

# Lollikhuse

## - a Dwelling Site under a Kitchen Midden

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### INTRODUCTION

Despite almost 150 years of research into settlements from the Ertebølle Culture, our knowledge of dwellings from this period is still extremely limited.

Dwellings are an important facet in settlement analyses, which have achieved prominence, particularly in recent years. The reason that so much importance is attached to dwellings is that they are seen as the controlling constructional element in a settlement, about which all other structures and activities are organised. Similarly, attempts have been made, using dwellings as a starting point, to estimate the size of groups and male/female ratios (Grøn 1987). These are the most important reasons for intensifying the search for dwellings. Attempts have been made to demonstrate the locations of dwellings using the distribution of artefacts and the occurrence of hearths, not only in new excavations, but also in excavations carried out in the past (Brinch Petersen 1972; Blankholm 1985; Grøn 1987). Other researchers have pointed out that these distribution patterns do not necessarily reflect “indoor” activities, but could equally well be the result of activities out of doors (Bokelman 1986:150; Stapert 1994).

The work described above has exclusively been applied to sites of the Maglemose Culture, but the approach can equally well be applied to the Kongemose and Ertebølle Cultures. We probably need to recognise that in the absence of any traces of the constructional elements of the dwellings, then it is only possible to demonstrate the possible presence of a dwelling through the position of hearths and the distribution of the finds. An element such as “wall effect” has been introduced into the discussion. However an abrupt end to the find concentration need not necessarily be the result of a wall, but, as pointed out by Bokelman (1986), could also be the result of knapping flint besides a fallen tree trunk or whilst sitting by a windbreak.

In research into dwellings in recent years there has been a clear tendency to present a “standard dwelling” which satisfies certain requirements made by the analyt-

ical methods used. This “standard dwelling” is all-important when accepting or rejecting other finds interpreted as dwellings. The unfortunate side of the matter is that nearly all the archaeologists involved in dwelling research, operate with different “standard dwellings” and it is therefore seldom that they accept each others dwellings (Blankholm 1989; Bokelman 1986; Grøn 1987; Stapert 1994). A point which it is important to emphasise in this respect is that the various “standard dwellings” do not a priori reflect details of construction, rather the activities which have taken place at the site. When one operates with the term “standard dwellings”, or perhaps it would be more correct to talk of “standard patterns”, it is in reality a particular and repeated behaviour one is trying to demonstrate. The most common starting point is a hearth, about which several particular activities are thought to have taken place, and which can be compared from site to site. It would be beyond the remit of this article to review all the various methods which have been used to demonstrate dwellings. However there is a general need for tolerance of a certain variation in the appearance of dwellings.

If we look specifically at dwellings and dwelling outlines from the Ertebølle Culture, then there have, over the years, occasionally been published structures which have been interpreted as dwellings; these will be reviewed later in this article. A common feature of the majority of the structures published to date is that they have not won broad acceptance in archaeological circles. In other words we have a clear problem of documentation with regard to the demonstration of Mesolithic dwellings. A step in the right direction in recognising dwellings must be the opening up of much larger areas in excavations and a much more tenacious search for dwellings, whose small postholes do not necessarily leave clear traces. Traces of stakes hammered into the ground can easily be confused with animal burrows if they are not sectioned.

In the following account a recently excavated dwell-

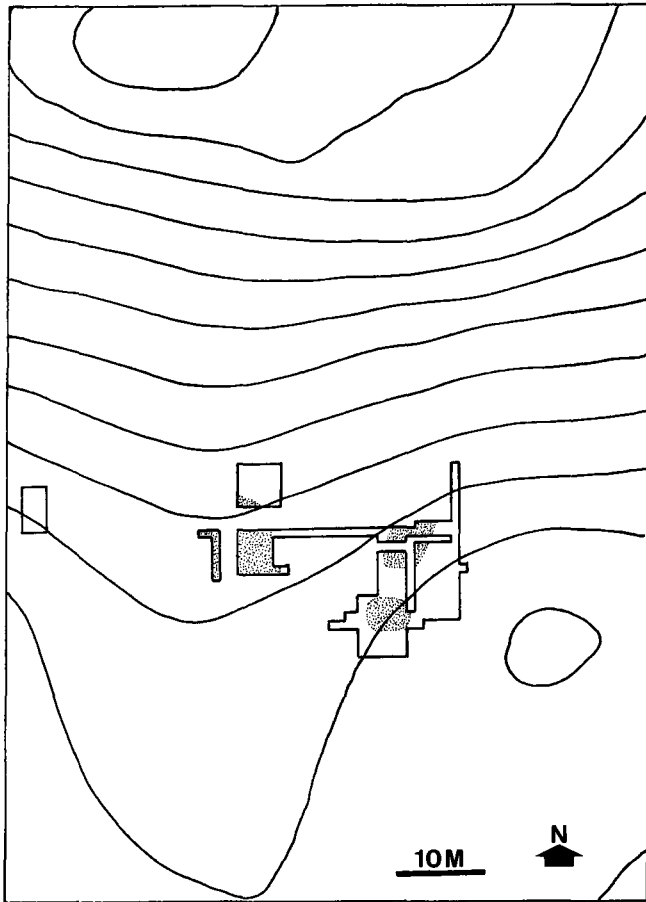


Fig. 1. Map showing the extent of the excavations at the Lollikhuse kitchen midden. The dotted areas signify the three large depressions found at the site. Only the southernmost of these, which is interpreted as the remains of a dwelling with a sunken floor, has been fully excavated.

ing-site under a kitchen midden at Lollikhuse in Hornsherred on Zealand will be described (1). The dwelling site is clearly visible as a complex of several evident structures in the settlement.

