. 7);

39. Fifteen small decorated but otherwise featureless body sherds, probably representing fifteen different vessels, chiefly funnel beakers. H3;

40A-E. 5 thumb-sized rim sherds (not illustrated);

41 A-D. 4 lugs. A, portion of horizontal strap handle with vertical *Tiefstich* lines. The slight but distinctive curve at the end of the lug suggests either it is half of a double vertical handle (cf. Emmeln, Schlicht, 1968: 21/Tafel7:7) or that it is a horizontal lug (cf. Emmeln, Schlicht, 1968: 3/Tafel4:4). Double handles tend to have more complex ornament than horizontal handles and to occur on urns while horizontal handles occur on amphorae; B, portion of horizontally pierced lug with vertical *Tiefstich* lines; C, horizontally pierced lug with vertical grooves (not illustrated); D, fragment of horizontally pierced lug, very worn (not illustrated);

42. Base with footing. Decorated, probably H3;

43. Base with footing. Decorated;

44. Bases. Twenty-one sherds of twelve bases, eleven illustrated;

45. Body sherds. Small (thumb-sized and under), undecorated and featureless.

Non-TRB pottery:

46. *Kümmerkeramik*. Complete. There is some doubt as to the origin of this pot. It is not referred to in the report or shown in the photographs which, as it is more-or-less complete although undecorated, is surprising. However, it is clearly marked 'Emmen' with the year and month of the Emmen excavation;

47. *Wellenband* pot. Fragmentary. 5 undecorated featureless sherds with little curvature;

48. Pot beaker. Fragmentary. 1 sherd with finger tip rustication;

49. Fragmentary. 2 small sherds with finger nail impressions in vertical lines. The sherds are from a coil built vessel. Originally thought to be part of an EGK beaker, both the break pattern and the vertical layout of the impressions suggest that this identification is incorrect;

50. Bell beaker;

51. Sherd of wheel-thrown pottery, with dark brown glaze with abundant pale coloured small pits. Probably 16th/17th century (not illustrated);

52. Spindlewhorl with dark brown glaze. Probably 16th/17th century.

Flint:

53. Heavily damaged small axe of light grey flint whose form and dimensions are reconstructible. Part of top and large fragment of one of the sides missing. Polished on all sides. Originally longer, cutting edge shows evidence of intensive resharpening;

54. Very regularly shaped flint blade, proximal end missing. Steep retouch along both sides and around distal end. Light grey flint. Found in square K4, at the edge of the mound, depth 25 cm. Late Neolithic?;

55. Large flake of light grey coloured flint without traces of use (not illustrated).

4. HUNEBED D30

4.1. The 1918 excavations

After finishing the excavation of D40, van Giffen and

his field team moved to the *hunebed* D30, northwest of Exlo, *gemeente* Odoorn, which was excavated between 23rd September and 10 October 1918 (fig. 1).

The excavation also began here with the preparation of a contour plan of the mound and its immediate vicinity (fig. 13). After this, the mound was almost completely excavated down to the undisturbed yellow subsoil. As a result of the experience he had gained at D40, van Giffen this time laid out several profiles more-or-less at right angles to and joining the chamber (fig. 14). Unfortunately, the drawings and photographs do not show clearly how he carried this out. It is certain that a wedge-shaped piece of the mound between profiles II and III was left until near the end of the excavation, but in the end, only the baulk with profile I was left standing. The 1918 profile drawings give little information about the construction of the mound. A soil horizon under the mound was not observed and van Giffen (1925/27, II: pp. 213-214) therefore concluded that the old ground surface had been desodded. The structure of the mound was equally poorly observed, apart from the heavy podsol profile in the upper part. Large numbers of field stones were discovered in and under the mound which, especially on the south side of the chamber, formed a cobbled surface on a slope. There is less recognizable coherence on the north side. It appears that the cobbling was present there originally but later was mostly disturbed. There is a surprisingly large quantity of stones in front of the entrance. All the stones were recorded three dimensionally. In van Giffen's opinion, the stones were a sort of cobbling (*plaveisel*) on the slope of the first period mound which was enlarged and heightened shortly afterwards (van Giffen, 1925/27, II: pp. 213-214).

The chamber of D30 is oriented NNW-SSE, and consists of four pairs of side stones, two end stones and now two capstones. The other two capstones were already missing in 1818 (van Giffen, 1925/27, II: pp. 208-209). The entrance in the middle of the south side was flanked by a pair of portal stones. At present there is a third stone of capstone dimensions in the chamber, resting partly on the ground and leaning against side stones Z3' and Z3. This is not an original capstone, but a stone dumped in the chamber by foresters. At the beginning of the 1918 excavations, the capstone D2 was lying in the chamber but was replaced, however, by van Giffen. A large stone of the same height was set between Z1' and Z2' to give this capstone extra support.

In 1918, the floor of fieldstones appeared to be fairly intact. The internal measurements of the chamber at floor level are 6.2×2.5 m with a depth of c. 0.7 m; the external measurements are c. 7.5×3.5 m. The chamber stands in a more-or-less oval foundation pit of 9×4.5 m. The stone packing around the chamber appeared in places to be intact in 1918. In one or two places, a few stones had been dug out by 'stone diggers'.

The fill of the chamber was excavated in horizontal spits. The stones encountered during this operation

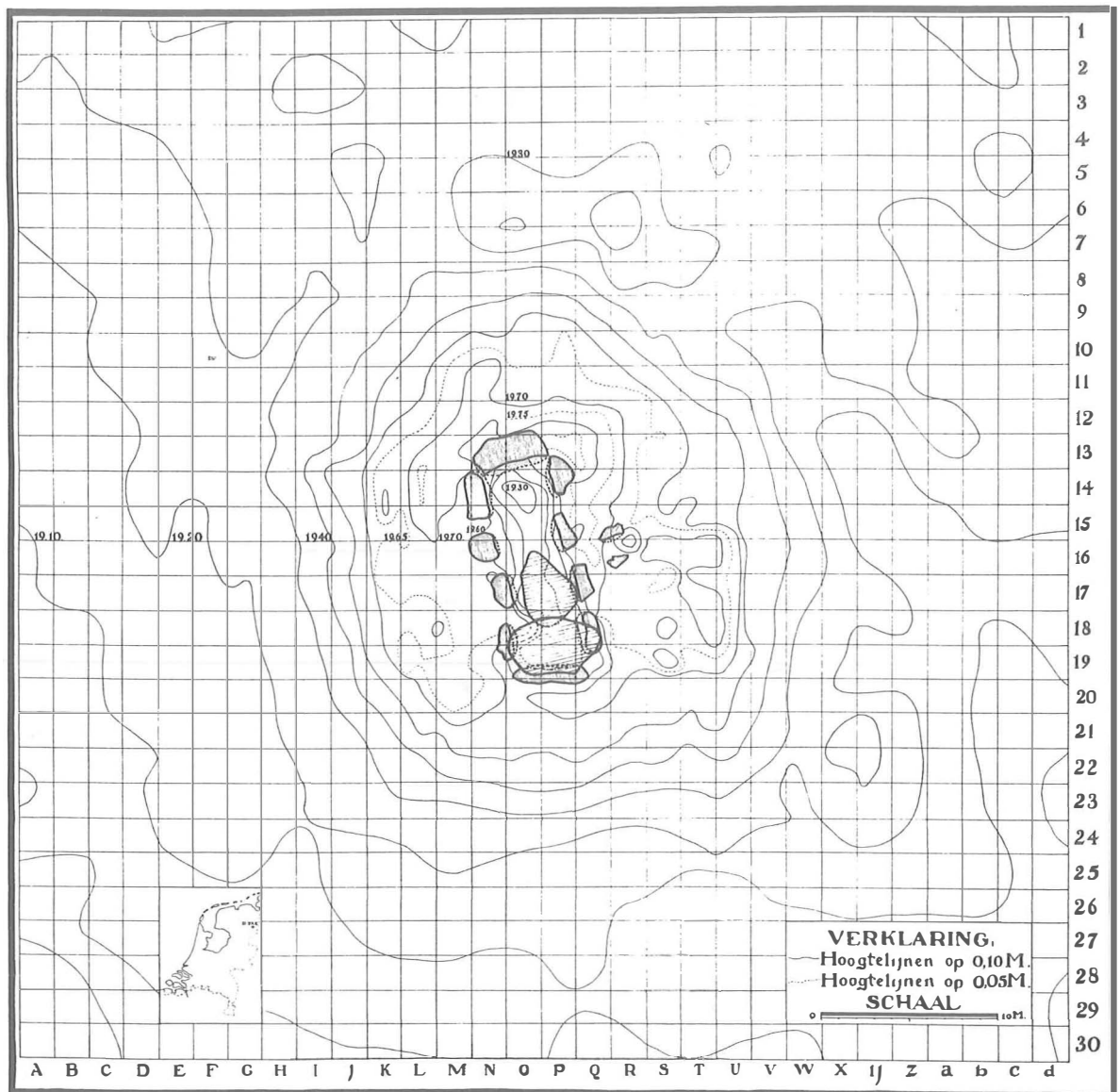


Fig. 13. Contour plan of hunebed D30 and surrounding area, after van Giffen (1925/27, Atlas: Pl. 134).

were, according to van Giffen, arranged in several man-made floors. These stones were also recorded three dimensionally.

4.2. The re-excavation of 1985

In 1985 profile I was re-opened, insofar as that was possible. Unfortunately, the former owner, the Province of Drenthe (D30 has since been transferred to the State; see *Jaarverslag Rijksdienst voor het Oudheidkundig Bodemonderzoek* 1990: p. 111), had erected a signpost on the only remaining intact part of the mound. As a result, part of the profile was not accessible.

The re-excavation showed that a clear soil was present under the mound, represented by c. 0.10 m

thick, light grey layer above an orange-yellow illuvial horizon (fig. 15). Fieldstones are present in places in the subsoil. The mound consists of orange-yellow sand with humic flecks. A light grey band, about 0.10 m thick, was visible in the body of the mound, rising up towards the chamber. This was apparently a soil which had formed on the slope of the primary mound. Unfortunately in 1985 it appeared that profile I was 20-25 cm lower in the vicinity of the chamber than it had been in, 1918 as a result of erosion caused by the trampling of visitors. Furthermore, there was a shallow recently dug hole just above the band of humus in the body of the mound. As a result, the orange-yellow body of the mound was only just still visible above the rising light grey horizon.

