Journal of Danish Archaeology vol. 3, 1984, pp. 63–82

Hanstedgård

A Settlement Site from the Funnel Beaker Culture

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The settlement site dealt with in this essay should be viewed in relation to a settlement archaeological program currently being carried out in Eastern Jutland. The program is concerned with the organization and development of TBK society (Madsen 1982). The excavation of the Hanstedgård site revealed undisputable traces of a hut, even if its D-shaped form may seem odd. Distributional differences between tool-types on the site are also noted, and their significance in terms of site organization is discussed in the essay. Also a survey of house claims in the Nordic TBK is included, with a critical assesment of these claims.

SITE DESCRIPTION

The settlement site of Hanstedgård is situated immediately north of the town of Horsens in eastern Jutland in a tunnel valley. For the greater part of the Atlantic and Subboreal periods the valley contained an eight kilometer long inlet of the Horsens Fjord to which it was connected by a very narrow sound (Fig. 1).

The settlement was situated on a 300 by 170 m. large and 6 m. high hillock surrounded by water on three sides and low marshy areas on the fourth side, in effect making it an island (Fig. 1). The subsoil of this island consisted of gravel and sand.

Most of the hilllock was removed and used for road construction during the seventies, leaving only the edges of the island partly undisturbed. It was here along the northern edge of the island that the excavation was carried out during the spring of 1983 as part of a rescue program in connection with the laying down of gas pipelines. The excavation was directed by Palle Eriksen from Vejle Kulturhistoriske Museum and carried out in cooperation with Institute of Archaeology, University of Århus. Erik Dalby, Frank Grønning and Chr. Åbo Jørgensen participated in the excavation. The finds are kept at Vejle Kulturhistoriske Museum (J.nr. VKH M998).

An area of 750 sq. m. was stripped by machine, revealing various pits, some modern disturbances and a 42 m. long and 4–10 m. wide depression filled with a grey-black, humus-rich material (Figs. 2; 3). Approximately one third of this depression was excavated, revealing further pits, some ard furrows and traces of a hut. Apart from one piece of pressure flaked flint from the top of the depression, all datable material from all features can be attributed to MN I. In general, the pottery suggests that we are dealing with an early level of the MN I with a mixture of MN Ia and MN Ib traits in the individual features.

The depression

Although rather deep in some places, the depression was a natural formation, and evidently it was fully open at the time of the settlement. Along its bottom a 15–30 cm. thick, grey-black, humus-rich soil (buried Ah horizon) was found (Fig. 4), containing fair amounts of settlement debris evenly distributed from top to bottom. The average density of worked flint was 32 pieces per sq. m. and of pottery 200 g. per sq. m., measured in those areas where the deposit was completely preserved. Above this Ah horizon was a 10 cm. thick deposit of light grey-brown sand (Fig. 4), partly sealing off the lower deposit from the modern plow soil. The formation of this deposit was probably the result of agricultural activities higher up on the hillock. We are not so fortunate as to be able to date this activity, but it may well have happened in prehistoric times in connection with the initial ploughing evidenced by the ard furrows.

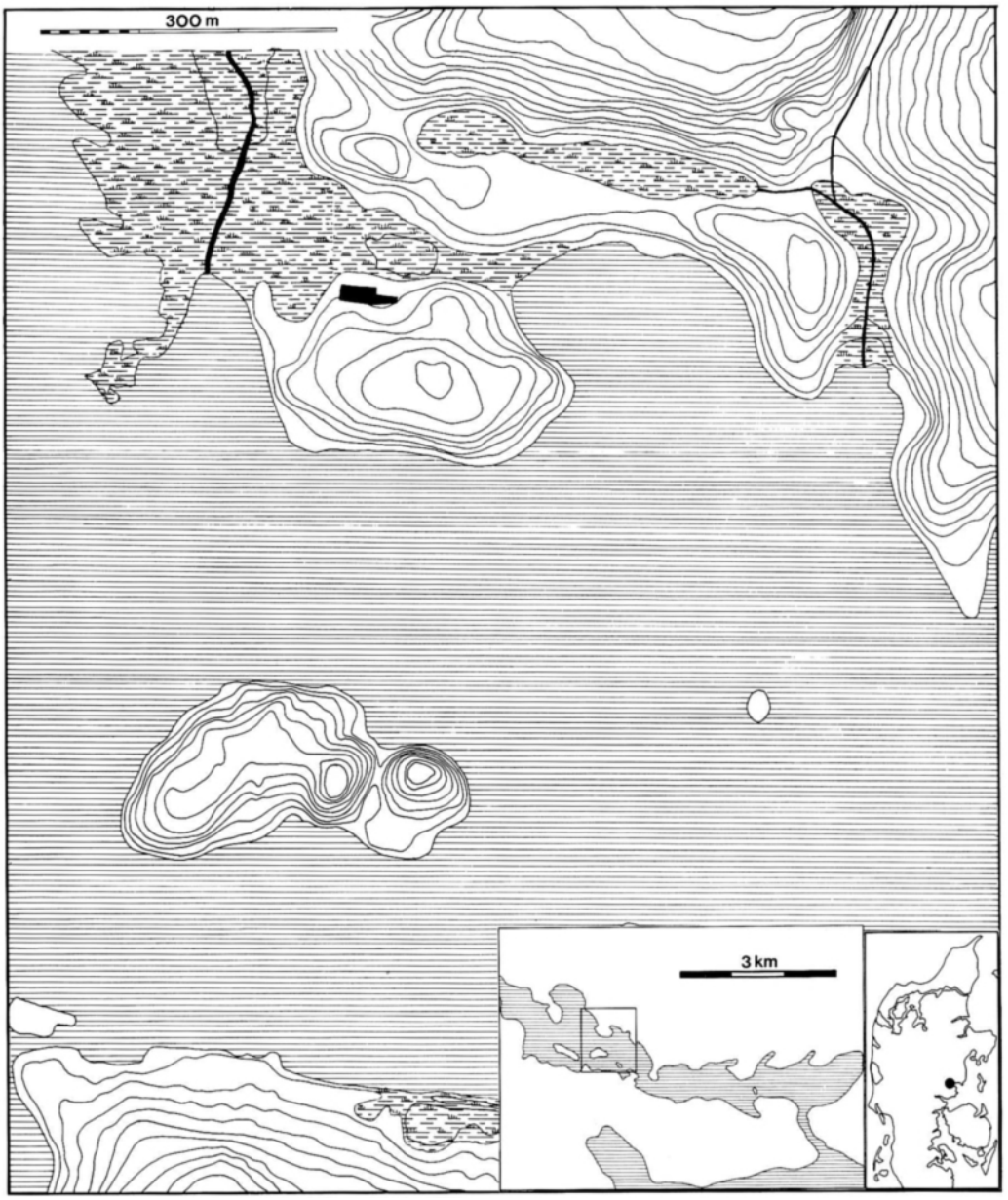


Fig. 1. Map showing location of the Hanstedgård site. Contour lines are at one meter intervals. The excavation area is shown as a black polygon.

Ard furrows

Ard furrows were uncovered in a 3 m wide trench in the middle of the depression (Fig. 3), and in the eastern end in the area of the hut. The main direction of the furrows was east-west, along the axis of the depression, but a few earlier, non-parallel, generally north-south directed furrows were also seen. The explanation for this pattern seems to be that some initial haphazard ploughing took place to rip up the roots on the cleared land before a systematic ploughing was carried out with parallel, 5–15 cm. wide furrows placed with an average density of 4 per m. The ard furrows definitely postdate the hut and thus probably the settlement as a whole. However, it is not possible to say how much later, and this phase of cultivation may date to any period later than the MN I.

Fig. 2. The excavation area seen from the west.

Pits

Twenty-three datable pits were excavated. They are of two very different types.

Type 1 (14 examples) is round-bottomed with a width between 50 and 110 cm. (average: 82 cm.) and a depth between 5 and 34 cm. (average: 19 cm.). The fill is in most cases homogeneous with a grey-black colour. The amount of cultural debris in the pits of this type is moderate, with an average of 40 pieces of worked flint and 800 g. of pottery.

Type 2 (nine examples) is flatbottomed with vertical sides (figs. 5; 6). The width lies between 64 and 180 cm. (average: 102 cm.) and the depth between 47 and 100 cm. (average: 64 cm.). The fill in this type of pit follows a very distinct pattern. At the bottom is a 10–20 cm. thick deposit of charcoal-coloured, black sand. It goes from one side of the pit to the other and covers the bottom completely, leaving no doubt that it is a primary deposit related to the function of the pit. Very often, the sides of the pits have slumped in immediately after the primary deposition, and mostly it is impossible to separate this slumped material from the subsoil. The result of this is a queer, strangulated appearance of the pits when seen in section. The primary deposits and the slumped subsoil were subsequently covered by a grey or grey-black layer. In a couple of the deeper pits a new, black, charcoal-coloured, primary deposit was formed before the final filling, which in all the pits takes the form of a grey-black, humus-rich soil of the same general appearance as the buried Ah horizon in the depression. The pits contained large amounts of debris, with 160 pieces of worked flint and 2600 g. of pottery as an average.