The dwelling site is part of a very large Ertebølle settlement, which normally means that there have been numerous repeated settlements at the same locality. There are also clear indications that the occupation of the Lollikhuse kitchen midden extended over a very long period of time, which makes it difficult to analyse the dwelling relative to the adjacent structures. Accordingly, it has not been possible to separate out with certainty the structures on the site which are contemporary with the dwelling site. None of the methods we have at our disposal today is able to demonstrate fully whether

various structures are contemporaneous. This is probably one of the most important problems when carrying out settlement analyses on large settlements.

As many presumed dwelling-sites have been recognised with the aid of distribution analyses, the same method will be used on the dwelling-site at Lollikhuse in order to compare the structures demonstrated using this line of evidence.

#### *The dwelling site*

Archaeological excavations were carried out at the Lollikhuse settlement in 1989 and 1991. Already in the first season of excavation, three large, very dark areas of fill were observed (fig. 1). None of these areas was excavated in full at the time and it was therefore not possible to interpret them with certainty. It was in order to establish the character of these fills that the excavation was resumed in 1991 (2).

In 1991, the excavation of feature 21 was completed, apart from a small area which lay under a baulk. The feature comprises a shallow pit, 0.2-0.3 m deep, 5.5 m long and 4.0 m wide; it is interpreted as the remains of a slightly sunken dwelling (fig. 2). The whole of the depression was overlain by a solid 10 – 15 cm thick layer of shells, mostly of oysters. This layer contained artefacts dating from the Late Ertebølle Culture and was deposited when this part of the settlement was transgressed.

The interpretation of the depression as a dwelling-site is based on various lines of evidence – both in the form of evident structures and latent features, which together comprise the structural complex which is the dwelling.

Along the western and southern edges of the depression, several postholes and stakeholes were excavated. These are interpreted as traces of the building's superstructure. It should be mentioned that there possibly also was a row of stakes along the northern side of the depression, which was excavated two years earlier. We cannot be sure of this due to the method of excavation which was employed in the first year of excavation. Fill was excavated layer by layer and where dark areas appeared in the lowest layers these were emptied rather than sectioned. On the excavation plan the edge of the hollow is seen therefore with an unusually lobed appearance. This can presumably be interpreted as being the result of a row of stakes which stood on the northern side of the dwelling.

The reason for a distinction having been made between postholes and stakeholes is that there is very great variation in the dimensions of the holes which were registered along the edge of the depression, and that the postholes had been dug whilst the stakeholes were the result of stakes having been hammered into the ground. Postholes were found only at the western end of the dwelling. They were 0.3 – 0.5 m in diameter and 0.2 – 0.3 m deep. Two of them were lined with stones. In contrast, the stakeholes were only between 0.1 and 0.2 m in diameter and between 0.1 and 0.2 m deep (fig. 3).

Another piece of evidence which supports the interpretation of the feature as a dwelling site is that in the western end of the depression there is a round stone-paved hearth. The hearth measures 0.8 – 0.9 m in diameter and is constructed as a flat cobbled area contain-

ing various types of stone. A section through the hearth showed that it had been laid over an earlier hearth, presumably of the same type, from where some of the stones had been robbed.

In the northwestern part of the depression there was a patch of grey ash as well as scattered occurrences of fire-shattered stones. There must therefore also have been a kind of hearth here, although of type other than that described above. An important difference between the two hearths is that there were large amounts of charcoal around the first, whereas the second was characterised by grey ash and almost no charcoal.

The fact that there were two phases represented in the stone-paved hearth, indicates re-use of the dwelling, in connection with which it was necessary to renew the hearth. It is not however possible to determined to what