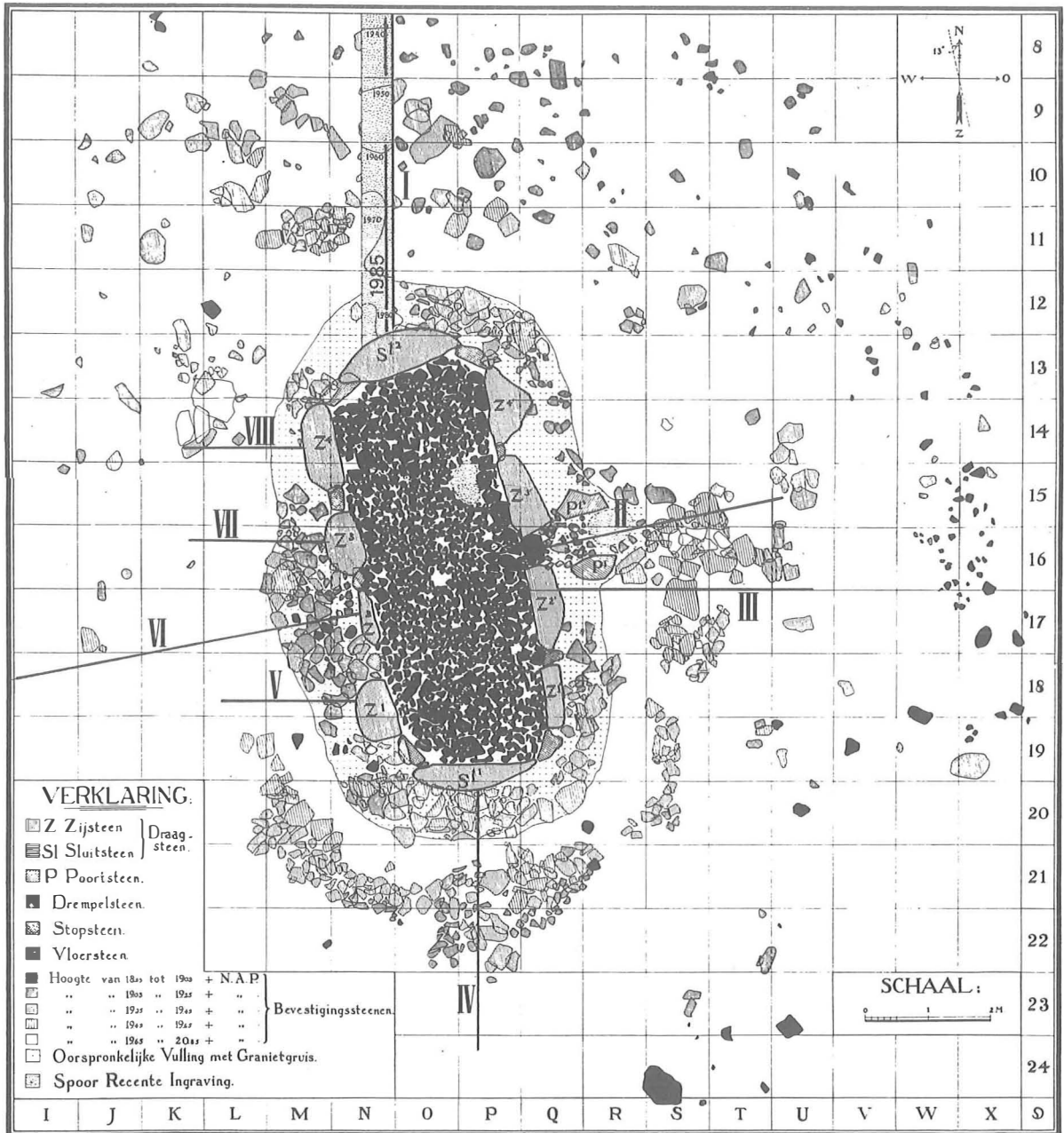


Fig. 14. Plan of the excavated area around D30, after van Giffen (1925/27, Atlas: Pl. 136). The location of the 1918 profiles through the mound and the redrawn profile of 1985 are indicated.

The height NAP was not remeasured in 1985. By comparing the levels taken in 1918, of the tops of the side, end and portal stones with those taken in 1985, the height NAP of the 1985 reference level could be established to an acceptable level of accuracy. There are strong indications that in this case the levels of 1918 are about 1 metre too low.

4.3. The reconstruction of the mound on the basis of the evidence from 1918 and 1985.

According to the contour plan of 1918, D30 was located on a slight rise (fig. 13). North of the mound the ground surface rises above 19.30; south of it, it is below 19.10 m +NAP. In 1985, the height of the old ground surface below the mound immediately north of SI2 was recorded at c. 19.20 +NAP. This surface also rises towards the north.

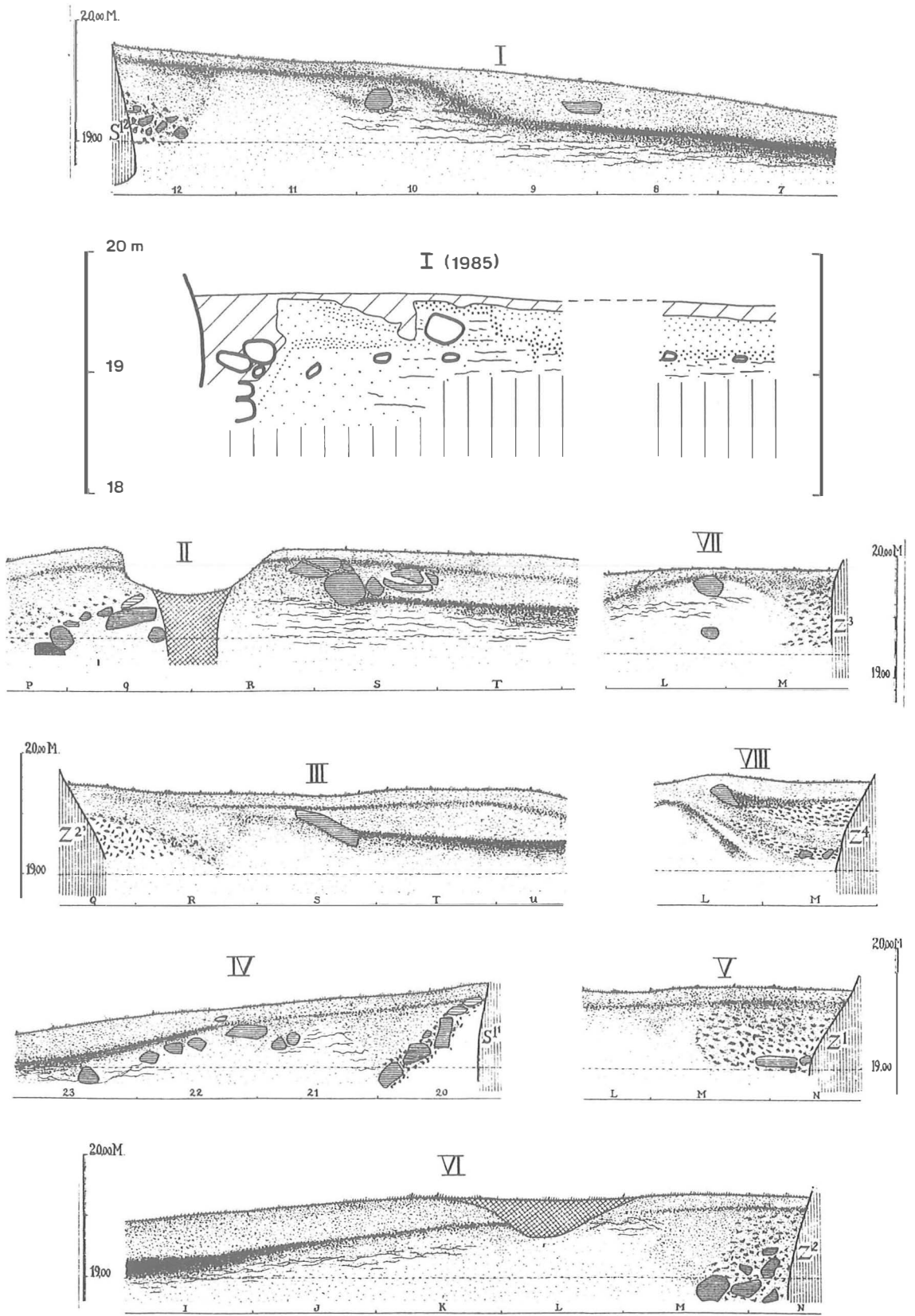


Fig. 15. The profiles through the mound of D30 of 1918, after van Giffen (1925/27. Atlas: Pl. 137) and of 1985.

As previously stated, in 1985 clear indications of a primary mound around the burial chamber were visible in profile I. In the upper part of this, a soil horizon is present which could be traced over a distance of one metre. The edge of the mound lies two metres north of SI2. By extrapolation, it must have had a maximum height of 0.75 m by SI2, i.e. of 19.95 +NAP. That means that a good part of SI2 (top, 20.30 +NAP) must have protruded above the primary mound. The stone packing around the chamber which according to van Giffen reached to 19.55 +NAP must have been covered by this mound. The 1985 profile shows a large fieldstone lying on the old ground surface at the edge of the primary mound (fig. 15). This stone had already been recorded in 1918, in square O-10, just on the boundary with square O-11 (fig. 14). At that time only a small part of this stone projected from the baulk. According to the 1918 field drawings, this stone must be one of the stones which made up the cobbling on the north side of the mound and which apparently was still lying in situ. The edge of the cobbling on the south side of the chamber also lies about 2 m from the outer edge of the end stone, and according to profile IV, on a slope with a similar angle to that in profile I (fig. 15). Van Giffen's primary mound with cobbling therefore exists. According to the soil on its surface, this small primary mound must have existed for a longish period of time. The primary mound was oval in shape, c. 11 x 8 m, with cobbling around and on its edge.

During a later phase, the mound around the burial chamber was enlarged to an approximately circular mound with a diameter of c. 16 m. There is scarcely any question of heightening, because at the time that the podsol horizon was developing on its upper surface, the mound was still not much higher than c. 19.80 +, i.e. even lower than 19.95 + which was allowed to the period 1 mound. Probably the mound had already started to deteriorate and some of the top of the mound had silted into the chamber. Considering the type of soil profile in the upper part of the period 1 mound, the period 2 mound must have been raised at the latest in the Early Bronze Age.