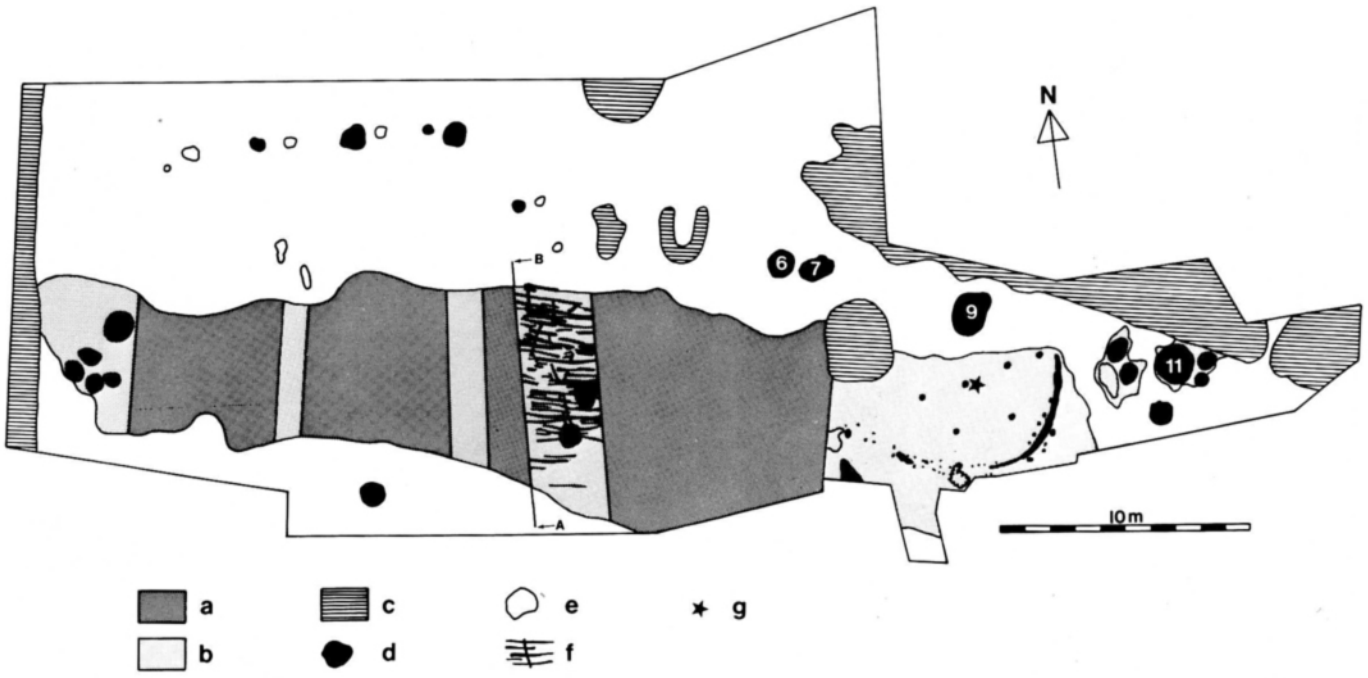


Fig. 3. General plan of the excavated area. Legend: a: unexcavated parts of the depression. b: Excavated parts of the depression. c: Disturbed areas. d: Dated pits. e: Undated pits. f: Ard furrows. g: Fireplace in hut. A and B refer to endpoints in the section fig 4.

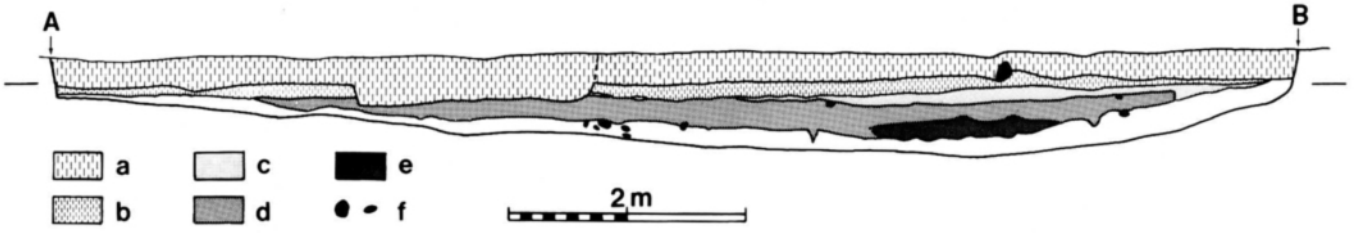
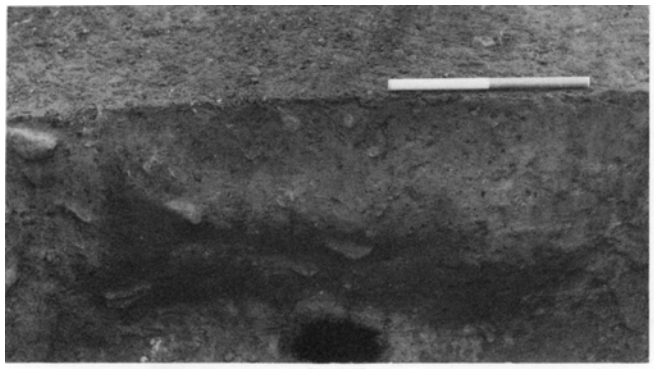


Fig. 4. Section through the depression. a: Modern plough-soil and disturbances. b: Plough-soil of older date. c: Light, grey-brown sand. d, e: Humus-coloured, grey-black sand (Ah horizon). f: Stones. Endpoints A and B refer to plan fig 3.

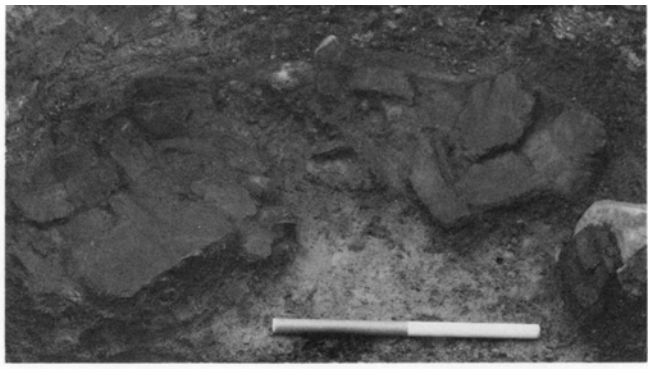
The two types of pits are differently distributed within the excavated area (Fig. 15). Most of the type 1 pits are found to the west, while the type 2 pits are concentrated to the east, around the hut. The morphological differences between these two types must be related to functional differences. The dark, charcoal-coloured layer at the bottom of type 2 pits shows the use of fire in connection with these pits. Although it does not seem possible to attribute a precise function at the moment, it seems reasonable to suggest that they had something to do with food handling, whether roasting, other types of food preparation, or some sort of food preservation like smoking. There is no clue to the function of type 1 pits.

The hut

In the eastern, flat bottomed part of the depression, the traces of a hut were uncovered (Fig. 7). They showed up in the yellow subsoil after the removal of 6–22 cm. of buried soil. Ard furrows appeared as the covering soil



a



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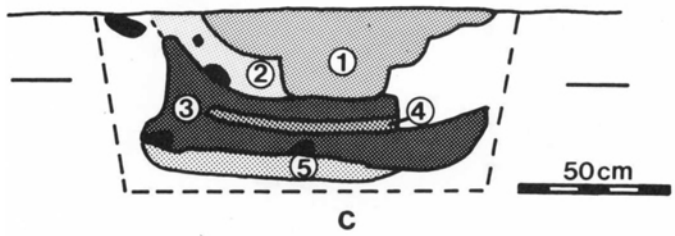

c

Fig. 5. Pit 6. a, c: Photo and drawing of section. b: Sherds from a funnel beaker (Fig. 11a) found at the bottom of the pit. Description of layers in c: 1: Grey-brown sand. 2: Light, grey sand. 3: Black, charcoal-coloured sand. 4: Grey-black sand. 5: Grey sand.

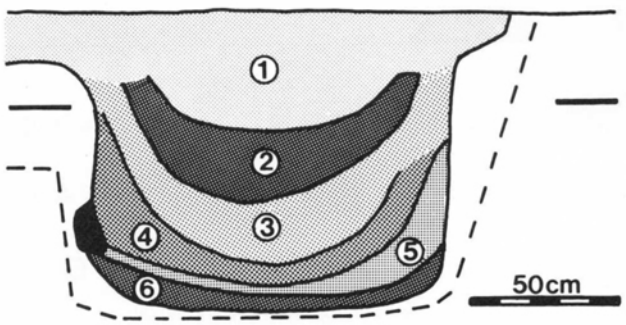

Fig. 6. Pit 11. Photo and drawing of section. Description of layers: 1: Grey-black, humus-coloured sand. 2: Black, charcoal-coloured sand. 3: Dark, grey sand. 4: Grey-black sand. 5: Grey sand. 6: Black charcoal-coloured sand.

was removed, and it was noted that they were definitely later than the traces of the hut.

The plan of the hut was D-shaped, measuring 9 by 5 m. with the straight side wall facing north. This wall showed up as a line of 4–5 regular post holes. Two holes suggesting the existence of roof-carrying posts were located in the interior, and another four post holes were found in the semicircular wall. One of the latter stood in line with the posts of the northern wall, two formed a line together with the roof-carrying posts in the interior, parallel to the northern wall, and the fourth was situated just outside the semicircular wall to the south.

The semicircular wall consisted on the west of two parallel rows of stakes and, on the east, of a shallow foundation trench, in the bottom of which were a few stake holes. On both sides of this foundation trench were rows of shallow post holes parallel to the wall.