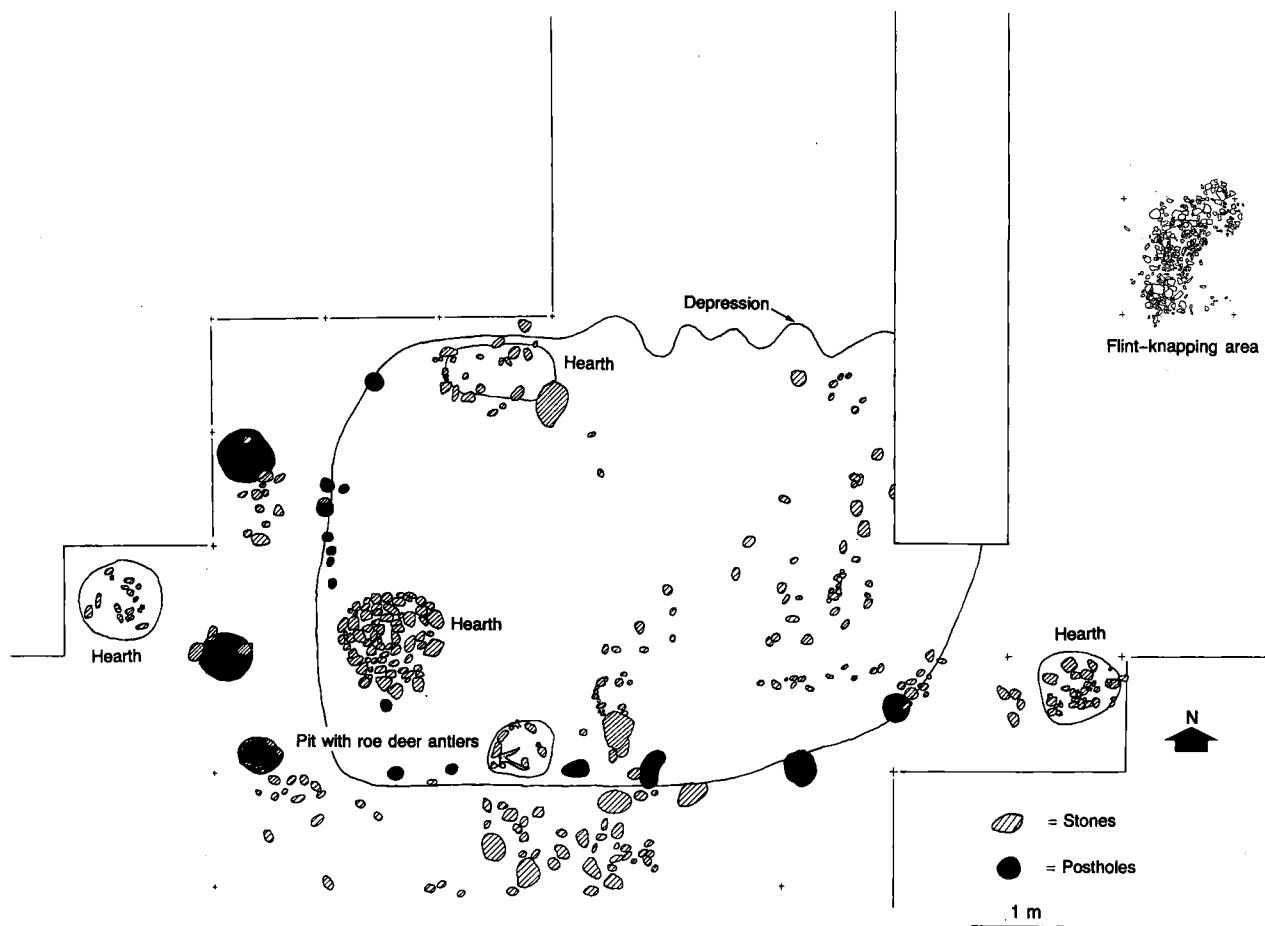


Fig. 2. Feature 21, the dwelling site. The depression measures c. 5.5 x 4 m and is surrounded by stake- and postholes. In the western part of the depression there is a round, stone-paved hearth which had been renewed. North of this lies a patch of grey ash containing a single fire-shattered stone. On the southern edge of the depression there is small pit edged with stones, in which a roe-deer antler was found.

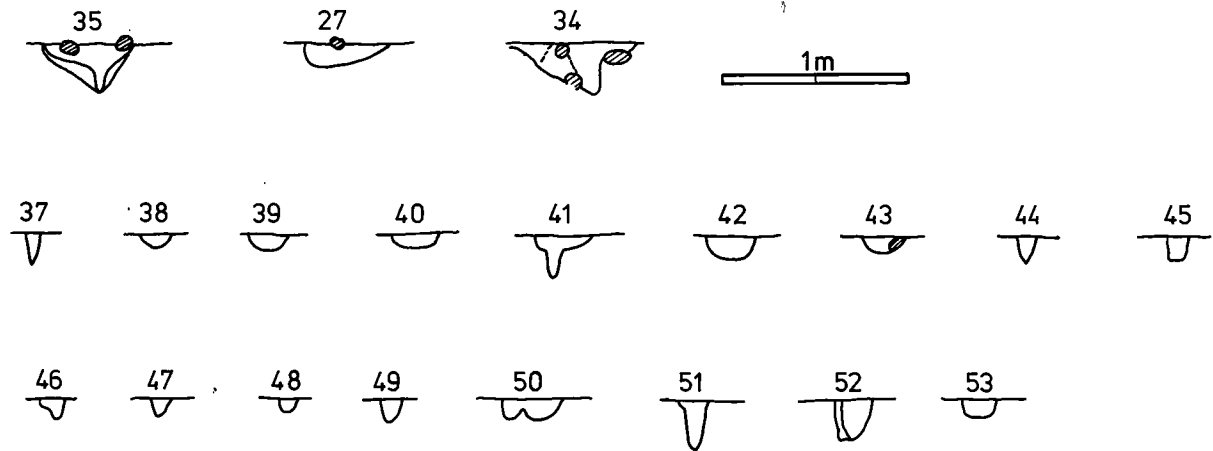


Fig. 3. Sections through the stake- and postholes found around the dwelling.

extent the northern hearth was in use at the same time as the stone-paved hearths.