The question remains to what extent soil for the construction of the period 1 mound must have been brought from elsewhere. The volume of the foundation pit is equal to c. 22 m³. The volume of sand in the period 1 mound can be calculated as c. 18 m³. Some of the sand from the foundation pit was replaced in the pit with the stones and the granite grit. It therefore appears that in this case the primary mound consists entirely of sand from the foundation pit.

4.4. The finds (fig. 16)

4.4.1. *The distribution of the finds*

The fill of the chamber of D30 appeared in 1918 to be relatively undisturbed. Most of the finds were discove-

red in the chamber, in a relatively thin layer between van Giffen's fourth (i.e. lowest) layer of stones in the fill of the chamber and the actual floor. The four floors of stone in the chamber fill appear to be due to the manner by which the chamber was excavated, rather than being actual paved floors laid down by the users of the chamber. Without doubt the stones are for the most part drystone walling which fell into the chamber and which became imbedded in the sand and soil which spread in from the mound.

Both in the body of the mound and under it a few finds were discovered, which must be construction offerings. These are:

Finds number 8: sherds found in ground disturbed by the digging out of the stone packing, squares Q14/15, depth 19.20-19.30 +;

Finds number 44: sherds found in square R 12, above, below and between stones, depth 19.00-19.15 +;

Finds number 45: sherds found under the stones, in square Q22, depth 19.05 +;

Finds number 46: sherds found between the stones, south of the entrance in square S17, depth 19.55 +.

In the description of some of the finds, van Giffen (1925/27, II: p. 227) gives incorrect depths for the finds numbers 44 and 45, as 18.50 and 18.65 +NAP respectively. This appears to be a simple mistake in calculation. During the excavation only relative depths were recorded. After a long list of finds from the chamber which all were found lower than the reference point, the three finds groups 44, 45 and 46 which were found higher than the reference level, occur. Van Giffen did not notice this and subtracted the recorded depths from the NAP depth of the reference point, instead of adding them.

The location of the finds numbers 44 (funnel beaker No. 52) and 45 (bowls Nos 1-3) is of particular interest. Both of these finds occurs at the edge of the primary mound. The original ground surface in square R12 occurred at a depth of c. 19.20 +. The sherds therefore apparently lay in a shallow pit, amongst some stones. The old ground surface must have been at about 19.10 + in square Q22. The finds lay more-or-less on the old ground surface.

It is unfortunate that the details of the finding of both these finds groups can not be more precisely reconstructed. The earliest pottery at the site is involved and establishing the relationship of the pottery to the burial chamber and the period 1 mound would be interesting. Considering the distribution of the finds groups 44 and 45 it does not seem unlikely that both groups were offerings on the edge of the primary mound, although it is possible that they had already been buried at the time the mound was being built.

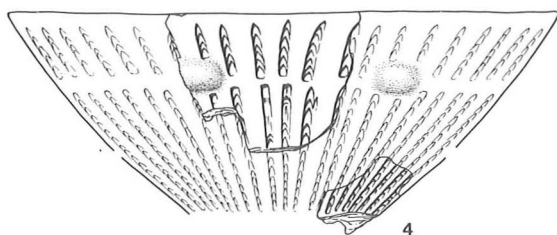
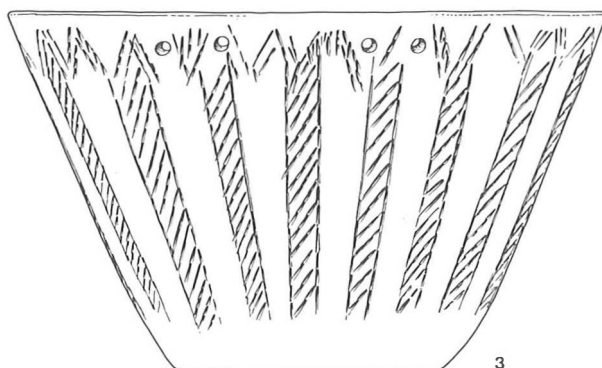
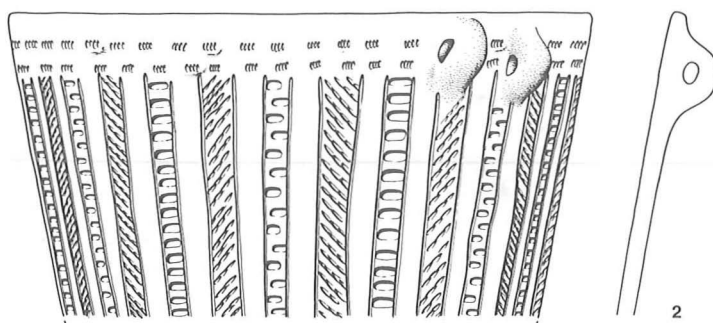
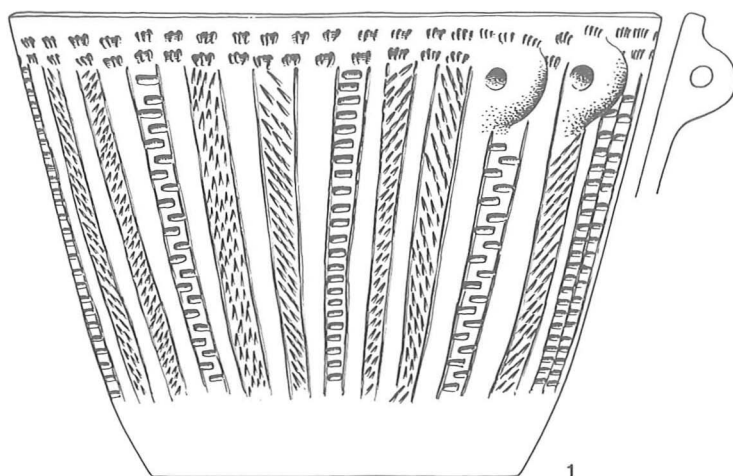


Fig. 16a-g. The finds from D30. Scales: pottery 1:3, flint 1:2.

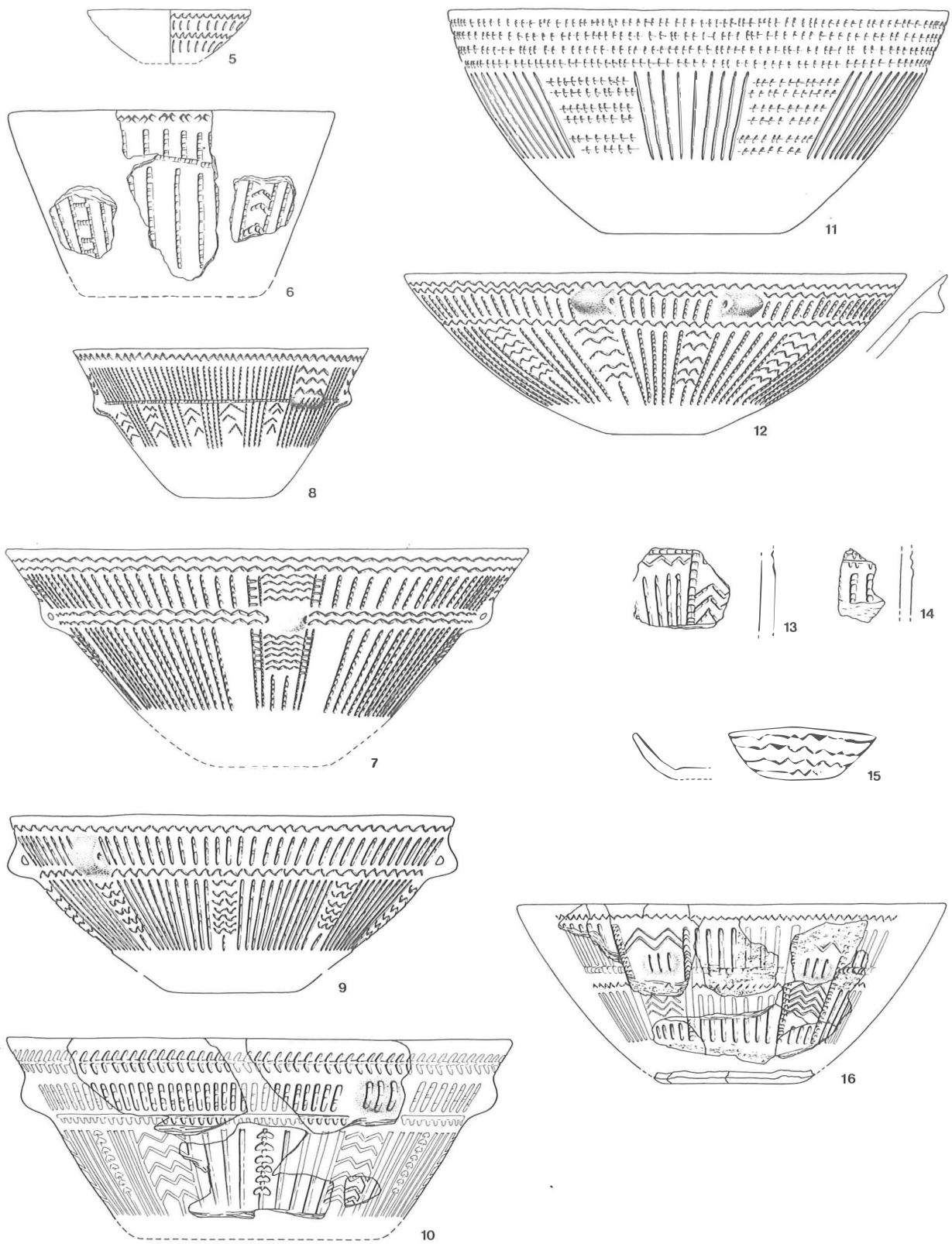


Fig. 16b.