The entrance to the hut seems to have been from the

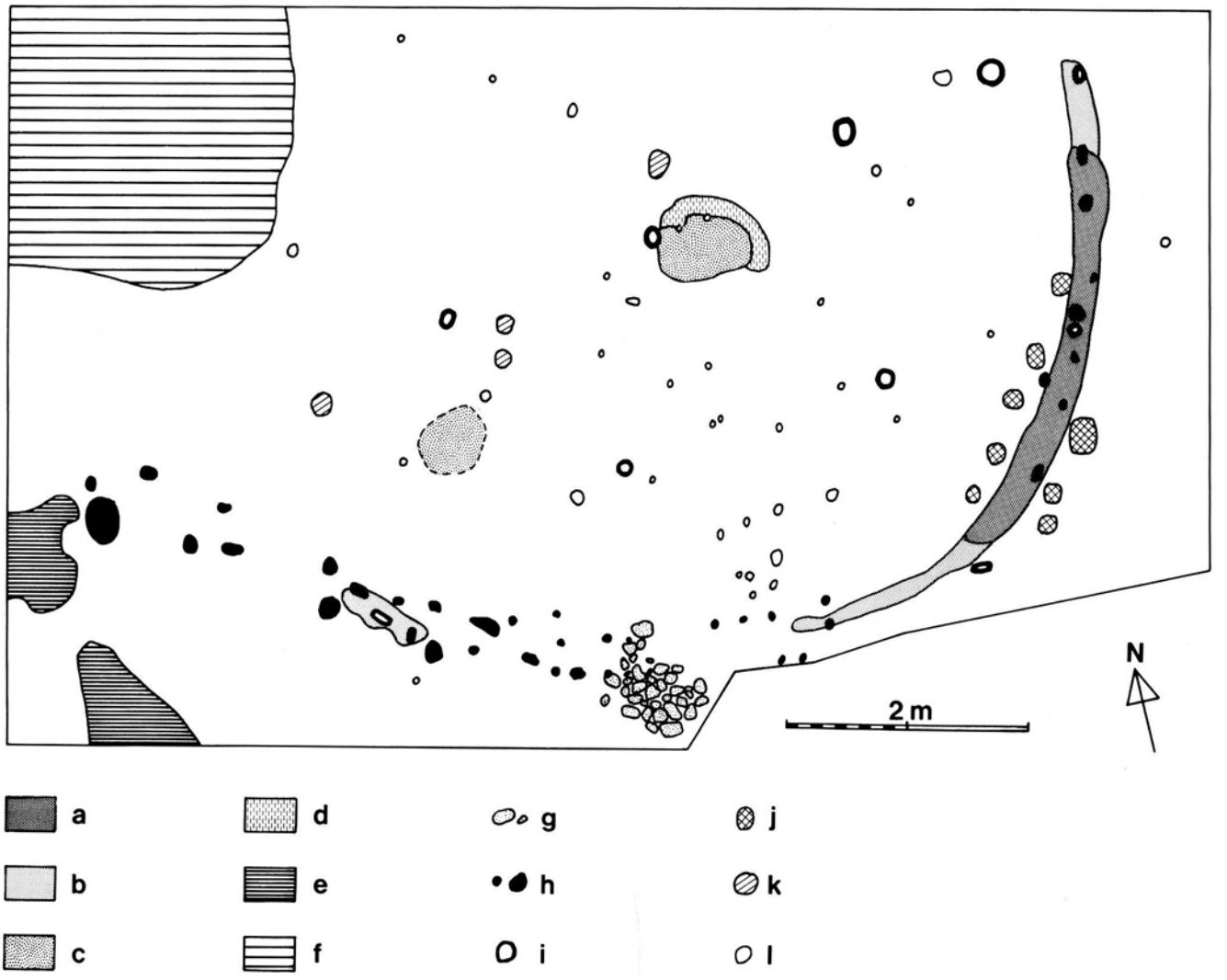

Fig. 7. Plan of the Hut. a: Foundation trench of grey-black colour. b: Foundation trench of grey colour. c: Red-brown sand (fireplace). d: Dark, grey-brown sand. e: Pits. f: Modern disturbances. g: Entrance paving. h: Stake holes in semicircular wall. i: Postholes > 30 cm. deep. j: Shallow postholes adjacent to foundation trench. k: Postholes < 30 cm. deep. l: Various stakeholes.

south, where a stone paving marks a break in the wall. A fireplace was situated adjacent to the northern wall, and the presence of another was indicated in the western part of the hut. The original floor level was at least 2 cm. above the level of the subsoil, to judge from fireplace and entrance paving. In the following detailed description of the constructional features all measures of depth are given from this conservative estimate of the original floor level.

The semicircular wall. This wall was 12.2 m. long and consisted to the east of a 5.8 m. long shallow foundation trench which was 10–30 cm. wide and 5–10 cm. deep, with a rounded bottom (Figs. 7a, b; 8a). The fill of the trench was grey-black in the middle but became lighter towards both ends. The three regular post holes associated with the trench were 33, 37 and 57 cm. deep. The eight stake holes found beneath the dark area in the middle of the trench had an average depth (below floor level) of 15.9 cm. A row of five possible post holes (13, 13, 15, 16 and 21 cm. deep) was seen along the inner edge of the trench, and a row of three possible post holes (17, 16 and 13 cm. deep) was seen along the outer edge of the trench (Fig. 7j). To the west of the founda-

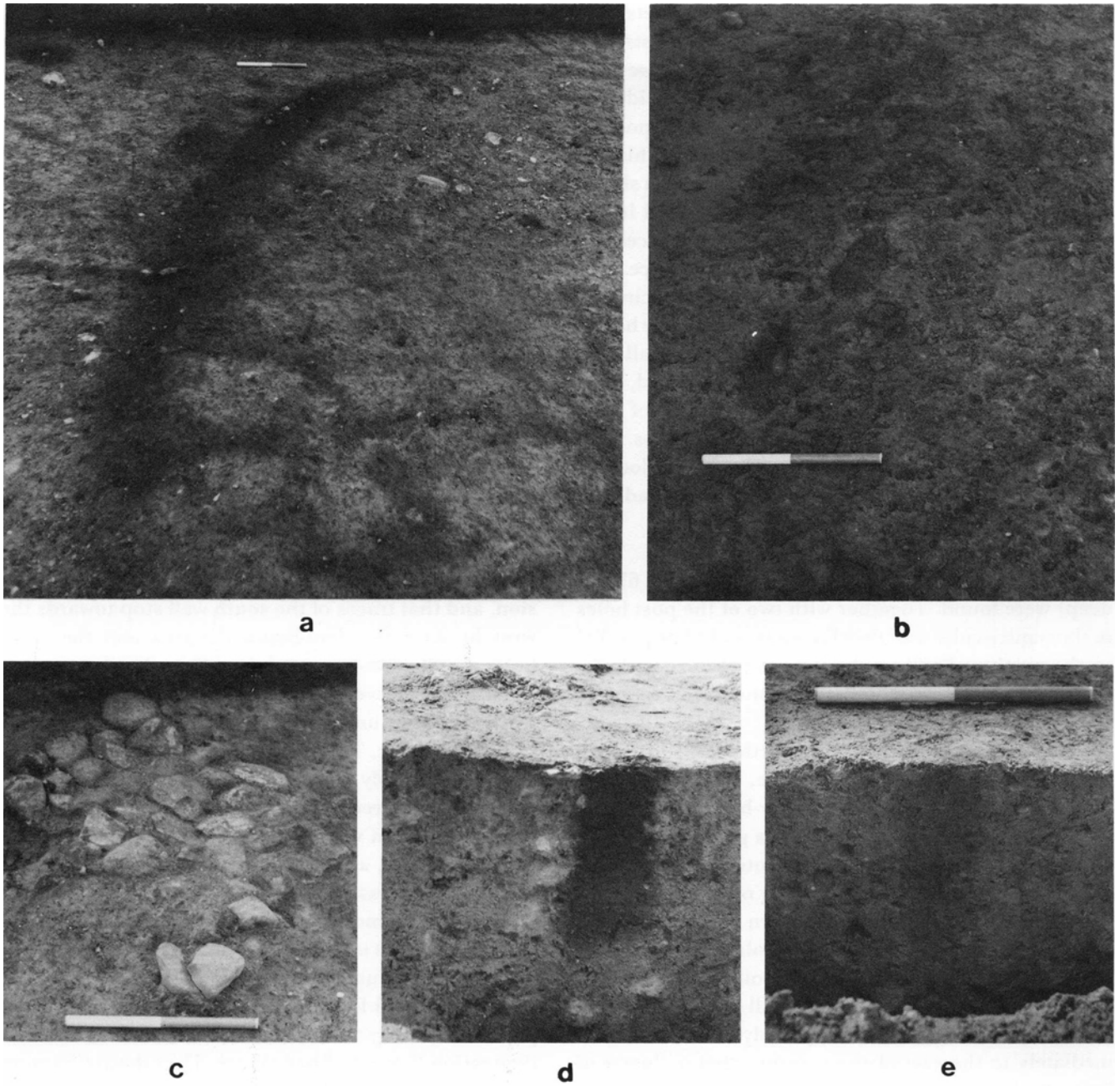

Fig. 8. Photos showing details of hut. a: Foundation trench seen from north. b: Stakeholes in western part of semicircular wall seen from west. c: Entrance paving seen from north. d: Posthole adjacent to fireplace, 33 cm deep. e: Posthole 1.7 m west of fireplace, 33 cm deep.

tion trench came 6.4 m. of wall constructed with two parallel rows of stakes irregularly placed some 30–40 cm. apart (Figs. 7h; 8b). A total of 30 stake holes were recognized. They had an average depth of 14.5 cm. The one regular posthole in this part of the semicircular wall was 32 cm. deep. A 90 cm. break in the double line of stakes was partly filled out by a paving of fist-sized stones, that undoubtedly marks the entrance to the hut (Figs. 7g; 8c).

The north wall. Four evenly spaced post holes (46, 46, 33 and 33 cm. deep, Fig. 8d, e) and a shallow assumed post

hole (20 cm. deep) form a straight line that meets both ends of the semicircular wall. This line of posts presumably indicates the north wall of the hut. However, a 29 cm. deep posthole found half a meter outside the middle of the wall may indicate a replacement post for the one standing at the edge of the fireplace. This one certainly must have been scorched by the fire as shown by the heavy, black, charcoal-colour of the fill in the post hole (Fig. 8d, compare with 8e). The replacement must have given the wall an angular appearance. The junction between the north wall and the semicircular wall is well defined at the east corner, where we have a regular posthole at the end of the semicircular wall. The junction at the western corner, on the other hand, lacks constructional evidence. A reconstruction of this corner would certainly be somewhat ambiguous. Two possible post holes (20 and 19 cm. deep) were located just inside the wall, but it is uncertain if they had anything to do with the wall.

The interior. In the interior two post holes (34 and 67 cm. deep) were found. Together with two of the post holes in the semicircular wall they form a straight line parallel to the north wall. These four posts together with the posts of the north wall, definitely constitute a basis for the roof construction.

The fireplace adjacent to the north wall showed up very clearly as a 55 by 80 cm. large, oval spot of red-brown sand with a band of dark, grey-brown sand partly enclosing it. The fireplace itself was gone, but the red colouring that continued 8–10 cm into the subsoil was clear evidence of an intense heating of the soil. Traces of another fireplace in the western part of the hut showed up as a weaker, red-brown colouring extending only a few centimeters into the subsoil.

There was a general scatter of small stake holes in the interior of the hut, but it was only in an area immediately to the east of the entrance that a cluster of holes gave the impression of a deliberate pattern. No function, however, could be attached to these stake holes.

Reconstruction. Even though the traces of the hut at Hanstedgård represent the least ambiguous evidence so far for a dwelling in the Nordic TBK (for detailed discussion see below) a reconstruction is not self-evident.

The most likely suggestion for a reconstruction is based on the apparent D-shape of the traces revealed, and, as the above description has already shown, this is the way we have decided to look at the evidence. We would suggest that the D-shaped hut had a roof construction based on two straight rows of posts. Each of these must have carried a beam on which the roof rested. The semicircular wall was probably a quite low wattle and daub wall woven between the two rows of stakes. The straight north wall, on the other hand, must have been comparatively more solid and probably higher, making the roof slope towards the semicircular wall. The actual construction of the wall is more in doubt, but it may also have been a wattle and daub construction.