A last piece of evidence, which supports the interpretation of the feature as a dwelling-site is the size and shape of the depression itself (fig. 2). Its virtual rectangular shape and its size (ca. 22m<sup>2</sup>) corresponds to the general picture we have of Mesolithic dwellings (Newell 1981:272 ff.). Many of the structures which have been previously interpreted as dwellings have turned out to be the result of the root net of a fallen tree (Newell 1981:235 ff.). The carefully constructed stone-paved hearth in the Lollikhuse dwelling shows quite categorically that this is not the case here.

The length of the depression was, as mentioned above, 5.5 m, but the dwelling as a whole has had a length of ca. 6 m, as there were three postholes lying approximately 0.5 m west of the edge of the depression.

As is evident from the excavation plan (fig. 2), there were also two hearths outside the dwelling. It is possible

that these are not proper hearths but piles of discarded limestone "cooking stones". Both features consist of fire-bleached and shattered limestone flags, several of which could be refitted. It is possible that flat pieces of limestone such as these were used as a kind of pan over the hearth. A similar stone, bearing charred food remains, has been found at another Ertebølle site. This stone was however not of limestone but another kind of rock. It was found at the Ertebølle site of Agernæs in northern Funen (Anders Jæger, pers. comm.).

Some few metres to the northeast of the dwelling there was a flint knapping site, where the product was almost exclusively transverse arrowheads. It is not however possible to establish whether the activity here was contemporary with the dwelling. Meanwhile, there is very close typological agreement between the arrowheads found in the dwelling and those from the flint-working site.

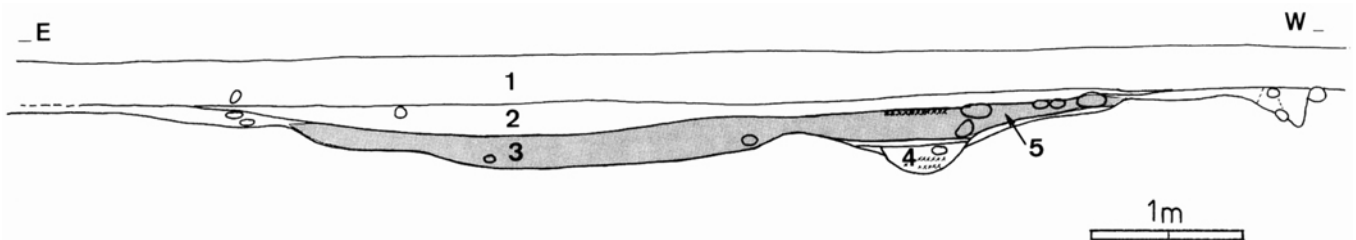


Fig. 4. Section east-west through the dwelling (east to the left and west to the right). 1: plough soil, 2: shell layer – mostly oysters, 3: fill, reddish-brown, in some places greyish due to the presence of ash, 4: pit with very light-coloured fill consisting mostly of sub-soil, older than the fill in the dwelling, 5: stone-paved hearth.

### *The depression and its fill*

Most of the hollow was overlain by a compact layer of shells, of which the great majority was of oysters. This layer is a transgression layer, presumably deposited at the *Littorina maximum* which falls in the Ålekistbro phase. Between the shells there were occasional bones and tools of Late Ertebølle type as well as quantities of undatable flint debitage.

After removal of the shell layer the dark fill of the dwelling site stood out clearly against the sandy clay sub-soil. The fill had a characteristic reddish-brown colour and its content of marine shells was very modest. In some places the reddish-brown colour changed to a more ash grey colour, but these grey patches were of a more local nature. The whole fill contained artefacts from the Early Ertebølle Culture. It was not possible to discern any stratigraphy in the fill either on the basis of artefact typology or in the transverse section which was dug across the depression. An actual floor layer could thus not be identified. We meet a similar problem in the much later pithouses from the Viking Age.

In the transverse section it was however possible to register a deeper depression under the fill in the western end of the hollow close to the stone-paved hearth. This was filled with material of the same colour as the surrounding sub-soil (fig. 4). It was only its modest content of shells, in addition to a couple of bone fragments and a couple of charcoal stripes which distinguished this pit from the sub-soil. Its function is unknown but it was clearly back-filled before the dwelling came into use, as the fill is very light in colour and almost devoid of cultural remains.

On the southern side of the dwelling another feature was investigated, which on the basis of its appearance and stratigraphical observations must be contemporary with the dwelling. It consisted of a circle of stones 0.4 – 0.5 m in diameter (fig. 5). The stones were of a very modest size, up to 0.15 m in diameter. Within the stone circle in its southern part, lay a roe-deer antler. Complete roe-deer antlers are far from common at the settlement; in addition to the one mentioned above only one further intact example was found. The latter was also found within the dwelling site, in its central part at the base of the depression.

Two of the stones in the stone circle attracted attention by virtue of their red colour – they were both made up of very decomposed sandstone. The stone circle



Fig. 5. Pit edged with stones and containing a roe-deer antler, found at the edge of the dwelling and interpreted as a sacrificial pit.

touched a ca. 0.1 m deep pit with a dark brown fill quite rich in charcoal, particularly at the base which in places had a reddish hue due to the heat. The fill also contained a few small fragments of bone.