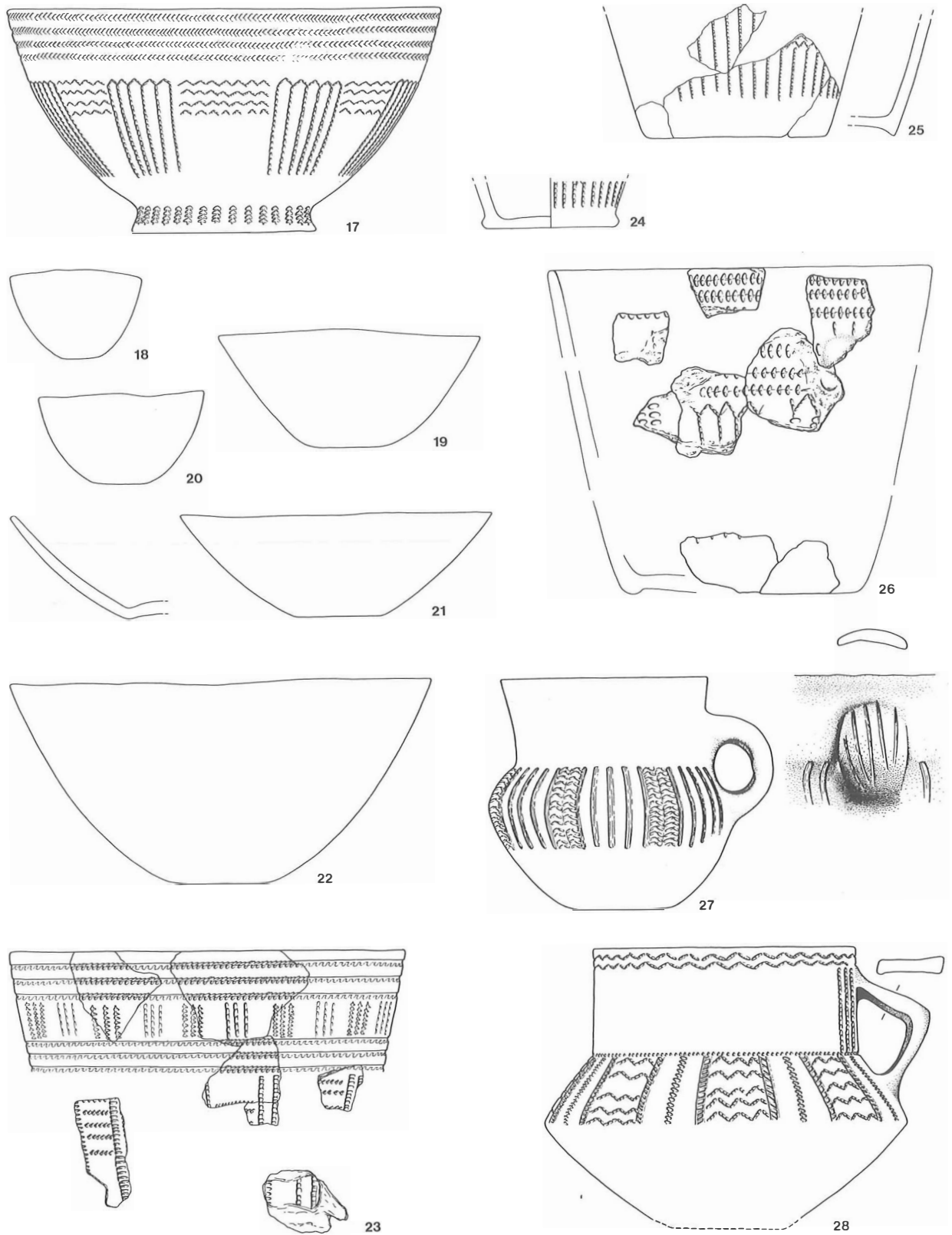
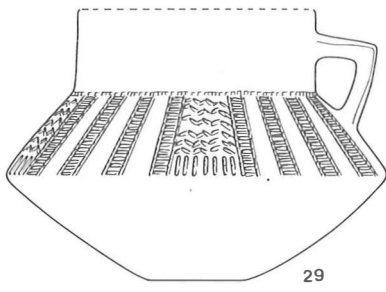
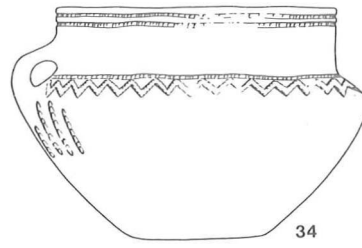


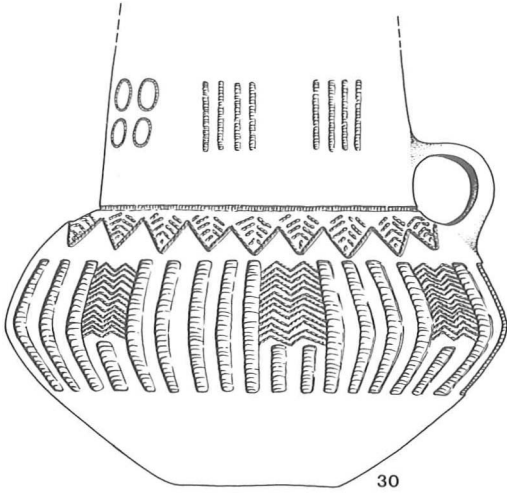
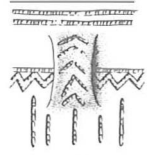
Fig. 16c.



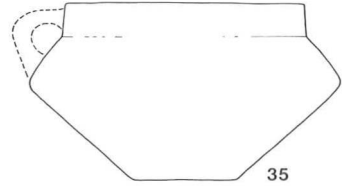
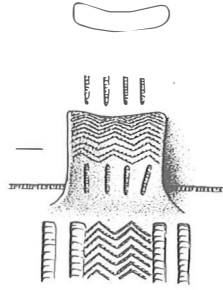
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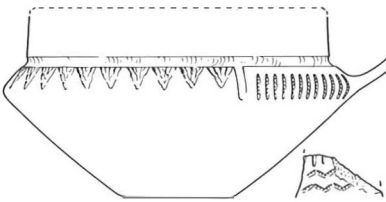
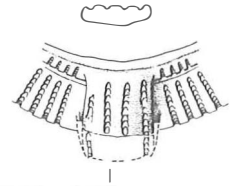
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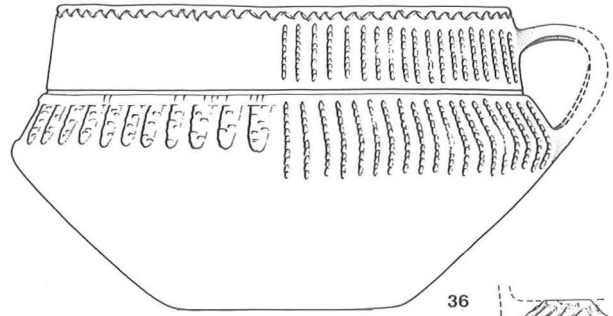
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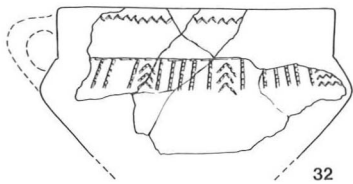
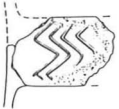
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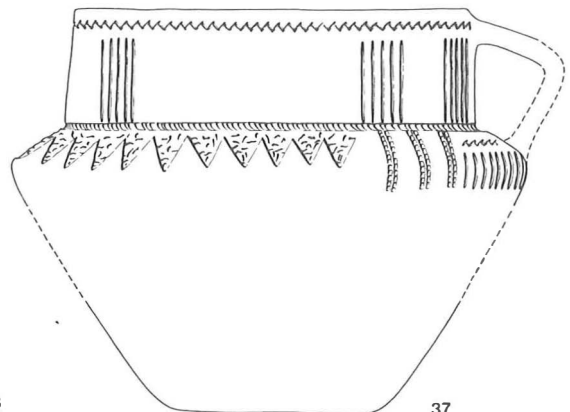
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Fig. 16d.

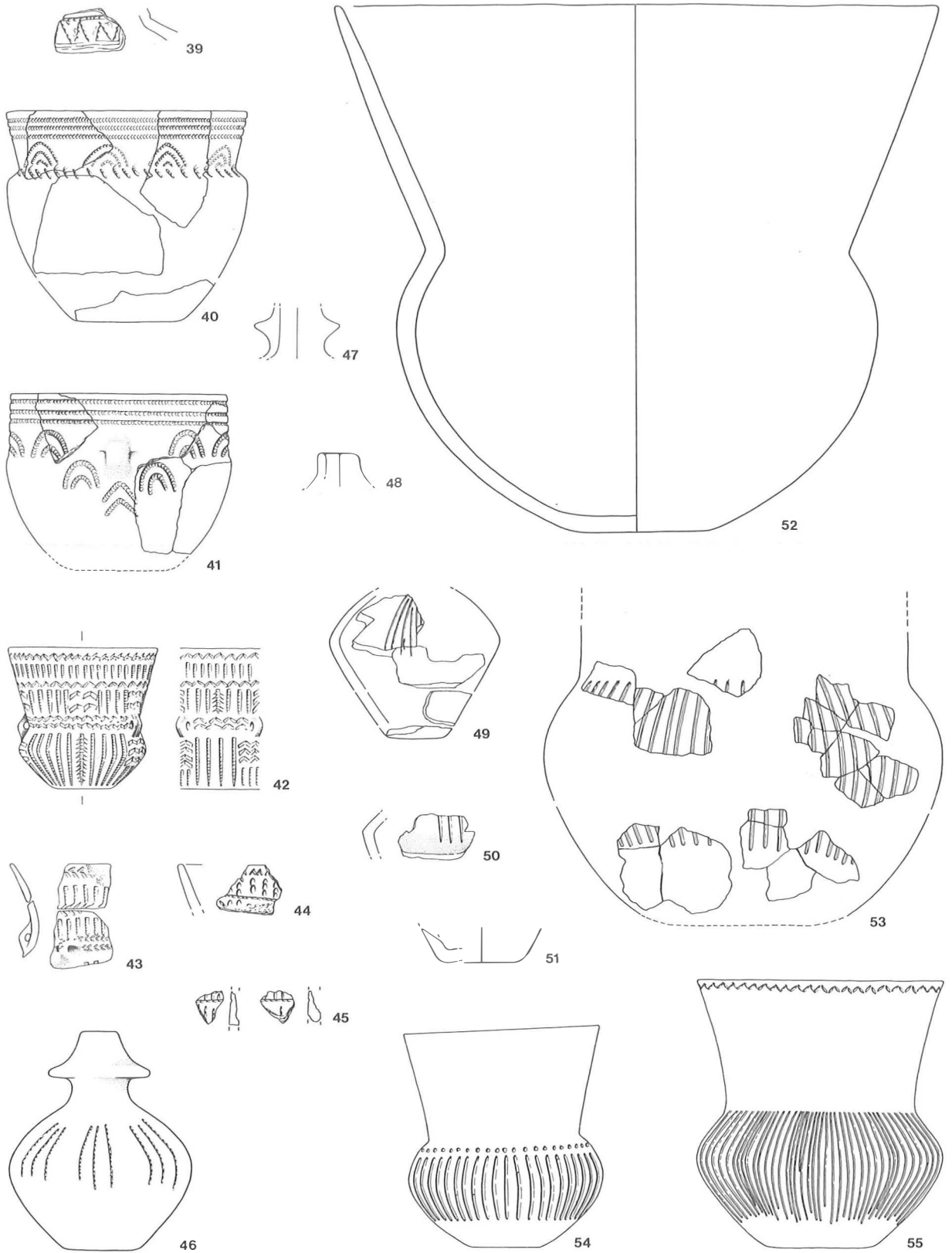


Fig. 16c.