Another possibility for a reconstruction is to view the foundation trench as representing an end wall in a rectangular house of which the stretch of wall marked by the double row of stakes constituted a part of the south wall, while the opposite wall is missing. In this proposed reconstruction, one would have to assume that all traces of this missing wall had been destroyed because it was outside the protecting layers of the depression, and that traces of the south wall stop towards the west because the depression deepens and the stake holes therefore do not reach into the subsoil.

This alternative explanation has two serious flaws. First, it is very unlikely that all traces of a north wall could disappear. The eastern end of the depression is very flat, and only a very few centimeters of subsoil can have been removed by ploughing where the wall should be. The junction with the end wall, especially, should have left traces, as it was actually under the covering soil of the depression.

Second, the most serious flaw relates to the roof-carrying posts. It is not possible to fit these into a logical pattern if we assume a rectangular house, whereas they fit the D-shaped form. Furthermore, the roof-carrying posts are so deep that they would be visible outside the depression if they had been there. Thus the assumption of a rectangular house goes against the evidence, and a D-shaped hut is clearly the most acceptable suggestion for a reconstruction.

FIND MATERIAL

Flints

A total of 2436 pieces of waste flint, 78 cores and 327 tools were uncovered during excavation.

Waste. The waste material consists mainly of rough, irregular flakes of varying size, often with cortex preserved. Regular blades are very rare.

Cores. All but five of the cores were irregular pieces with alternating striking directions from mostly unprepared, and, as it seems, randomly chosen platforms. Only four cores had a single, well defined, prepared platform suitable for the production of blades or bladelike flakes. The last core was a complete blank for a thin-butted axe.

Axes. There are seven fragments of axes and 49 pieces of waste flint showing traces of grinding. In all cases where the type of axe can be determined it is of the thin-butted type (Fig. 10).

Scrapers. There are 203 scrapers, or 62% of all tools (Fig. 9m–q). They are mostly wide flake scrapers, with the scraping retouch on the distal end. Only occasionally does the scraping retouch extend to the lateral edges. Most of the scrapers have a heavy, steep scraping edge, but there are also quite a few scrapers with very thin and flat scraping edges. It has not been investigated whether this difference implies a difference in function for wood and hide scraping respectively, as has been demonstrated through wear analysis on scrapers from Sarup (Jeppesen 1984). Only a very few scrapers can be termed blade scrapers and there is no clearcut dividing line between these and the flake scrapers.

Knives. Seventy knives have been identified amounting to 21% of the total tool assemblage (Fig. 9g, i–l). The identification of knives is based on the presence of retouch on the back and/or distal end, but it is known from wear analysis that suitable unmodified flakes quite often were used as knives. In the present material it is possible to observe wear with the naked eye on many such flakes, but unless a regular use-wear analysis is performed it is impossible to make a uniform separation of this type of knife from the waste material in general. Therefore, only morphological identification is used here.

Twenty-seven of the knives have a backing retouch, but no modification of the distal end. Twenty-nine knives have the distal end retouched transversely (10 pieces), obliquely (14 pieces), or in an arc (5 pieces), but have no backing. Fourteen

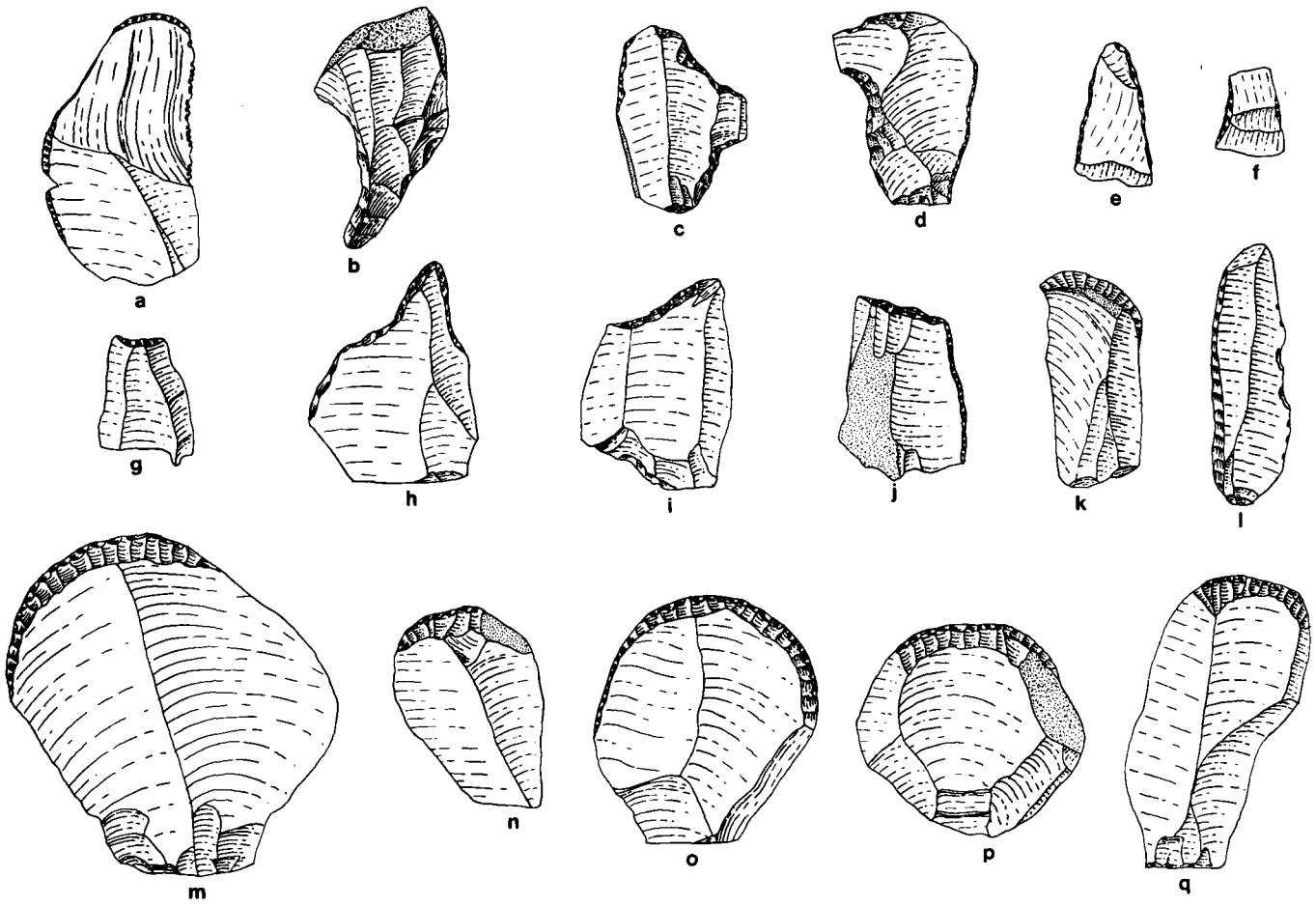

Fig. 9. Flint tools 1:2. a: Denticulate. c, d: "Skiveknive". g, i–l: Knives. e, f: Transverse arrowheads. b: Core drill. h: Flake drill. m–q: Scrapers.

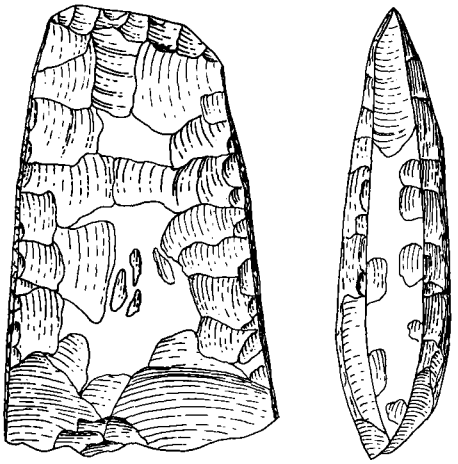

Fig. 10. Thin-butted axe of flint, 1:2.

knives have a combination of backing retouch and modification of the distal, end, either transversely (5 pieces), obliquely (8 pieces) or in an arc (1 piece).

One of the knives with backing retouch is obviously a sickle, as a heavy gloss can be observed on both the dorsal and ventral sides, extending well back from the edge.

Denticulates. Only two denticulates were found (Fig. 9a). The type is characterized by its very fine notching on a mainly concave lateral edge, while the back and the distal end may or may not be modified. On the Early Neolithic site of Mosegården the type made up no less than 22% of the tool assemblage (Madsen and Jensen 1984: 73, Madsen and Petersen 1984: 80). On the Fuchsberg site of Toftum from the transition between the Early and the Middle Neolithic their relative frequency is 9% (Madsen 1978: 173), and on the present site from MN I it is reduced to less than 1%. The type is so far not known from later TBK sites.

It was originally assumed that the denticulates were used as sickles, because of a very pronounced gloss that is often observed at the very edge of the blade (Madsen 1978: 173, Skaarup 1975: 63 and 138). However, wear analyses have shown that this gloss very likely has been produced by secondary processing of plant material and that it cannot be the result of the denticulates being used as sickles (Madsen and Jensen 1984: 76).

Transverse arrowheads. Seven transverse arrowheads were found. They are all rather large and generally have straight, converging lateral edges (Fig. 9e, f).

»Skiveknive«. Ten pieces were found of a peculiar type of tool traditionally termed »skivekniv« in Danish (= diskknife) (Fig. 9c, d). Neither in English nor in Danish is this an illuminating name. The type is characterized by approximately 1 cm. of sharp flake edge that is left between two concave retouchings. However, the function of this short piece of sharp edge as a knife has not been established. We need some wear analyses to determine the true function of this type of tool. The dating of »skiveknive« seems to be exclusively MN I, where we find them in great numbers at Troldebjerg (Winther 1935: 28). At Toftum from the Fuchsberg phase not one example is known among the many thousand tools (Madsen 1978), and they have not been reported from MN II contexts either.

Flake drills. Six drills produced on flakes were found (Fig. 9h). The drill point itself on this type is made by two concave retouchings. One of the drills has two drill points.

Core drills. Three heavy drills made from cores with long, three-sided drill points were present among the tools (Fig. 9b).

Various pieces. Twenty-six flakes had retouch on various edges, but could not be placed in any regular tool category.

Pottery

Some 3400 sherds or 39 kg. of pottery were uncovered during the excavation. Approximately two-thirds of the sherds were undecorated, while the rest bore some form of decoration.