At several points in the fill of the dwelling site there were patches of red ochre, particularly near the bottom of the depression. The majority lay in the eastern half.

Finally it should be mentioned that there were two large stones, 0.3 – 0.4 m in diameter, in the depression. These lay opposite each other about 2 m from the western end of the hollow and suggest perhaps that the dwelling had some form of internal division.

The material which had been removed in the course of creating the depression, comprising very sandy clay sub-soil, had been placed to the north and west of the hollow. Particularly to the north of the dwelling, a large heap of excavated sub-soil could clearly be seen. Taking the level of the sub-soil in and around the dwelling site showed how deposition of the excavated material had

led to the formation of a small mound to the north (fig. 6). As it was not possible to detect any buried topsoil or culture layer under the excavated material, the area must apparently have been severely eroded when the dwelling was built. Within the excavated clay sub-soil there were however often clumps and pockets of culture layer which made observation difficult in this area. This was possibly a contributory factor in the row of stakeholes along the northern edge not being registered during the first season of excavation.

### *Dating of the dwelling*

The dating of the dwelling is based exclusively on a typological dating of the artefacts which were found in the depression which was part of the dwelling. The most important of these are the transverse arrowheads which were found in the fill. These points are unequivocal indicators of a date in the Early Ertebølle Culture. This is further supported by the absence of flake axes in the dwelling. In the shell layer overlying the dwelling a few flake axes were found, but there were none in the fill itself. Apart from the morphology of the transverse arrowheads, there are no reliable diagnostic artefact types for the Early Ertebølle Culture on Zealand (Vang Petersen 1984 p. 11), and is therefore important for the dating of the dwelling that all types characteristic of the Late Ertebølle Culture are absent from the fill.

### *Interpretation of the structures*

As is already apparent from the above, the depression is interpreted as the remains of a sunken dwelling site. In the following however I will attempt a synthesis of the individual observations regarding the features in and around the depression.

It is the depression itself, which measures ca. 5.5 x 4.0 m, which defines the limits of the dwelling. Around the depression there was a series of small stakes and a few larger posts. The larger posts lie ca. 0.5 m from the western end of the depression and it is presumed that these posts met in a "fork" ca. 2 – 3 m over the floor of the dwelling. From this fork, a long sloping ridgepole extended down along the dwelling's long axis. The stakes were hammered in and attached to the sloping ridgepole.

A construction such as this means that the western end of the dwelling was significantly higher than the

eastern end, where the ridgepole is presumed to have ended at ground level. If we look at the features which are present in the dwelling we can see that it is in the western end of the dwelling that the hearths are located. At both the points where hearths are registered, the depression is not so deep as elsewhere in the dwelling. If we maintain the theory that different activities took place in the eastern and western ends of the dwelling, it is interesting that the only division between the eastern and western ends consists of two large stones. It is thus possible that there was an internal division in the dwelling consisting perhaps of a screen of hides or some other similar material. In the outer room there were hearths, whereas in the inner room there were presumably sleeping quarters. It is possible that other activities took place here such as the repairing of flint tools,

The pit with stones around its circumference, and containing the roe deer antler, can be interpreted as a small offer pit, placed in the outer room close to the stone-paved hearth. It is not possible to give a more practical explanation from the pit for which there is no close Danish parallel.

This is not the first time that large hollows on Mesolithic settlements have been interpreted as dwelling sites (L. Larsson 1974, 1985). These interpretations are often met with a certain amount of scepticism from other researchers. It also appears as rather an impractical construction which would concentrate damp and cold. We know however from Maglemosian dwelling sites, built in wetland areas, that people knew how to insulate themselves against the worst of the cold and the damp by constructing floor layers of bark (Andersen *et al.* 1982; Sørensen 1988:60). A corresponding construction, perhaps consisting of thin branches, grass and bark could have made the sunken dwellings significantly more attractive to live in. A construction such as this would also explain why both hearths are slightly raised above the level of the rest of the dwelling floor. It would not have been very sensible to built the hearths on a floor consisting of easily-ignited inflammable organic material.

The patches of red ochre, which were present in the fill can possibly be interpreted as traces of pelts smeared and coloured with this substance. This explanation has previously been proposed in connection with occurrences of ochre in Mesolithic graves (Brinch Petersen 1990:24). Seen in connection with the above, one could imagine that the basal layer of branches, bark and grass

was covered by skins. With a construction such as suggested here, the sunken floor would not have made the dwelling damp and clammy, on the contrary it would have been dry and warm.

In discussions of Mesolithic dwellings, arguments have been presented for and against interpreting flint concentrations as being indications of a dwelling site. It is possible that both adherents and opponents of this theory are correct, in that there could be two different types of house floor construction which behave differently with regard to the occurrence of flint on the dwelling floor. It is a logical to conclude that large quantities of flint on the floor would be very inconvenient, if activities in the dwelling took place directly on top of the sharp-edged fragments. However, if the floor consisted of a thick layer of twigs, bark and grass, then small flint pieces would just disappear between the twigs. With other types of floor construction, on the other hand, it is more likely that as much flint as possible was collected and removed from the floor. One important point

should however be remembered and that is that flint concentrations reflect functions and activity areas or possibly deposits, and only on those occasions when the activities took place in the dwelling will they also reveal its location. In the absence of traces of any kind of construction, flint concentrations can therefore just as easily reflect outdoor activity areas.