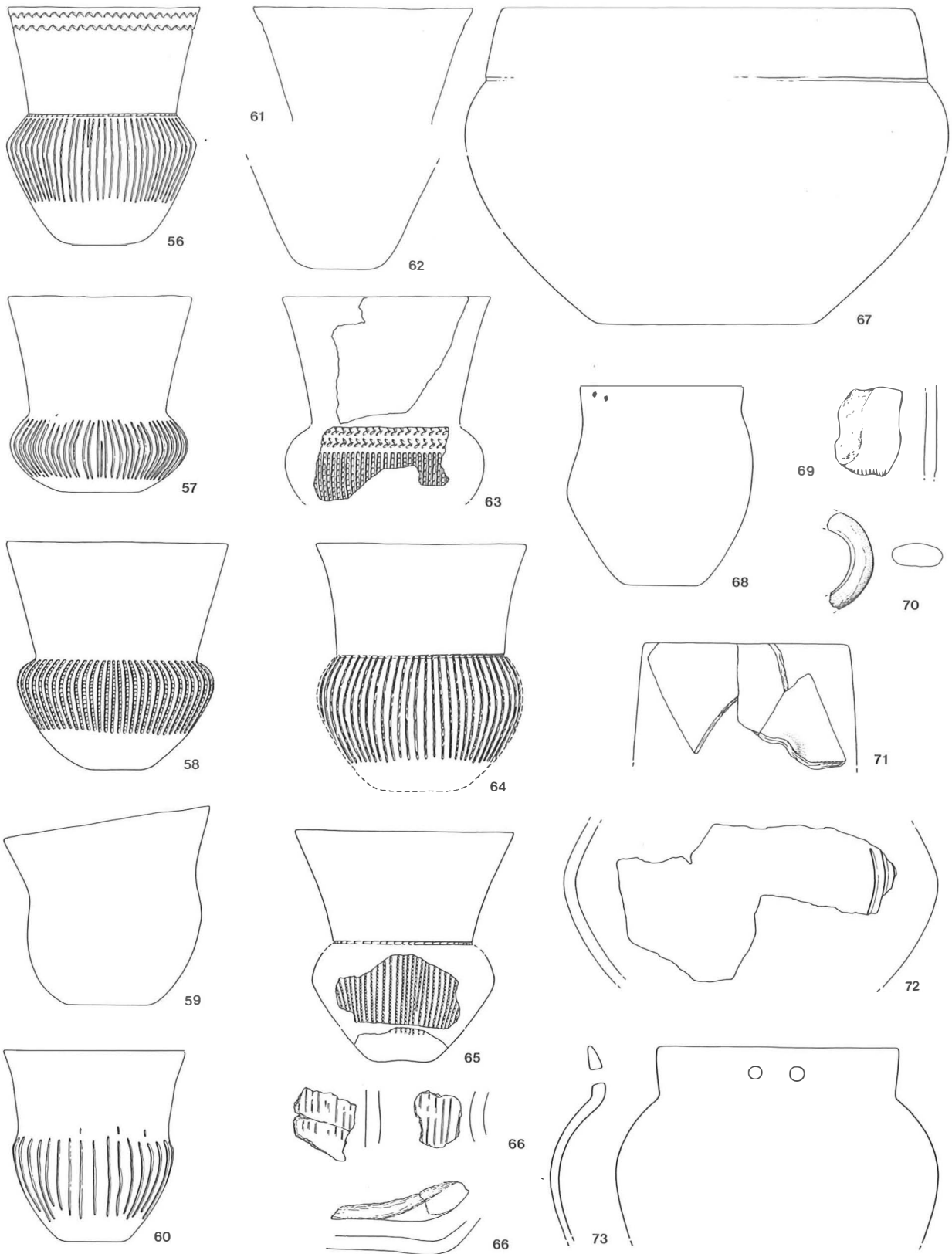


Fig. 16f.

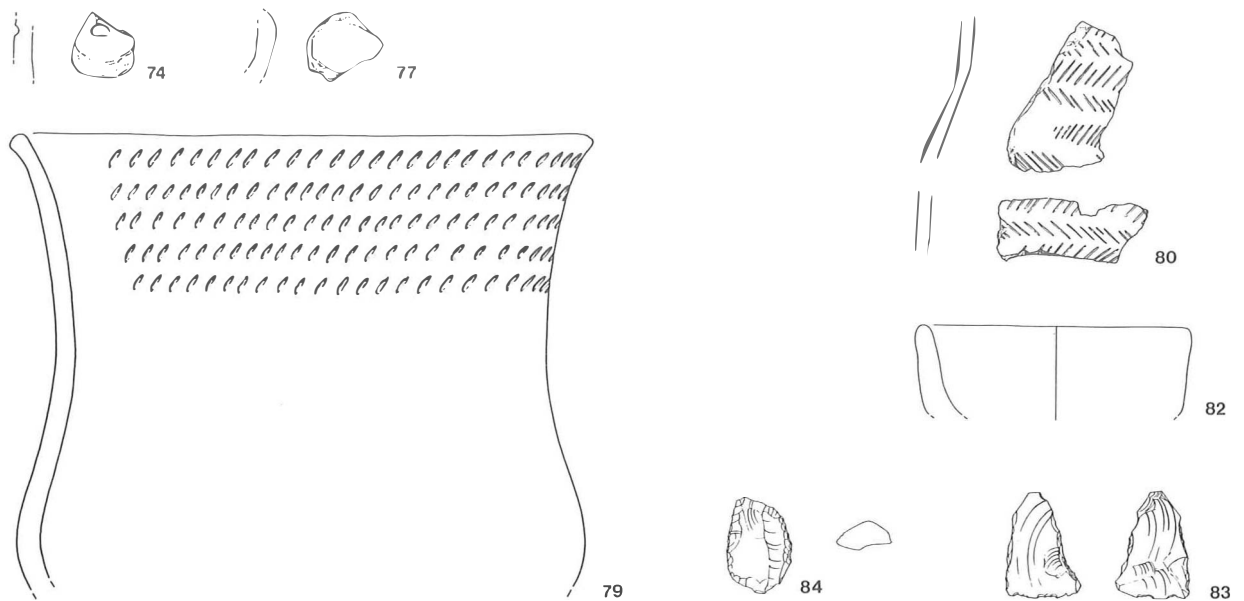


Fig. 16g.

4.4.2. Dating the construction and use of the chamber by the finds

The finds consist of 1500 sherds of pottery and a few pieces of flint. The vast majority of the pottery, representing about eighty vessels, belongs to the TRB. Sherds of three Single Grave beakers and what is possibly a *Kümmerkeramik* bowl are also present. Sherd sizes vary from relatively large fragments to very small. In some cases, large portions of individual vessels can be identified and joined. Although there is no evidence that the chamber was disturbed significantly at any time, it is not now possible to reconstruct the original position of individual vessels because a significant amount of the pottery is unnumbered and in some cases individual sherds bear more than one number.

The TRB Pottery:

About 80 vessels are recognizable; in addition, there are sherds which cannot be assigned to individual pots, of which some probably represent vessels not otherwise identified. Excluding the funnel beakers, collared flasks, undecorated bowls and miscellaneous vessels which may belong to several horizons, the pottery represents the following horizons (Brindley, 1986b):

Horizon 1: three bowls (Nos 1-3), and possibly also two funnel beakers (Nos 52 and 53). Minimum total: 3-5. All this material was found outside the chamber;

Horizon 2: one bowl (No. 4), three jugs (Nos 27-29), and possibly the funnel beaker No. 54 on the basis of its general similarity to jug No. 27. Minimum total: 4-5;

Horizon 2/3: Jug No. 30, tureens Nos 31 and 34. Minimum total: 3;

Horizon 3: Bowls Nos 5-10, 12-16, pails Nos 23, 26

(late), tureens Nos 32, 33, 36, 37 (39), lugged beakers Nos 42-45. Minimum total: 22;

Horizon 4: Bowls No. 11, tureens Nos 40, 41. Minimum total: 3;

Horizon 4/5: Bowl No. 17. Minimum total: 1.

The remainder of the pottery is consistent with this pattern of use. The open undecorated bowls Nos 19-22 probably represent Horizons 2 or 3; in form they are similar to the decorated bowls of these horizons rather than the more globular and rounded bowls of the later horizons. Undecorated bowls occur in several small Horizon 2 and 3 assemblages e.g. Zeijen flat grave E under tumulus II (Bakker, 1979: fig. B14) and Eext stone cist D13a (van Giffen, 1944b: fig. 7, pots 2g and f). The funnel beakers lack the large zigzags which although not closely datable, appear to occur chiefly with late 3 and Horizon 4 pottery. Likewise, none of the funnel beakers have the short, high and sharp shoulder which occurs commonly with large zigzag motifs. The shouldered bowl which bears a general resemblance to Horizon 7 shouldered bowls, is paralleled by a vessel from Eext stone cist D13a (van Giffen, 1944b: fig. 7, pot 2k) where the associations point to an early Horizon 3 date. The small perforated beaker No. 68 has its closest parallels at Bronneger D21/22. Although the context precludes a precise assignation, material of Horizons 1-3 is present.

In general, the Horizon 3 pottery appears to represent the earlier rather than the later aspect of this horizon.