Most of the pottery is very fragmentary, but from sherds in the pits a couple of pots have been restored completely, and large parts of others have been put together. The inventory is completely dominated by funnel beakers, which make up at least 90% of the pots. The only other forms present in some number are band-decorated bowls, pedestalled bowls and clay disks. A few undecorated semispherical bowls, a clay spoon and a shouldered vessel (Fig. 14r) are also present.

The fragmentation of the material makes it impossible to treat the individual pots as units of observation. We have to analyse the decoration zones separately, and regard sherds carrying information about a decoration zone as units of observation for that zone.

Rim decoration. The counting of rims is as far as possible based on an estimate of the minimum number of pots. Approximately 200 pots are present to judge from the rimsherds, and 121 of these or 61% have rims that are decorated, leaving only 39% as undecorated.

The most common rim-decoration is two or more parallel, incised, horizontal, zigzag lines (Figs. 11f; 12c; 13d; 14a, c, h, i, k). Frequently they are sloppily made and look more like bundles of parallel lines placed at varying angles to each other along the rim. 28% of the decorated rims carry this ornament alone, and on another 15% it is seen in combination with other ornaments.

Two or more parallel, chisel stabbed, horizontal, zigzag lines are found on 12% of the rims (Figs. 11d; 12d; 14n). The same relative frequency applies to rims with a horizontal row of vertical incised lines (Figs. 11c; 12a, b; 14h), and to rims with a horizontal row of round pits (Figs. 13a; 14g), whereas a horizontal row of vertically placed chisel stamps occurs on only 7% of the rims (Figs. 11b; 14f, k). These various horizontal rows are also the ornaments that we find in combination with

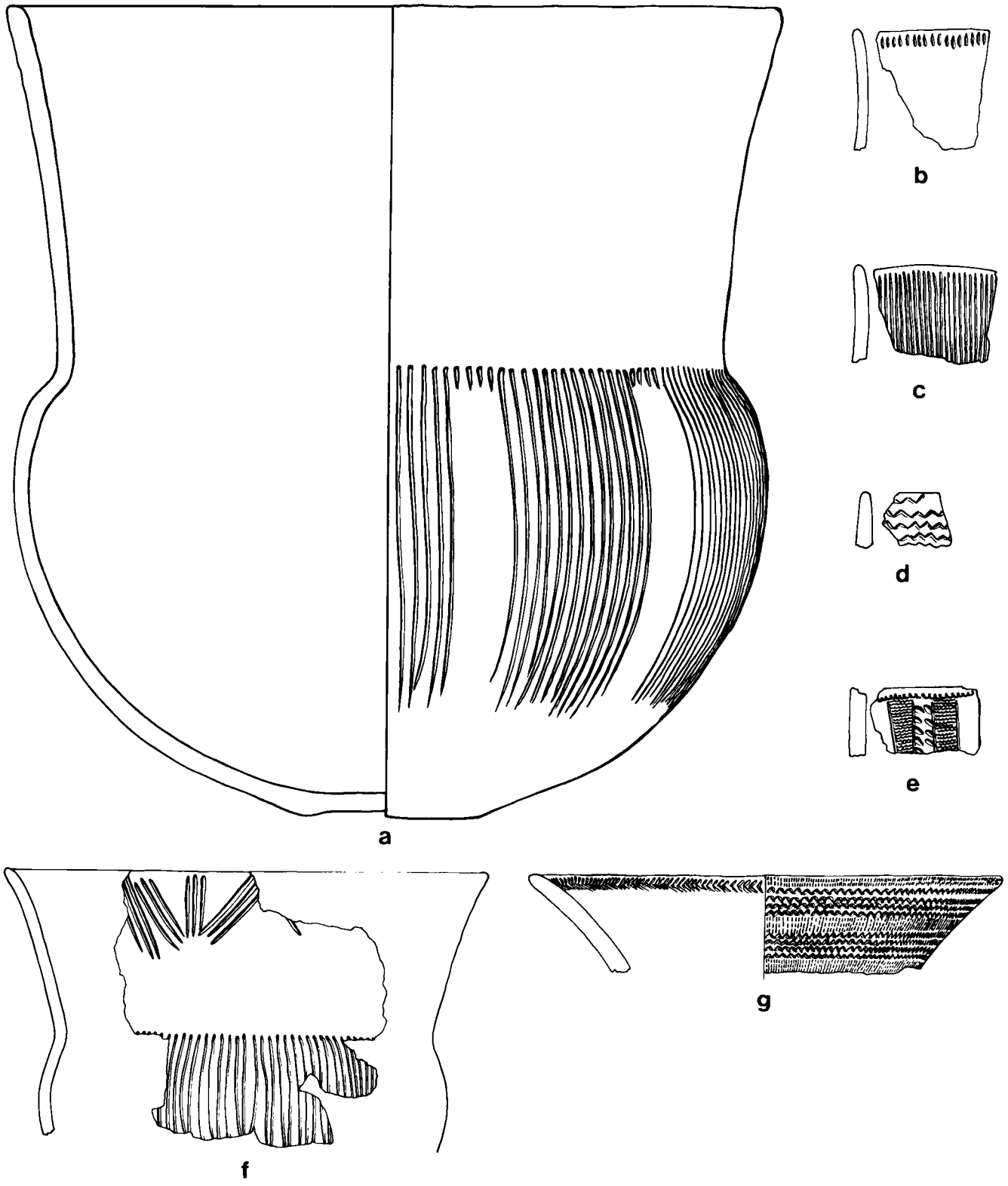

Fig. 11. Pottery from pit 6. Drawn by Elsebeth Morville. 1:3.

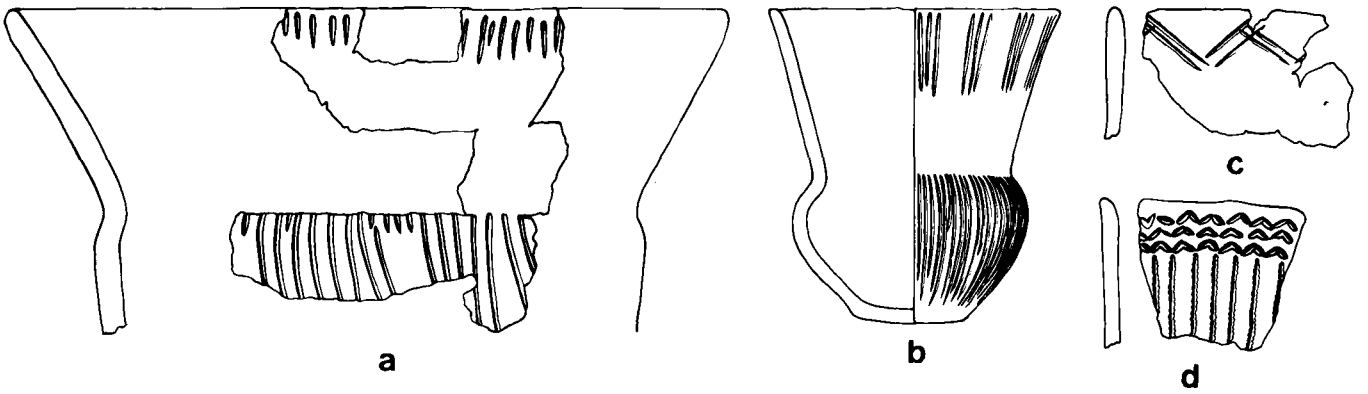

Fig. 12. Pottery from pit 7. Drawn by Elsebeth Morville. 1:3.

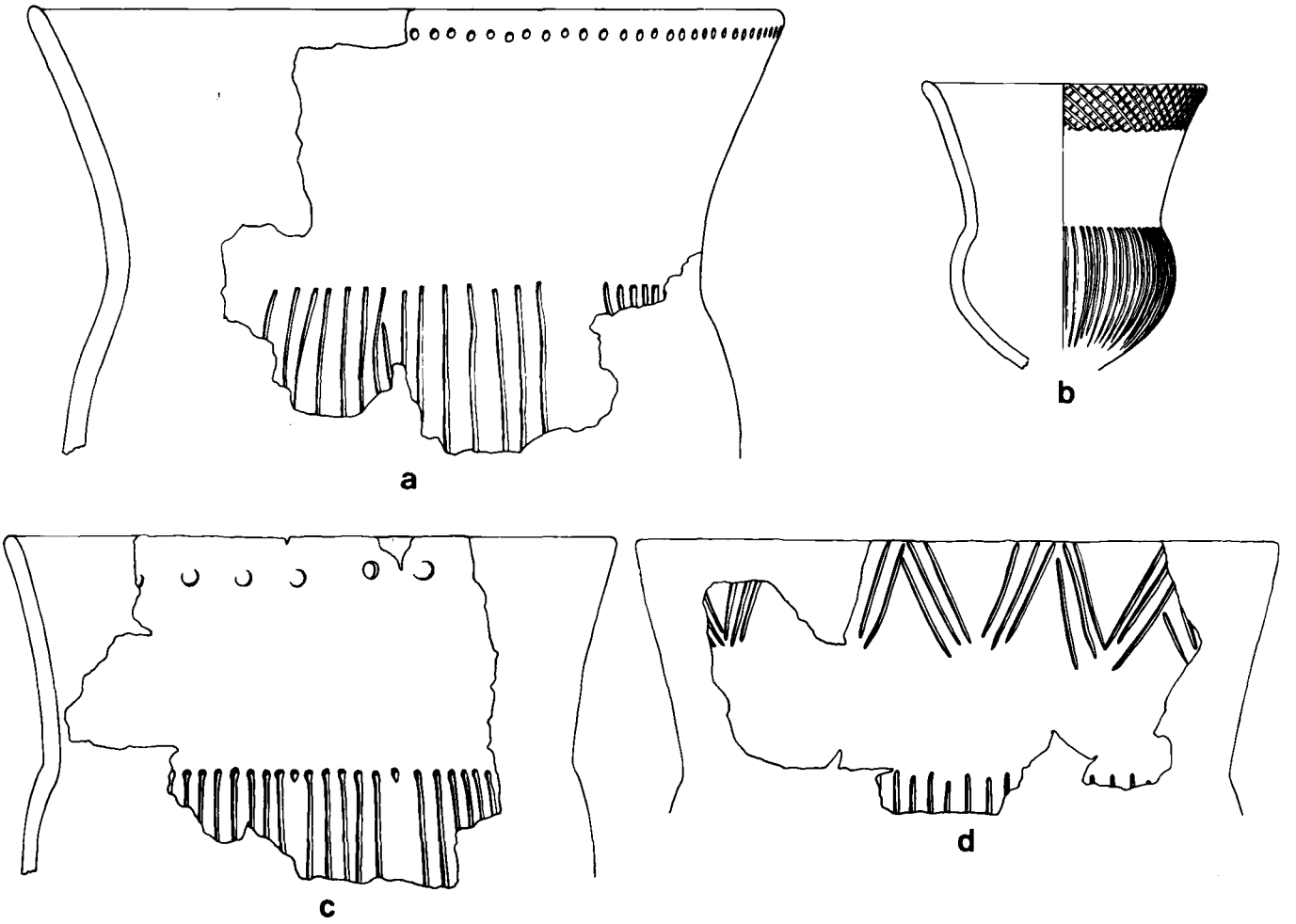

Fig. 13. Pottery from pit 9. Drawn by Elsebeth Morville. 1:3.