If we look at the occurrence of flint in the remains of the dwelling investigated here, it is characteristic that there are large quantities of flint within the area delimited by the outline of the dwelling; this flint is however almost exclusively in the form of very small pieces. Tools have apparently been produced occasionally or repaired in the dwelling, as revealed by the presence in the fill of several edge flakes, an unfinished tooth bead and debitage from the production of transverse points. It is in particular the finding of two Krukowski microburins and a number of unfinished arrowheads which suggest that production took place within the dwelling itself.

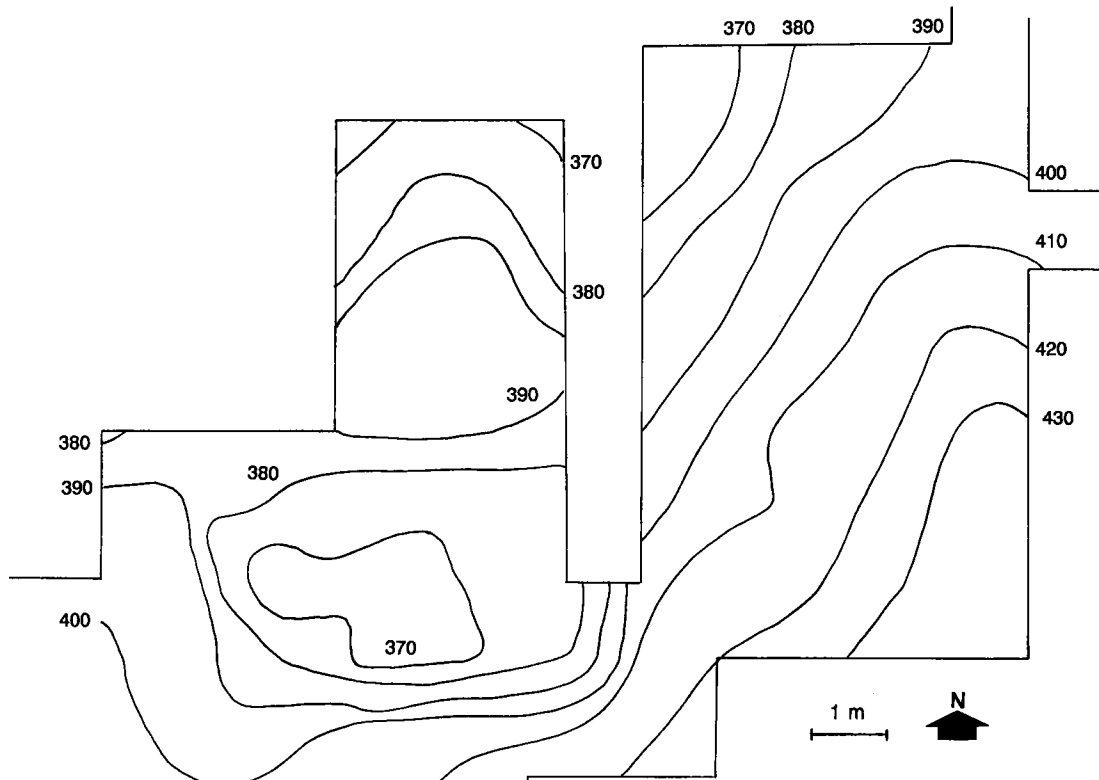


Fig. 6. Levelling of the sub-soil surface after removal of the culture layer and the fill of the depression. The depression stands out clearly, and it can also be seen that part of the excavated sub-soil was deposited just to the north of it. The heights are given in centimetres above sea level.

The analysis and refitting of the flint fragments has not as yet been completed and it is possible that these investigations will provide some interesting new information. The fact that the dwelling is constructed around a depression in which the find-bearing deposits are much thicker than those outside it is important when considering that the concentration of flint per square metre in the area of the dwelling is significantly greater than that of the near surroundings. It is therefore of particular interest whether there is a difference between the types that are found in the dwelling and those found around it.

### *The dwelling as a latent feature*

If we ignore the evidence from the constructional traces which delimit the dwelling and carry out an analysis of the distribution of the artefacts, the dwelling also stands out very clearly. The distributions of fire-shattered stone and flint waste both reveal the presence of the dwelling through marked high values (fig. 7 & 8). This however is hardly surprising as the sunken floor means that the find-bearing layer is much thicker in the immediate area of the dwelling. It is however interesting to note the distribution of fire-shattered stones on the site; the greatest concentrations do not coincide with the stone-paved hearths lie, as one would expect. The situation is almost the reverse, with very few fire-shattered stones around the hearths. This situation is seen most clearly with regard to the two stone-paved hearths lying on the eastern limits of the excavation (fig. 8). However, even the stone-paved hearth inside the dwelling lies on the edge of the concentration of fire-shattered stone. The situation is different with regard to the cooking/hearth pits, which were registered at various points on the site. These structures lie where the concentration of heat damaged flint is greatest. The interpretation of these observations must wait, but it is interesting in connection with the reconstruction of the location of the hearths in the settlement, that not all hearths mark their presence with high concentrations of fire-damaged flint.