It is unfortunately not clear whether the bowls Nos 1-3 were deposited prior to the construction of the *hunebed* or were deposited at its edge subsequently. The earliest identifiable material in the chamber belongs to

Horizon 2 and apparently marks the beginning of use of the chamber on a continuous if not necessarily regular basis as shown by the presence of pottery representing Horizons 2, 2/3 and 3. Subsequently, the frequency of deposition seems to have declined. Very little Horizon 4 material is present and the latest pottery appears to bowl No. 17. It has been suggested that Horizons 1 and 2 were of relatively short duration, each lasting approximately fifty years (Brindley, 1986b: pp. 104-105). It is possible that the *hunebed* was constructed at or around 4700 BP/3400 cal BC, on the basis of similarities between the bowls of Horizon 1 and products of the Fuchsberg Style of North Group TRB for which a number of radiocarbon dates are available. A slightly later date is suggested by the Horizon 2 pottery from the chamber. The time lapse is possibly only significant in terms of the pottery itself. In either case, D30 must be considered as one of the oldest *hunebedden* of the West Group. Pottery of Horizon 1 is also known from Bronneger D21, Emmen D43a (see Brindley, 1986b: fig. 3), Heveskesklooster G5 and the stone cist of Heveskesklooster (unpublished). *Hunebedden* which were built during Horizon 2 include Tinaarlo D6e/f (van Giffen, 1944a), Hooghalen D54b/c and Rijs F1 (van Giffen, 1924a). None of these *hunebedden* has a large quantity of early pottery. After Horizon 3, D30 was only sporadically used. The abandonment of *hunebedden* either permanently or for several hundred years is not uncommon.

The three Single Grave beakers Nos 79-81 and the crude bowl No. 82 represent later activity; the former can be dated to 4100-4000 BP/2700-2500 cal. BC and the later to somewhere between 3500-3000 BP/1900-1200 cal. BC. Finds of small numbers of Single Grave beakers occur quite regularly at *hunebedden*. In some instances where Horizon 7 pottery is also present, this material can be viewed as representing some form of continuity of practice. In this case, however, a gap of several hundred years appears to exist between the latest TRB use and the deposition of the Single Grave beakers.

4.4.3. Catalogue

1. Pail. Incomplete. 4 lugs in 2 pairs. 2 lines of maggot-shaped impressions below rim and continuous over lugs. Separate vertical strips (ladders, zippers, hatched diagonally and vertically) and horizontal maggot zippers. Each ladder or zipper strip alternates with two hatched strips in regular pattern. H1;

2. Pail. Incomplete. 2 pairs of lugs. 2 lines maggot impressions which do not run over lugs. Separate ladder, zipper and hatched strips in regular pattern. H1;

3. Bowl. Incomplete, restored. Very irregular zigzag ladder below rim. 2 horizontal sets of four perforations for 2 pairs of some form of lugs. Separate alternating diagonally hatched strips and possibly one ladder strip. Good parallels for the irregular ornament below the rim do not seem to be as easy to find as the line of impressions on Nos 1 and 2 but nevertheless, they appear to have been quite widespread. The motif occurs for instance on a Fuchsberg Style bowl from Flensburg illustrated by Schwabedissen (1979: Abb. 3. 1) and on a bowl from Samswegen (Preuss, 1982: Tafel 38, 10). H1;

4. Dish. Incomplete. Slightly curved profile. Low, perforated, undecorated lugs. *Tiefstich*, irregularly executed. Upper zone, undefined, broad pointed *Tiefstich* verticals. Lower zone: pointed *Tiefstich* verticals. H2;

5. Dish, miniature. Almost complete profile. *Tiefstich*. No lugs. H3;

6. Dish. Almost complete profile. Broad *Tiefstich*. Zigzag below rim. Upper zone of verticals separated from lower zone by horizontal *Tiefstich* line. Lower zone: chiefly verticals, but including at least one ladder and one vertical chevron, possibly below a lug. H3;

7. Dish. Incomplete/restored. *Tiefstich*. 4 equally spaced perforated lugs. Upper zone defined by double line of zigzag, with continuous band of verticals except above and below lugs where panel of zigzag defined by ladders is present. H3;

8. Complete profile. *Tiefstich*. 2 pairs lugs. *Tiefstich*. Zigzag below rim. Band of verticals except over lugs where replaced by four zigzags. Horizontal line separates lower zone with alternating groups of vertical lines, multiple 'M' motif and irregular pointed arches. H3

9. Dish. Almost complete profile. *Tiefstich*. 4 horizontal lugs, slightly curved walls. Upper zone: verticals defined by single zigzags. Lower zone: groups of vertical grooves and 'W' motif. H3;

10. Dish. Broad *Tiefstich* and *tvaerstik*. 4 unperforated lugs. Slightly curved wall. Coarse *tvaerstik* defining upper zone of vertical *Tiefstich*. Lower zone: alternating multiple 'M' motif, verticals and single *tvaerstik* lines repeating. The type of *tvaerstik* employed is reminiscent of the Horizon 2 type rather than the later type. H3;

11. Bowl. Almost complete profile. *Tvaerstik*. 4 continuous lines under rim, alternating groups of horizontal lines and vertical grooved lines below. H4;

12. Lugged bowl. Complete profile. *Tiefstich*. 4 horizontally perforated undecorated lugs close to rim. 2 zigzag lines below rim, upper zone of verticals separated by single zigzag line from lower zone of alternating groups of 'M' motif and verticals which do not relate to the position of the lugs. H3;

13. Dish. Fragmentary (1 sherd). Lower zone, defined panels with verticals below single zigzag and panel of 'M' motif, probably below lug. H3;

14. Bowl. Fragmentary (1 sherd). 2 lines horizontal *tvaerstik* above vertical *Tiefstich*. Upper zone of bowl. H3;

15. Miniature bowl, base sherd missing. 3-4 lines of untidy *Tiefstich* zigzag continuous around body. H3;

16. Lugged bowl. *Tiefstich* and grooves. 4 unperforated lugs with incised lines. Zigzags below rim, band of vertical grooves and large 'M' motif over lugs. Lower zone: defined panels of 'M' motif and grooved lines. H3;

17. Bowl. Complete profile. Footring with vertical *tvaerstik*. 4 *tvaerstik* lines below rim. Alternating groups of 4 horizontal zigzags and 6 *Tiefstich* lines pendant from zigzag. Although the ornamental scheme belongs to the Anlo-Uddelermeer Style of Horizon 5, the use of *tvaerstik* is more characteristic of Horizon 4;

18. Small hand bowl. Complete profile. Neatly made;

19. Small bowl. Complete profile;

20. Bowl. Complete;

21. Bowl. Reconstructible;

22. Bowl. Complete profile;

23. Pail. Fragmentary. *Tiefstich* and *tvaerstik*. Three lines *Tiefstich* overlain by small half bone impressions defining upper zone of alternating 3 *Tiefstich* lines and 3 *tvaerstik* lines. Lower zone includes vertical and horizontal lines. H3;

24. Pail. Fragmentary (1 sherd). Complete base with close-set vertical *Tiefstich* lines and indications of panel of zigzag/chevron. The pinched out foot is reminiscent of the small Hooghalen pails;

25. Pail. Fragmentary, lower part only. Decoration of vertical *Tiefstich* with panels of zigzag extends close to base. H3;

26. Pail. Incomplete. *Tiefstich* and *tvaerstik*. Upper zone of *Tiefstich* verticals defined by three lines *tvaerstik*. Lower zone of wide panels defined by *tvaerstik* containing spaced groups of *Tiefstich* lines pendant from zigzag. H3;

27. Jug. Complete profile. Rounded profile, vertical neck, rounded short shoulder, thick crude handle. Shallow grooves. Undecorated neck. Body decorated to below mid-belly with vertical chevrons

(single or paired). Vertical lines on handle. There are good parallels for this type of jug at Bronneger (Knöll, 1959: Tafel 1, 12) and Glimmen G2 (Brindley, 1986a: fig. 40, 238). H2;

28. Jug. Almost complete profile. Angular profile, tall, cylindrical neck, long shoulder and wide angular strap handle from mid-neck to mid-shoulder. *Tiefstich* and *tvaerstik*. Neck: two zigzag lines below rim, 3 verticals on either side of handle, *tvaerstik* line at base. Shoulder: alternating panels of multiple zigzag defined by narrow ladders with 2 vertical *tvaerstik* lines in between. Upper portion of handle badly worn but probably decorated. There are close parallels for this type of jug at Heveskesklooster G5 (unpublished), Hooghalen D54b/c (Brindley, 1986b: fig. 9; recent examination has shown that this jug also has panels on the shoulder) and Zeijen (Bakker, 1979: fig. B13, 33 and B14, 20a). H2;

29. Jug. Body only. Angular profile. *Tiefstich*. Ladders and panels of zigzag defined by ladders. Angular strap handle with vertical lines on upper part. H2;

30. Jug. Restored. Almost complete profile (rim missing). *Tiefstich*. Tall, slightly conical neck and slightly convex shoulder. Complex ornament. Neck: two groups of 4 verticals on either side of the handle. Two groups of 4 'O' motif opposite handle. Shoulder: hatched triangles pendant from line at base of neck and on and running over shoulder to mid belly, alternating panels of multiple 'M' motif and 4 broad vertical *Tiefstich* verticals. Handle: multiple zigzag and vertical lines. Some sherds marked 38. This jug belongs may be compared to vessels which share its general proportions and size including an unpublished vessel from Bronneger D21/22, four vessels from Emmeln (Nos 2, 3, 16 and 17, Schlicht, 1968), possibly one from Gross Berssen (No. 209, Schlicht, 1972) and from further east in the Altmark, a vessel from Niedergörne, Kr. Stendal (Stolle et al., 1988: Abb. 4) and various other sites shown by Preuss (1982: e.g. Tafel 26, 1; Tafel 51, 50; Tafel 51, 1). These vessels show considerable variation in the form, number and arrangement of the lugs or handles, which range from small horizontally pierced bosses at the base of the neck, to large horizontal handles, to large angular vertical strap handles, and in number from single handles to one pair and two pairs. These vessels share angular profiles and long necks and often have long shoulders and are relatively large. Because of the number and variety of handles, they may be treated with jugs, tureens and amphorae, but are clearly outside the norms of these classes. They are more consistent when treated as a group and should perhaps be considered as a type apart. The decoration indicates that they were current during Horizons 2 and 3. H2/3;

31. Tureen. Incomplete. Angular profile (body only). *Tiefstich*. Wide and probably angular strap handle attached to junction of shoulder and body. Grooved line at base of neck. Vertical *Tiefstich* adjacent to handle, filled triangles on remainder of shoulder. Vertical lines and some zigzag on handle. Neatly finished. Slightly hollow base. There is a similar but larger tureen at Bronneger D21/22 (B.A.I. store). H3;

32. Tureen. Incomplete. Handle missing. Angular profile. *Tiefstich*. Vertical neck. Zigzag line under rim, line at base of neck. Shoulder: alternating panels of zigzag, chevron 'V', vertical lines adjacent to handle and small zigzag panels. A good parallel for this tureen and No. 33 is the pot from Emmen D43a (Knöll, 1959: Tafel 3, 11). H3;