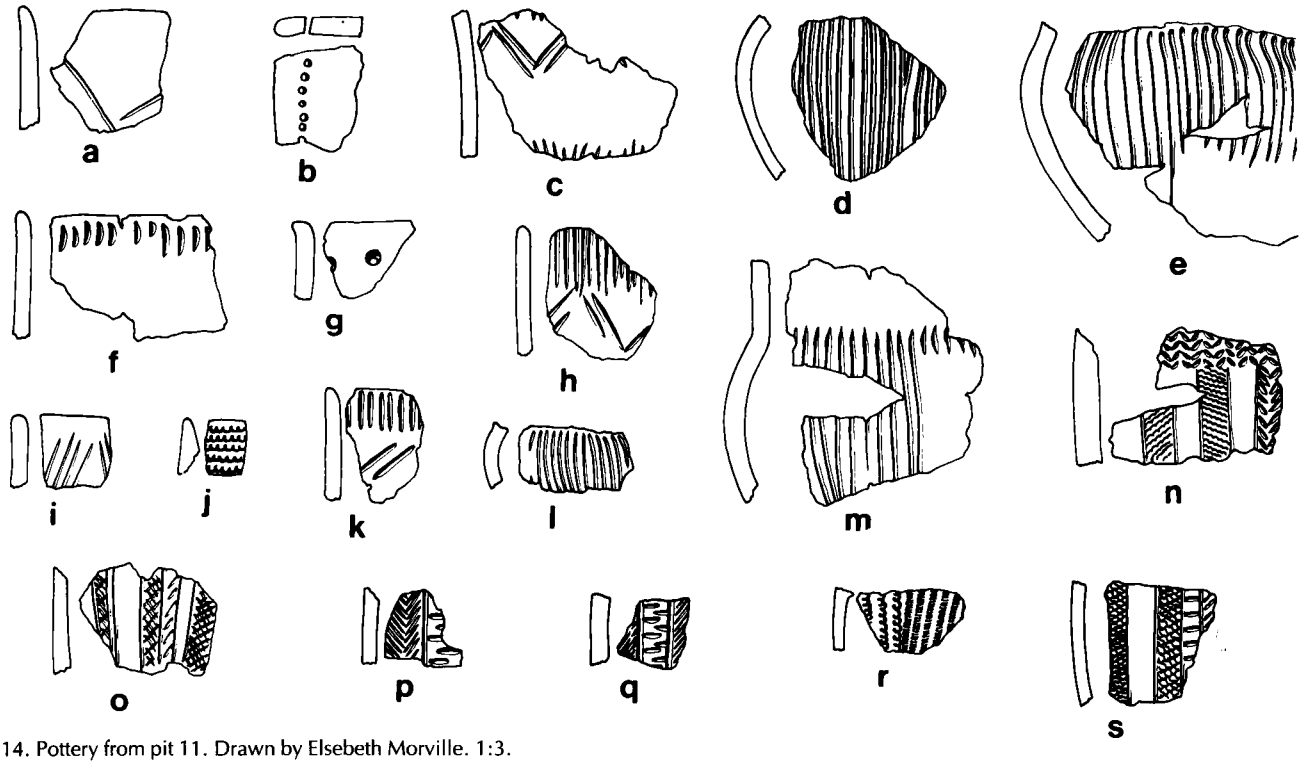

Fig. 14. Pottery from pit 11. Drawn by Elsebeth Morville. 1:3.

the incised zigzag lines, making up the above-mentioned 15% of rims.

The last group of ornaments to be mentioned is two or more horizontal arc stab lines directly beneath the rim (Figs. 11e; 14j). They occur on 7% of the rimsherds. The remainding 7% comprises rimsherds with miscellaneous ornaments (Fig. 13b, c).

Belly decoration. The most common belly decoration on the funnel beakers is long, incised, vertical lines placed continuously or in bundles (Figs. 11a, b; 12a, b; 13a–d; 14d, e, l, m). They comprise 97% of the belly decoration on this type of vessel, while 2% consists of vertical lines in whipped cord and 1% consists of various decorations like rows of stabs, ladder ornaments, or applied mouldings.

The band-decorated bowls have rather simple and narrow vertical bands, and they do not seem to have special bands beneath the lugs. 33% of the bands have a filling of horizontal or oblique hatching made by incised lines, stab-and-drag or impressions of chisel stabs, dentated stabs or cardium (Figs. 11e; 14n, o, q, s). Another 24% have cross hatching in these same techniqes (Fig. 14, s). 32% of the bands have two vertical rows of large round stabs, horizontal chisel stabs, or triangular stabs, arranged so that the stabs in the two rows alternate inside the band in a zipperlike fashion (Figs. 11e; 14p, q, s). The last 11% consist of elongated impressions (among others chisel stabs and whipped cord) filling the band with a herringbone pattern (Fig. 14n, p).

Pedestalled bowls. At least 12 pedestalled bowls are present in the material, mostly in a very fragmentary state. All but four of these are decorated with an all-over horizontal line decoration made with arc stabs. Two have a decoration alternating between horizontal zigzag lines made with chisel stabs and horizontal rows of vertical chisel stabs. One has an all-over decoration of horizontal zigzag lines made with chisel stabs, where the lines meet angle to angle forming a diamond pattern across the surface. The last bowl has a decoration alternating between three horizontal zigzag lines made with chisel stabs and a horizontal row of vertical dentated stabs (Fig. 11g).

Clay disks. Approximately 40 clay disks are present in the material. None of them have decoration on the edges, but two have an all-over decoration of imprints on both sides. The imprints are shallow finger impressions in the one case and small round stabs in the other. On a third disk a row of narrow holes pierced all the way through the disk is found along the edge (Fig. 14b).

SITE ORGANIZATION

Only a very small part of the total settlement on the island has been excavated, and, consequently, we can say very little about site organization. Nevertheless, there are obvious non-random distributional patterns

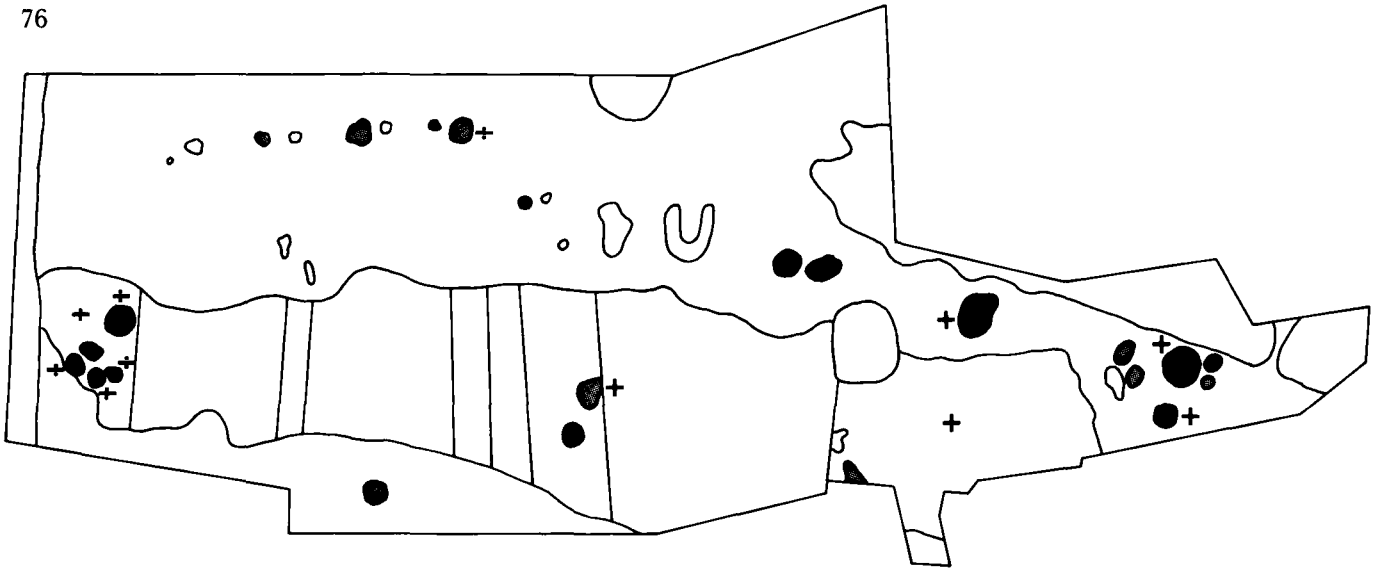

Fig. 15. Differential distribution of various features on the site. Grey spots: Type 1 pits. Black spots: Type 2 pits. +: Tool assemblages characterized by scrapers. −: Tool assemblages characterized by "skiveknive" and axe-fragments.

within the excavated area worth noting. First of all the two types of pits are differently distributed (Fig. 15). The type 2 pits are, with two exceptions, found towards the east, and it seems reasonable to believe that there is a direct relationship between the hut and this cluster of pits, as they probably have something to do with food preparation/preservation. The type 1 pits are mainly distributed towards the west, but do also occur around the hut. There are no features to which they can be correlated within the excavated area.

Looking at the tool type distributions within the excavation, we find an amazingly clear and significant difference in tool-kit composition between the western end of the excavation and the eastern end around the hut. The contents of 17 pits or layers in pits with more than five tools and of four samples of tools from the buried Ah horizon have been analysed by a correspondence analysis (Bølviken *et al.* 1982). Only the first axis of the analysis (Fig. 16) is of relevance. It shows a very clear isolation of a group of tools consisting of "skiveknive", denticulates (not significant with only two pieces present) and axe fragments including flakes with traces of grinding. Another group consisting of scrapers and transverse arrowheads in opposition to the first group is also, if less clearly, isolated. The rest of the tools have hardly any of their variation accounted for on the first axis.