With regard to the tools, it is burins and waste from their production in particular, which are more abundant in the dwelling than elsewhere on the site. They also form a concentration slightly to the north of the dwelling site described here, where there was an eroded depression which could possibly be the remains of yet

another dwelling. An overall picture of the activity areas is obtained by plotting the distribution of axe sharpening flakes, burin waste and Krukowski microburins on the same figure. All these are waste products from the sharpening or production of flint tools and they are of a size such that they often remain at the place where they were produced. Figure 9 shows the distribution of the waste products and on the figure the dwelling appears as two separate concentrations, possibly corresponding to the room division suggested earlier. It must however be concluded that without the depressions, postholes and hearths, it would have been very difficult to separate the dwelling's activity areas from the corresponding activity areas present elsewhere on the site. Only the concentrations of waste flakes and fire-damaged flint reveal the outline of the dwelling very clearly. This situation should not however be considered as being of decisive importance in the interpretation of the feature as the remains of a dwelling, as quantitative analyses will always be influenced by the thickness of the find-bearing layer, which is of course greater in the area of the depression. As there does not appear to have been deposited much fire-damaged flint around the stone-paved hearths, the high concentrations of these in the dwelling can possibly be explained in terms of the dwelling having been burned down. This would also explain why the fill is ash-grey in colour in certain parts.

### *Parallels to the dwelling*

It is obvious to look for parallels to the Lollikhuse dwelling in the very extensive evidence from the Ertebølle Period which has been accumulated during the last 150 years. A literature search does not however throw up many possible counterparts to the Lollikhuse dwelling. A total of seven localities, where features have been interpreted as the remains of dwellings with sunken floors, are mentioned:

1. *Vegger* on the Limfjord (Simonsen 1952). On a sloping stretch of coast it could be seen that the slope had been dug into and an area ca. 5.5 x 2 metre partly levelled (P. Simonsen 1952:202). On the presumed floor level there were several stone-lined hearths. In a later expansion the levelled area was extended to 6 x 2.5 metres and in this phase there was only a single hearth associated with the floor level. No evidence was found of posts or stakes in connection with the feature and it



Fig. 7, right. Distribution of flint debitage in and around the hut. The large concentration to the northeast of the dwelling comes from a flint knapping workshop. The interval between the lines is 100.

Fig. 8, below, left. Distribution of fire-shattered stone in and around the dwelling. The outline of the dwelling is clearly seen from the distribution pattern, but it is interesting to note that there is no specific concentration of fire-shattered stones around the stone-paved hearths. In order to illustrate this better, two stone-paved hearths lying outside the dwelling are marked with circles. The greatest concentrations of fire-shattered flint occur in places where cooking pits or sunken hearths were registered. The interval between the lines is 10.

Fig. 9, below, right. Distribution of axe sharpening flakes, burin waste and Krukowski microburins. The concentrations reveal various activity areas at the site where flint tools have been produced, repaired and used. The flint-knapping workshop, the centre of which is shown completely black, shows very high values for Krukowski microburins, as it was almost exclusively transverse points which were produced here. In the dwelling two distinct activity areas can be seen. These possibly indicate that the dwelling was divided up into two rooms, a conclusion supported by the location of the hearths and of two large stones on the edge of the depression. The interval between the lines is 1.

Fig. 7.

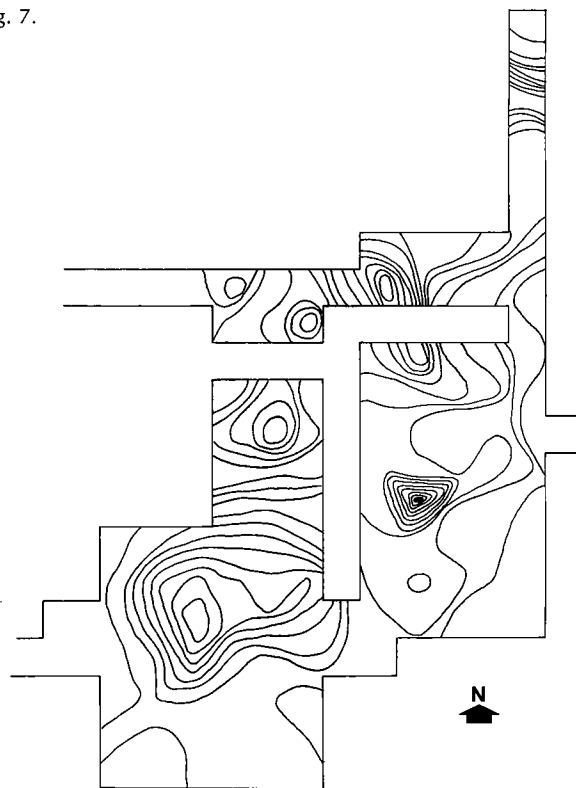


Fig. 8.