33. Miniature tureen. Incomplete. *Tiefstich*. Line of zigzag below rim. Chevrons, panels of zigzag and *Tiefstich* lines on shoulder. H3;

34. Tureen. Restored. Complete profile. *Tiefstich*. Angular profile with small thick handle. Vertical neck: 2 horizontal lines below rim. Line at base of neck and empty triangles (or zigzag line) on shoulder. Vertical lines on either side of the handle. Inverted 'V' motif on handle. H2/3;

35. Tureen. Complete profile. Undecorated. Short, slightly conical neck, sloping shoulder and evidence for handle;

36. Tureen. Restored, in poor condition. Complete profile. Angular profile. Deeply impressed *Tiefstich*. Steeply sloping shoulder. Strap handle. 1 line zigzag below rim. Line at base of neck. Verticals on neck and shoulder on either side of handle, cover part of vessel circumference. Pseudo-triangles on remainder of shoulder. Strap handle has some vertical decoration. H3;

37. Tureen. Incomplete. *Tiefstich*. Slightly conical neck, rounded shoulder. Wide, flat handle with zigzag. Neck: zigzag line below rim, well-spaced groups of 5 verticals, wide *Tiefstich* line at base. Shoulder: rusticated triangles and double line of *Tiefstich* by handle. H3;

38. Tureen. Fragmentary. Line of *Tiefstich*/*tvaerstik* at base of neck. Possibly from tureen similar to No. 37. H3;

39. Tureen. Fragmentary. 1 shoulder sherd with rusticated triangles outlined with fine pointed *Tiefstich*. H3;

40. Tureen. Complete profile, except for lug. Almost vertical neck, very small shoulder. *Tvaerstik*. 3 horizontal lines below rim. Stacked 'U' motif on neck. *Tiefstich* stabs on shoulder. H4;

41. Tureen. Almost complete profile, except for lug. *Tiefstich*. Very slight, unmarked shoulder. 3 lines below rim, stacked, inverted 'U' motif. Below handle, stacked, inverted 'V' with inverted 'U' on either side. Early H4;

42. Lugged beaker. Complete profile. Slightly open straight neck, 4 small lugs in widely spaced pairs, angular shoulder. Two zones on neck, defined by zigzags and filled with *Tiefstich* vertical lines only in upper zone, vertical *Tiefstich* lines with at least one vertical *tvaerstik* and multiple 'M' motif over lugs. Decoration repeated over entire body. Simple lines on lugs. H3;

43. Lugged beaker. Incomplete. *Tiefstich*. Skating, verticals and small lug. H3;

44. Lugged beaker. Fragmentary. Zigzag motif below rim, verticals, horizontal pointed *Tiefstich* line with verticals and 'M' or chevron motif in lower zone. H3;

45. Lugged beaker. Fragmentary (3 sherds). *Tiefstich*. Neck of small lugged beaker. H3;

46. Collared flask. Restored. Short neck and round body. Neck apparently drawn up round stick, collar possibly applied. Group of 3 *Tiefstich* lines to edge of shoulder;

47. Short-necked collared flask. Collar and neck sherd;

48. Collar piece. Appears to have been initially pinched out and then enhanced by applied collar.

49. Collared flask. Incomplete. Angular body of collared flask with groups of incised lines;

50. Collared flask. Fragmentary. Angular shoulder of collared flask with groups of incised lines;

51. Base sherd, rough on inside. Probably collared flask;

52. Funnel beaker. Restored. Almost complete. Undecorated, with flaring neck and small base. Possibly H1;

53. Funnel beaker. Incomplete. Rounded body with vertical grooves. There is a general similarity between the undecorated sherds of the lowest parts of bowl No. 1 (Findspot 45) and No. 53. Both pots are also decorated with grooved lines (although, of course, No. 1 has additional techniques). Possibly H1;

54. Funnel beaker. Complete profile. Undecorated neck, line of stabs at base of neck, shallow *Tiefstich* on body. There is a general similarity between this pot and jug No. 27;

55. Funnel beaker. Partially restored. Almost complete profile. Slightly flaring neck and rather angular shoulder. Line of zigzag below rim. Fine *Tiefstich* to mid-belly. Probably H3;

56. Funnel beaker. Almost complete. *Tiefstich*. Two small zigzag lines below rim, line at base of neck, fine lines all-over-body to close to base. Probably H3;

57. Funnel beaker. Restored. Complete profile. *Tiefstich*. Undecorated neck, short body with pronounced shoulder, fine irregularly incised lines close to base;

58. Funnel beaker. Complete profile. Undecorated neck, highish rounded shoulder. Regular *Tiefstich* to mid-belly;

59. Funnel beaker. Complete profile. Assymetrical profile. Undecorated. Poorly finished;

60. Funnel beaker. Complete profile. Undecorated neck, unaccentuated shoulder. Scored lines. Not well-finished;

61. Funnel beaker. Undecorated neck. Fine fabric.;

62. Funnel beaker. Lower part of body of undecorated funnel beaker;

63. Funnel beaker. Undecorated neck, rounded body. *Tiefstich*. Two horizontal lines opposed *Tiefstich* with vertical lines below. See G2: 68 for good parallel;

64. Funnel beaker. Incomplete. *Tiefstich*. Undecorated neck, rounded body with vertical lines;

65. Funnel beaker. Reconstructed profile. *Tiefstich*. Undecorated neck. Horizontal line at base of neck, vertical lines on body;

66. Funnel beaker. Fragmentary. Fine *Tiefstich* lines on body. Coarse, densely gritted fabric.

Miscellaneous:

67. Shouldered bowl. Reconstructible profile. Flat-topped rim, wide with low neck, slight shoulder, with faintly scored line at base of neck. Not well finished. Has split along lines of manufacture. A similar vessel is known from the stone cist at Eext (van Giffen, 1944b: afb. 7, 2k) where the associations indicate a H2/3 date;

68. Beaker with rim perforations. Reconstructed. Asymmetrical profile. Slightly flaring neck and unaccentuated, slack, shoulder and body. Two pairs of post-firing perforations, one pair preserved. Several parallels for this vessel were found at Bronneger D21/22 (e.g. Knöll, 1959: Tafel 12, 11).

These vessels appear to form a distinct group characterized by the following, unaccentuated profile with short open neck usually with two to four perforations under the rim, and biconical body, sometimes with lugs at the top of the shoulder. Although the Bronneger and Exlo examples are undecorated, ornamented versions also occur, e.g. Buinen D28 (van Giffen, 1943: afb. 30, 82). As a group, they may have escaped attention as either unusual forms of funnel beakers or amphorae;

69. Neck sherd with line of *Tiefstich* at base of neck. ?Tureen;

70. Sherds of coarse, tureen-like vessel including thick handle and body sherds. Not illustrated;

71. Undecorated, straight neck with line of decoration at base of neck and fracture point. Thickening indicates lug at base of neck;

72. Large shoulder fragment of biconical vessel. Min. 3 grooved vertical lines;

73. Reconstructible profile. Short vertical neck, rounded body. 4 large perforations in two opposed pairs;

74. Fragmentary. 1 body sherd;

75-76. 2 base sherds, not illustrated;

77. 5 very small rim sherds of different pots. 4 of the sherds are too small for further identification (not illustrated);

78. 100 undecorated featureless sherds, mostly very small (not illustrated).

Other pottery:

79. Incomplete. Large Single Grave beaker. Diagonal stabs in 5 horizontal undefined bands;

80. Incomplete. Single Grave beaker. 1d type;

81. Lower undecorated portion of Single Grave beaker (not illustrated);

82. Bowl. Incomplete, base missing. Crude. Possibly *Kimmerkeramik*.

Flint:

83. Transverse arrowhead of dark grey flint;

84. Small scraper with retouch along two sides;

85. Flint flake with some retouch near distal end. Dark grey flint;

86. 27 pieces of struck flint, flakes and pieces without traces of working (not illustrated).

5. ASPECTS OF TRB POTTERY FROM HUNE-BEDDEN

Pottery in ceremonial contexts is either custom made for ritual purposes or selected from the range of domestic wares. Highly decorated pottery such as the TRB pottery is usually considered to have been made with ceremonial purposes in mind. There are, however, grounds for suggesting that the pottery found in *hunebedden* was

selected from a domestic range of pottery which was highly decorative and included an unusually wide range of distinct forms. *Hunebed* inventories include not only fine pottery in the sense of well-finished and competently decorated vessels; they also include both very poorly made and finished specimens and relatively large funnel beakers as well as undecorated and sometimes not particularly well-finished bowls. The poorly made specimens include funnel beakers, tureens, bowls etc. which may have irregular bases and rims, or be markedly asymmetrical in profile, have uneven, unsmoothed walls, on occasion even showing horizontal lines along the coils, be badly fired and have crude decoration. These vessels are clearly not chosen for their aesthetic appeal or competent workmanship. They are the products of very poorly skilled individuals. The 'incompetent' pieces are usually limited in number but poorly finished pottery appears to be present on a regular basis in *hunebedden*, during all horizons (except Horizon 5 perhaps). It appears therefore, that not all pottery was selected for deposition on the basis of its quality. The more competently made pottery includes some very finely finished and decorated pieces, but the vast majority of the pottery is chiefly characterized by the large amount of basically simple and repetitive decoration. Once the basic pattern and the technique is understood, the decoration can be applied to a Horizon 3 bowl in less than 15 minutes by a novice (authors' test). The most striking aspect of this pottery is the wide range of pots which bear decoration rather than the decoration itself. That this range was perpetuated over large distances is surprising. Large funnel beakers whose size suggests that they had a domestic function were found at Havelte D53, with a rim diameter of 28 cm and a height of 30 cm, at Exlo (No. 52), with rim diameter of 31 cm and height of 27 cm and fragments at Heveskesklooster G5, with a rim diameter of about 29 cm (unpublished). More frequently found are the relatively thick-walled funnel beakers with rim diameters of c. 20 cm (Emmen D40, Nos 21, 24 and 28, and 35; Glimmen G2, Nos 97 and 99 (Brindley, 1986a: fig. 31), Hooghalen D54b/c, Nos 182, 184 and 185 (Brindley manuscript, 1993), at least three further examples at Heveskesklooster G5. Neck sherds of similarly large funnel beakers have also been noted at Papeloze Kerk D49 (Brindley manuscript, in prep.).

These two aspects (the inclusion of pottery displaying a wide range in competency and skill together with undecorated bowls and very large beakers) suggest that the pottery stems from the personal property of individuals. It is questionable whether much of it is ceremonial in origin. Settlement pottery from Midlaren, Elspeet and Laren (Bakker, 1979: figs B1, B6 and B7; B9 resp. B10) does not appear to include significantly more decorated pottery of lower quality.