The units of observation (pits, layers in pits, and samples from the Ah horizon) marked as dots along the axis (Fig. 16) do not show a similar clear separation into groups. However, if we mark out (as filled dots) those units that are more or less drawn towards the two tool groups, and mark them on the site plan with either − or + according to whether a unit is drawn towards the group of tools consisting of "skiveknive", denticulates and axe fragments, or drawn towards the group of tools consisting of scrapers and transverse arrowheads, we find a non-random pattern of distribution (Fig. 15). Those units characterized by "skiveknive" and axe fragments are found in the western part of the excavation, whereas those characterized by scrapers and to a lesser degree transverse arrowheads are found in the eastern part of the excavation around the hut.

These differences are probably an indication of different activity areas. Thus the hut and its surroundings mainly were the scene of activities in which the use of scrapers was frequent (the weak association with transverse arrowheads may be coincidential), whereas in the areas towards the west activities often occured in which "skiveknive" were in use, and where fabrication of axes occured. The other tool types are evenly distributed in the two areas. It should be stressed that the distributional differences between "skiveknive", axe fragments and scrapers, although significant, is not one of ex-

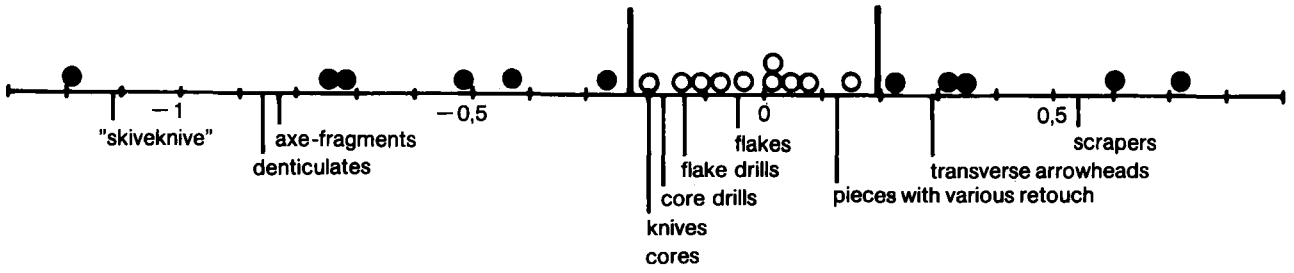

Fig. 16. Correspondence analysis of tool composition in 21 samples of tools from the excavation. Only the 1. principal axis is shown covering 36% of the total variation.

clusiveness, but one of degree. Scrapers being the most common tool are naturally also frequent towards the west, but they are by no means as common as towards the east. Indeed, if we split the excavated areas in an eastern and a western half and make a cross tabulation of the three tool types (Fig. 17) we find a highly significant difference.

An interpretation of the two activity areas is difficult as long as we have no wear analyses to support it. The difference may, however, be associated with a division by sex in activity patterns, and we would assume that the activities around the hut would be of a domestic nature.

The distribution of pottery was also submitted to analysis for variations within the settlement, but the outcome showed that there was no significant variation in types of decoration between the various units of observation (pits, layers in pits, and samples from the buried Ah horizon).

HOUSE CONSTRUCTIONS OF THE TBK

The appearence of a flimsy D-shaped house structure with a MN I date raises the question anew: What type of houses were actually used during the TBK? A series of claims for domestic TBK houses has been raised over the years, but there is a confusing variety in general type as well as in constructional details among these supposed houses. Three main forms have been suggested: longhouses of rectangular or trapezoidal shape, short rectangular houses, and small oval, round or D-shaped huts. But even within these three general forms, it is difficult to separate regular and uniform house types. Indeed, as will become apparent from the following, it is doubtful how many of the claims for houses are acceptable. Alternative interpretations of many of the features should seriously be considered.

Longhouses

The two structures from Barkær (Glob 1949) were long regarded as the finest examples of longhouses from the Neolithic in North Europe, comparable to the longhouses from the Linear Pottery cultures in Central Europe. However, recently it has become apparent that these structures must be longbarrows and not domestic houses (Glob 1975, Madsen 1979: 306). The same seems to apply to the two features from Stengade, both of which may be regarded as burial monuments placed on former settlement sites. Stengade I with its two graves is evidently a longbarrow constructed in two stages (Madsen 1979: 308), and recently David Liversage convincingly has argued that the trapezoidal Sten-

	SCRAPERS	AXES	"SKIVEKNIVE"	
EAST	obs. 40 exp. 62	obs. 37 exp. 17	obs. 6 exp. 3	83
WEST	obs. 160 exp. 138	obs. 19 exp. 39	obs. 4 exp. 7	183
	200	56	10	266

$X^2 = 49.4$ with 2 D.F. Significance level < 0.001

Fig. 17. Tabulation showing the difference in frequencies (obs.) of scrapers, axe-fragments and "skiveknive" between the eastern and the western part of the excavation. An x^2 test, where the expected frequences (exp.) are calculated under the assumption that the row and column frequencies are independent, show the difference to be highly significant.

gade II should also be regarded as a burial monument (1981: 149).

The famous Troldebjerg longhouse (Winther 1935) is a much more difficult claim to assess. With one row of roof-carrying posts and only one wall, the reconstruction of the house seems odd. To the front, it would be an elaborate construction with a timberwall set in a foundation trench, whereas its back side merely would be a "lean to" with the roof slanting to the ground. If it were not for the vast amount of cultural debris found during the excavation, these constructional features, would probably never have been regarded as part of a house. The palisade with the row of posts behind it would probably have been regarded as some sort of fence construction, and indeed that is presumably what it is.

From the causewayed enclosure at Büdelsdorf we have almost exactly the same constellation of a palisade with rows of posts behind it (Hingst 1971: abb. 1). There is no doubt here that we are dealing with an ordinary palisade system in connection with the enclosure. In support of this altered interpretation of the Troldebjerg "longhouse" it should be mentioned that recent excavations have revealed the existence of a shallow ditch in front of the palisade on Troldebjerg (Andersen 1981: note 46).

The most recent claim for a longhouse comes from the MN V As Vig settlement site (Davidsen 1978: 58–62). In this case the house was 38 m. long and of a sunken construction with a 2.6 m. wide floor 0.75 m. beneath the subsoil surface. The roof is supposed to have rested on a single row of heavy posts placed in an axial bedding trench in the middle of the floor, and further supported by two rows of minor posts placed along the edge of the floor. The sides of the "housepit" slope gently from the narrow floor up to the subsoil surface where the roof is supposed to have rested directly on the soil (Davidsen 1978: fig 75). The total width of the house is supposed to have been approximately 6 m.

The As Vig "house" is very badly substantiated. Only the last two meters of its north end were seen by professional archaeologists, while the rest had been destroyed by gravel taking. It is difficult, not to say impossible, to believe in this feature as a longhouse or indeed as a house at all. The suggested reconstruction is all too abnormal from almost any point of view, to be accepted on the very scrappy evidence available. We are convinced that it would be much more fruitful to think in terms of features known from causewayed enclosures when trying to interpret the As Vig evidence.

Another claim from the same period and in the same publication concerns the site of Sigersted I on Zealand (Davidsen 1978: 22–28). Two parallel rows (26 and 15 m. long) of post holes with the posts in each row closely spaced were here interpreted as indications of a longhouse. However, there is no supporting evidence for this interpretation at all. We have two palisade-like rows of posts and that is all we can say.

Short rectangular houses

The first claim for this type came from Strandegård, and was based on a rectangular setting of stones (minimum dimensions 11 by 4.5 m.) with a 4.5 by 3 m. stone paving in the middle (Broholm and Rasmussen 1931: Abb. 1). Beneath the stone paving major fragments of three Early Neolithic pots from the Virum Group were found. Cultural debris from the Ertebølle culture and the Early Neolithic Svaleklint group was found all around, as well as below and over the stone setting. Strandegård is seldom mentioned in connection with houses any more, as most scholars have realized that it must be a burial structure placed in a former settlement area.

A recent claim for a short rectangular house comes from Ø. Hassing (Johansen 1975). The 10.6 by 5.4 m. large structure, with its deep foundation trench and two inner rows of roof-carrying posts, must indeed be a house. However, the site not only contains an early Middle Neolithic settlement, but also a Pre-Roman Iron Age settlement, and the house has a very familiar Iron Age look. Despite the excavator's assurances that the house belongs to the Neolithic and not the Iron Age, we should be very cautious and not unconditionally accept the Neolithic date.

A 6–7 by 3 m. large rectangular hut has been reported from the very carefully excavated Muldbjerg settlement site dating to the early Neolithic Oxie group (Troels-Smith 1960: 597). The hut is supposed to have been of a very flimsy construction of stakes and reed. No documentation has been published.

Outside the Nordic TBK area, two reasonably certain short rectangular houses from TBK contexts in Niedersachsen should be mentioned. A 12.8 by 4.8 m. large house comes from Flögeln-Eekhöltjen, Kr. Cuxhaven (Zimmermann 1979). It had walls set in shallow

foundation trenches and a double row of roof-carrying posts placed in its central axis. Three transverse inner partition walls divided the house into four compartments. Like the outer walls they were set in shallow foundation trenches, and they were placed in conjunction with the roof-carrying posts. Four C-14 dates lie in the range of 2845–2450 b.c.

The other house comes from Wittenwater, Kr. Uelzen (Voss 1965, Schirnig 1979). It measured 15.6 by 6 m. and had rounded ends. Although a few inner roof-carrying posts were present, the main constructional feature is heavyset posts in the outer walls and in two transverse, inner partition walls that must have carried a good deal of the roof's weight. The distance between the individual posts in the walls was 1–1.3 m. A centrally situated fireplace was present.

There seems no reason to dispute these two houses from Niedersachsen. However, it may be questioned how much relevance they have for the Nordic TBK. We are dealing with a different, if neighbouring, branch of the TBK and with distances of 300–500 kilometers. We cannot just assume that the same type of houses should be present in the two areas.