It is usually assumed that the quantity of pottery in some of the western *hunebedden* is the result of long and intensive use. The large inventories of Emmeln (1220

pots) and Havelte D53 (660 pots) are frequently cited as examples of this. However, a recent survey has shown that at individual *hunebedden* neither protracted use of the chamber nor necessarily intensive use can be assumed and is probably not the rule.

In the following discussion, estimates of duration are based on the dates indicated for each horizon by Brindley (1986b: pp 104-106). Based loosely on the amount of typological development within a horizon and not solely on the quantity of material known, the following time brackets have been calculated.

Horizon 1	c. 50 years	3400-3350 BC
Horizon 2	50 years	3350-3300 BC
Horizon 3	100 years	3300-3200 BC
Horizon 4	150 years	3200-3050 BC
Horizon 5	100 years	3050-2950 BC
Horizon 6	50 years	2950-2900 BC
Horizon 7	c. 50 years	2900-2850 BC

Although crudely arrived at, given the detail of the typological developments involved and the constraints of the dates for Horizons 1, 5 and 7, it is very likely that these provide a strong chronological framework. It is possible that Horizons 1 and 7 may extend slightly beyond the earlier and later limits respectively. In the following discussion, it is assumed that this chronology is accurate enough to allow for the dating of the construction and use of individual *hunebedden* based on the type of pottery found in them.

Of the three inventories catalogued above, only D30 and D40 are sufficiently well-preserved for a general reconstruction of the manner and frequency with which they may have been used. In addition, the following inventories are considered to be relatively complete: Emmeln, Gross Berssen, G1, G2, D9, D32a, D9, D43 and D53 and cited in a more general manner, D28, D43a, D32d and O2. The finds from D54b and D54c are also included although the two inventories have been mixed up since being excavated.

It is clear that *hunebedden* in continuous use over long periods of time (i.e. more than three of the seven horizons of ceramic development) are the exception rather than the rule. Since *hunebedden* ceased to be constructed during Horizon 4 (or possibly at its start), it is technically possible for each to have been in use during four horizons or a minimum of 350 years.

Of the *hunebedden* surveyed here:

Emmeln 2 is the best known exception with over 1220 identified vessels, 959 of which are illustrated in the excavation report. The majority of the illustrated pottery can be easily assigned to Horizons 3 (early) to 5 (including quite late looking bowls) with a small quantity indicating Horizons 6 and 7;

Gross Berssen 7. The catalogue indicates Horizons 3-4 and a few Horizon 5 pots, all in the Heek-Emmeln Style.

Noordlaren G1. The majority of the pottery from this *hunebed* belongs to only two, separate, horizons. The first period of use is shown by the Horizon 3 pottery, including some early looking vessels and some late Horizon 3/early Horizon 4 pots. There is one Horizon 6 pail. The second period of use occurred during Horizon 7;

Glimmen G2. This *hunebed* was constructed at the very end of Horizon 2 and used continuously until the quite late during Horizon 5. It was used once during Horizon 6 and for re-used during Horizon 7 for a second period;

Annen D9. This *hunebed* was possibly constructed during Horizon 3 (2 sherds which may be residual as they suggest a fairly early stage in that horizon), but was more probably constructed at the beginning of Horizon 4. After Horizon 4 it was apparently used once or twice during Horizon 5;

Odoom D32a. This *hunebed* was in use throughout Horizons 3 and 4. It was abandoned at the beginning of Horizon 5 which is represented by a small number of vessels (not Anlo-Uddelermeer Style);

Emmeln D43. The inventory consists of the now unseparable contents of two chambers within one kerf. Apart from the Horizon 1 sherds in a pit outside the burial chambers, the inventory includes a small amount of Horizon 2 pottery, and a very small amount of Horizon 5 (Heek-Emmeln Style) pottery. The majority of the pottery belongs to Horizons 3 and 4;

Havelte D53. The inventory includes a small quantity of mature Horizon 3 pottery and was in continuous use up to and including Horizon 7;

Buinen D28. The inventory includes some early Horizon 3 pottery. The majority of the pottery belongs to late Horizon 3 and early Horizon 4. There are also several Horizon 5 pots. There are no tureen-amphorae or bowls with block patterns which indicate the more mature Horizon 4 Style.

Emmeln D43a. The inventory includes one Horizon 1 jug, possibly of a late form (no decoration below the shoulder). According to Molema (pers. comm.), 4 pots could be assigned to Horizon 2, 13 to Horizon 3 and 18 to Horizon 4, with a single pot attributable to Horizon 5;

Odoom D32d. Includes several developed Horizon 2 pots, and a small number of Horizon 5 pots (both Heek-Emmeln and Anlo-Uddelermeer Styles). The vast majority of the pottery belongs to Horizons 3 and 4. There is one Horizon 7 bowl (B. Kamlag, pers. comm.).

Mander O2 has pottery exclusively of Horizons 3 and 4 (A. Ufkes, pers. comm.).

Hooghalen 54b and c. The pottery from the two *hunebedden* cannot now be separated; however, the combined assemblage includes a small quantity of Horizon 2 pottery, and spreads across Horizons 3 and 4. There is a limited amount of Horizon 5 pottery, a few examples of Horizon 6 pottery, sufficient only to show sporadic visits, and a second phase of activity represented

by a relatively large quantity of Horizon 7 pottery. The combined assemblage also shows at least one monument was not in continuous use and the other monument was either abandoned fairly early (i.e. around Horizon 5) or also re-used after abandonment (Brindley manuscript, 1993).

Against this background, the single horizon assemblage of D40 no longer appears in any way unusual and the relatively early abandonment of both D40 and D30 can be easily paralleled at other monuments.

The sometimes dramatic figures given for the number of pots in individual *hunebedden* can be seen to be relatively consistent when viewed against their likely timescale. Excluding D43 and Hooghalen D54b/c and including only the episodes of concentrated activity, approximate figures for the duration and use of the above *hunebedden* can be found in the table below.

Taken by themselves, these figures suggest that whereas *hunebedden* may have been used on a regular basis, they were not used on a frequent basis, not even, apparently, on an annual one. The 'service sets' (Brindley, 1986a: p. 35) indicate that more than one pot might be deposited at once (i.e. assuming that the 'service sets' are not the result of pots being placed together on several occasions as the products of a single potter deposited at a favoured or 'own' place within a communal tomb), and that as many as five or six pots might sometimes have been left in a single act. Assuming that this happened, the frequency of activity is likely to be even less than suggested by the table above and variation in the number of pots used on any one occasion is likely to cancel out any differences between the apparent frequency of activity between monuments as shown by the figures in the last column of the table.

No 'service sets' were recognized at either D30 or D40 (the two Horizon 1 Exlo pails are not considered in this context). Examining the pottery from these two sites from a stylistic point of view, however, it is noticeable

that groups of pots seem to share a particular stage of development even within a Horizon. It is possible to distinguish putative groups in D30 as follows (not all the pottery can be placed in groups):

- Horizon 2
 – Nos 27, 54
 – Nos 4, 28, 29
 Horizon 3
 – Nos 5, 7, 9, 12, ?30, 55, 56
 – Nos 8, 32, 33, ?15
 – Nos 6, 34, 36
 – Nos 10, 42 (43-45)
 – Nos 16, 37
 – Nos 11, 40, 41.

This approach is less successful when applied to the pottery from D40, partly due to the more fragmented condition of the pots and partly because the pottery stems from a shorter period and therefore displays less typological variation. However, suggested groups amongst the pails and bowls are

- Nos 5, 7 (?8)
 – No. 1
 – Nos 3, 4
 – Nos 9, 11
 – Nos 2, 6.

This apparent stylistic clustering may be the result of groups of pots being deposited at intervals of time.

It appears that D30 and D40 were used on a possibly infrequent basis for a limited amount of time and went out of use at a relatively early stage within the chronological framework of the TRB. In both these aspects, they are well within the behaviour indicated at other *hunebedden* by the range of pottery they contain.

The relevance of these conclusions is not limited to the contents of the individual *hunebedden*. Because of their prominence in the landscape, *hunebedden*, despite the distinct factors which limit their distribution in the Dutch landscape, are frequently discussed in relation to

<i>Hunebed</i>	Horizon(s)	Years	Pots	Per year
Emmeln 2	early 3, 4, 5, 7	400	1220	3
Gross Berssen 7	3, 4 and part of 5	275	325	1.2
Noordlaren G1	3, 7	300	150	0.5
Glimmen G2	(2/3), 3, 4, 5, 7	400	400	1
Annen D9	4	150	80	0.5
Odoorn D32a	3, 4	250	160	0.6
Havelte D53	3 (mid), 4, 5, 6, 7	400	660	1.7
Emmen D40	3	100	80	0.8
Exlo D30	1, 2, 3, part of 4	275	80	0.3
Buinen D28	3, 4	200	-	-
Emmen 43a	1, 2, 3, 4	350	-	-
Odoorn 32d	2, 3, 4, 5	400	-	-
Mander O2	3, 4	250	-	-

settlement distribution. Bakker has already indicated that the Hondrug distribution is more likely to be related to roads and soil types than to the monuments functioning as territorial markers (Bakker, 1980). However, it may be possible to relate the changing fortunes of individual *hunebedden* to changes in territories. On the basis of the chronology of the pottery, it seems probable that only during a very limited time during the later part of Horizon 3 and the earlier part of Horizon 4 were all *hunebedden* in use. By plotting *hunebedden* use by horizon it may be possible to come up with a picture of changing land ownership. Even during the period of maximum activity (late in Horizon 3), some *hunebedden* were on the wane while others were only being constructed or were still in their earliest stages of use.

6. ACKNOWLEDGEMENTS

We wish to thank Mrs J.C. Kat-van Hulst (O1), Miss M.A. Weijns (O1, D30) and S.W. Jager (D40) for the illustrations of the finds, and J.H. Zwier for (re)drawing the plans and sections of these *hunebedden*. We are most grateful to the heirs van Karnebeek, owners of the De Eese estate and their local manager A. Boschloo for permission to re-excavate O1; to the Province of Drenthe represented by Ir. B. Volbeda and S. Smid of Provinciale Waterstaat for permission to re-excavate D30 and to the State, represented by Ir. J.J. Kalb and L. Dijk of Staatsbosbeheer Drenthe for permission to re-excavate D40.

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