Oval, round or D-shaped houses

The most excessive claim for this type of house comes from Troldebjerg (Winther 1935). Here a series of cuts into the hill slope leaving semicircular flat areas was interpreted as house floors in D-shaped huts. The existence of fireplaces within and outside these areas tended to suggest that they could be huts, but a total absence of post holes made it less than likely. Continued excavations, however, suggested that there was an abundance of small post holes in connection with these features (Winther 1938). The post holes were found both along the curved back of the cuts, and in the area in front, where they in several cases tended to form straight lines. They were no more than 10–20 cm. deep and of a very flimsy nature. Winther himself assumed that he must have overlooked these post holes on earlier occasions.

The suggested huts from Troldebjerg do indeed have much in common with the contemporaneous hut from Hanstedgård, and we tend to accept the claim. However, one thing should not be forgotten. The standards of documentation on Troldebjerg, although excellent for a settlement excavation of that time, is nowhere near our demands today, and it does leave a certain amount of uneasiness that prevents a wholehearted acceptance.

A claim for four horseshoe-shaped huts preceeding the excavations at Troldebjerg and to which the Troldebjerg huts actually were compared, comes from Klein-Meinsdorf, Kr. Plön in Holstein (see for instance plans and photos in Hoika 1981: abb. 5). However, the four features from this locality with their meter-thick "outerwalls" of clay and crushed flint and their partly stone-paved floors are definitely not houses, but the foundations for dolmens, where the large stones have been removed before excavation, or are lying outside the foundations in broken, half-buried conditions (e.g. Hoika 1981: abb. 5,1). Two fully comparable examples of this kind of "hut" can be seen at Mosegården near Horsens (Madsen and Petersen 1984: 62–65). This example clearly demonstrates some of the ambiguity prevalent in archaeological interpretations.

From Ørnekul on Nexelø a claim has been raised for a round hut measuring 5 by 4.3 m. (Becker 1953), presumably belonging to the Svaleklint group of the Early Neolithic. The wall foundation was laid with stones, and in the middle of the hut was a stone-built fireplace on a clay floor. The drawn plan looks convincing, the photographs less so. The main problem is that the excavations took place in an old beach line deposit with its enormous mass of stones. Now, is it correct to separate huts from this mass of stones? Or could it be other activities by man that have created a layout of the stones to which it would be tempting to apply an interpretation of huts. Personally, we do not feel convinced that we are dealing with remnants of a dwelling. A further complication is that the site comprises not only an Early Neolithic settlement, but also an Ertebølle settlement, as well as several phases of habitation during the Middle and the Late Neolithic. This makes the dating uncertain too.

At Knardrup Galgebakke near Copenhagen on Zealand three subrectangular or D-shaped houses dating to the Early Neolithic Virum group have been claimed (Larsen 1958). They were found in a straight line with only 1–2 m. between each other, and there may have been more in the line. Each house shows as an irregular scatter of stones with a tendency to a marginal distribution. A few assumed post holes were found inside the houses, but they do not form a coherent pattern that can be interpreted in constructional terms. In each of

the houses, concentrations of charcoal-coloured sand, and fire-cracked stones were found. The houses measured 6–7.5 by 3.5–5 m.

Even if the general outline of the supposed houses from Knardrup Galgebakke is very much the same as the outline of the Hanstedgård hut, we feel very reluctant to accept the features from Knardrup Galgebakke as houses. They may be houses, but the excavations were definitely not of a standard, where we can feel assured that all there was to see actually was seen (see especially Larsen 1958: fig 2 and 5).

The position of the Knardrup Galgebakke site on a very pronounced promontory surrounded by a former lake, is very characteristic of causewayed enclosures in Denmark. The row of "houses" could very well be a row of ditches, where only the top layers containing, among other things, a fill of stones were excavated. A fully comparable example is seen at Büdelsdorf in South Schleswig (Hingst 1970: Abb. 4). A 7 by 4 m dark, charcoal-coloured feature was uncovered here, with many partly fire-cracked stones in the surface. It was immediately interpreted as a house due to a row of post holes enclosing it, but was later reinterpreted as a "roofed firepit", the function of which was not understood (Hingst 1971: 194). The reason for this reinterpretation was that the dark-coloured soil and the many stones proved to cover a deep pit that could not possibly have been a house. Also, other pits of the same type had shown up, forming a row parallel to the already acknowledged ditch system of the causewayed enclosure. Today we know from comparisons with Sarup (Andersen 1981) that these "roofed firepits" are enclosed ditches in the surrounding ditch system of the enclosure.

We will thus take it as possible that the row of three "houses" on Knardrup Galgebakke in fact may be the tops of ditches in a causewayed enclosure. Although this may not be the correct interpretation, it is one that is just as likely as their interpretation as houses.

From Oldenburg-Dannau, Kr. Ostholstein, evidence of what surely must be traces of a house or hut has been published (Hoika 1983). An approximately 100 sq. m. large area of this early MN settlement was excavated in 1979 and 1980. Unfortunately, the area was excavated in small squares over the two years prohibiting a coherent picture of the structure. Furthermore, the level of documentation was obviously not as thorough in 1979 as in 1980. Stake holes in the presumed wall had thus possibly been discounted in 1979 as rodent activity (Hoika 1981: 55), and other features were not registred to the same degree as in 1980, making the composite drawing confusing to look at (Hoika 1981: abb. 3).

Nevertheless, what is there does suggest some sort of a house or hut construction. The most prominent feature is a band of red-coloured clay, including pieces of burned daub with impressions of stakes and cut timber, forming a semicircular to horseshoe-shaped outline. This outline measures 8 by 6 m. but its termination towards the north is not defined. There is a marked tendency in the 1980 squares for small post holes and stake holes to cluster along the band of red clay, and it seems likely that we are dealing with the remnants of a burnt wall. Layers of charcoal support the idea of a burnt structure, and a couple of stone-built hearths inside the red clay band supports the interpretation as a house or hut. However, the even spread of larger post holes over the excavated area is not helpful for a reconstruction, and the only section published warns of a complex situation with at least two separate phases, as also stated by the excavator (Hoika 1981: 55).

Even if there can be little doubt that we are dealing with the remnants of a dwelling or succesive dwellings, we find that one should be careful when details of a reconstruction are called for. We do not feel that the evidence carries much weight in this respect, but we note that there are features like curved walls with stake holes associated that look very familiar when viewed from a Hanstedgård point of view.

From the Mosegården site in eastern Jutland a cluster of post holes has been taken to indicate a couple of huts presumably of a round form (Madsen and Petersen 1984: 72). The site dates around 3000 b.c. and belongs to the Early Neolithic Volling group. The Mosegården site had been covered by a barrow almost immediately after it was left, and the site is thus very well preserved and free from later intrusions. This makes it rather certain that the post holes, found in a limited area of the site, do indicate the presence of huts, but the forms of these are definitely open to doubts. However, they must have been of a very light and flimsy construction, considering that almost no traces were left despite the perfect conditions of protection.

Another example very much like the Mosegården one comes from Lindebjerg on Zealand also dating around 3000 b.c. and belonging to the Early Neolithic Svaleklint group (Liversage 1981). Here a cluster of post holes on a settlement preserved beneath a barrow was

taken to indicate a hut of a very light and flimsy construction. The form of this hut could not be determined.

In concluding this survey of house claims from the Nordic TBK, it must be stated that we know very little as yet concerning TBK house forms. Indeed, the survey has shown that we can place no or very little faith in the claims for longhouses and short rectangular houses. The latter seem to have been used in Niedersachsen, but this cannot be taken as an indication for the Nordic TBK. We only have the very small Muldbjerg hut to refer to as a possible example within this category.

Only within the group of small D-shaped or round huts do we find acceptable claims. Both at Troldebjerg and Oldenburg-Dannau the evidence seems convincing to a certain degree, and they do fit in with the pattern observed at Hanstedgård. A further support for small huts in the Nordic TBK comes from Mosegården and Lindebjerg, but neither of these two sites is able to give any information on form or size.

CONCLUSIONS

Through careful excavations, and with a good deal of luck, the settlement site of Hanstedgård has yielded valuable new information on dwelling constructions from the Nordic TBK. A major problem has been that those houses we find claimed in the literature are of such diverse types that it is hard to believe in their authenticity. As the survey in the preceeding pages has shown, there are good reasons to believe that most of the features believed to be houses never were houses.

Two questions immediately suggest themselves. Why have scholars been so willing to accept almost anything as houses, and if we actually hardly know any dwellings, where are they then? The settlements are definitely there, and many have been excavated. Therefore, the absence of obvious traces of house structures has lured the excavators into misinterpreting whatever they found as houses, based on a firm, but unwarranted belief that 'The people in Denmark, who were able to build thousands of magnificiently made megalithic tombs, and raise huge causewayed enclosures could hardly be expected to live in small, irregular huts' (Skaarup 1982: 45, translated from German).

The truth probably is that they did live in small irregular huts, like the one uncovered at Hanstedgård, and the reason why we do not find them in the settlements we excavate, is either that the faint traces of their walls are overlooked, or, more often, that they have been destroyed by ploughing before excavation. Indeed, if the Hanstedgård hut had not been preserved in the depression, but had been exposed to normal agricultural activities, the two short, parallel rows of post holes would have been all there was. Who would accept these as solid evidence for a dwelling especially if one were looking for impressive buildings to match the known elaborate monuments of the TBK?

Let us take Sarup on Funen as an example (Andersen 1981). This causewayed enclosure with two phases from Fuchsberg and MN I has been completely excavated, and so has the slightly later settlement within the same area. We may take it for granted that the people on the site did live in some sort of dwellings, and furthermore, that if they had lived in large well-built houses like, say, a Bronze Age or an Iron Age house, these could not have escaped the notice of the excavator. Furthermore, it is a completely excavated settlement, and, therefore, the houses cannot hide outside the excavated area. Thus, whatever kind of dwellings the people lived in, they did not leave many traces that could survive ploughing. Postholes, however, were common on the site, although they only formed straight lines of any length in a couple of cases (Andersen 1981: 88). With the experience from Hanstedgård it would be interesting to know if small clusters and short straight lines of post holes could not be separated at Sarup and at other TBK sites?

Postscript

After the manuscript had been delivered for printing, three radiocarbon dates from the site became available. They are:

K–4214. Charcoal and hazel nut shells from layer 3 in pit 6 (fig. 5): 2610±80 b.c.

K–4215. Charcoal from layer 2 in pit 11 (fig. 6): 2720±80 b.c.

K–4216. Charcoal from layer 6 in pit 11 (fig. 6): 2630±80 b.c.

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