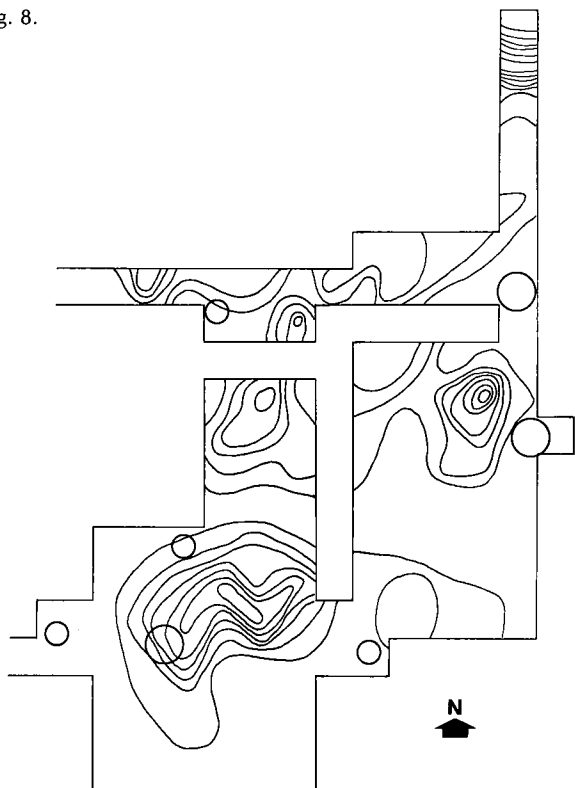
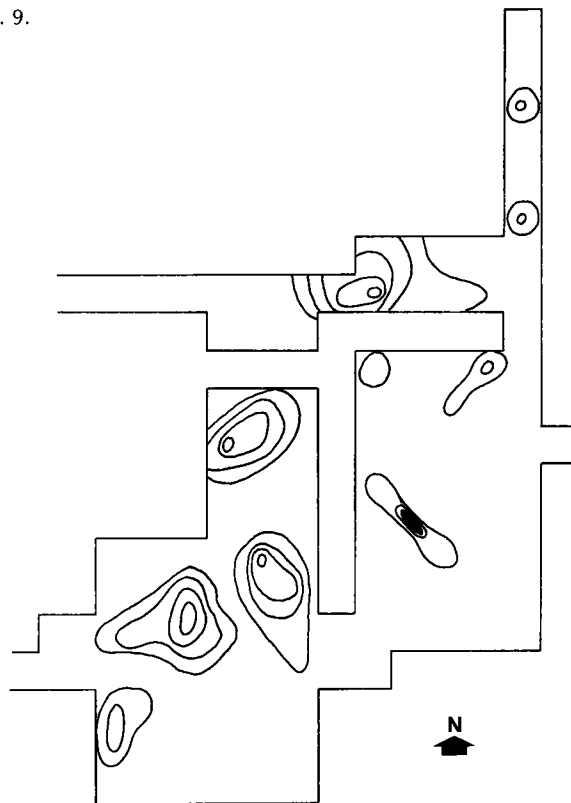


Fig. 9.



has never won acceptance as the remains of a dwelling, although it was unambiguously interpreted as such by the excavator (Simonsen 1952:199).

This is not a direct parallel to the dwelling site at Lollikhuse, and a number of factors, including the lack of posts and the pronounced slope of the floor level (3) does not seem consistent with an interpretation of the feature as a dwelling. On the other hand the locality at Vegger cannot be completely dismissed, as postholes could possibly have been overlooked.

2. *Vængesø*, Helgenæs, is another locality where excavation of a coastal slope in order to create a level surface has been observed (S.H. Andersen 1975). Apart from a large elongated hearth along one side of the terrace (4), no traces of constructions were demonstrated in connection with the levelled area (S.H. Andersen 1975:15). Mention is however made of the fact that the concentration of finds was greatest in the levelled area.

According to the excavator, the hearth's eccentric location on the levelled area is evidence against the interpretation of the terrace as a dwelling site, despite the fact that he refers to the site at Vegger where the same observation was made (S.H. Andersen *op. cit.*). We also see an eccentrically located hearth at Lollikhuse, so this detail should not be used negatively in an evaluation of the *Vængesø* terrace as a dwelling site. However as the excavator himself quite rightly concludes, it is not possible to establish with certainty whether there has been a dwelling on the surface of the terrace as any evidence of a construction is lacking.

3. *The Ertebølle site (locus classicus)* has also been mentioned in connection with traces of dwellings with sunken floors (Simonsen 1952:222 ff.), but in this case re-examination of the site was able to discount the presumed feature (S.H. Andersen & E. Johansen 1987:48).

4. *Strandegård*, which contains remains from both the Ertebølle and Funnel Beaker Cultures is yet another site from where the remains of a dwelling with a sunken floor dating from the Ertebølle Culture have been published (H.C. Broholm & J.P. Rasmussen 1931:265 ff.). The fact the feature described is the remains of an Early Neolithic long barrow seems beyond reasonable doubt today.

5. The best parallels to the Lollikhuse dwelling are to be found in Scania. At the settlement site of *Skateholm I*, a very large slightly sunken feature (anlæg 10) has been investigated and interpreted as the remains of a sunken dwelling (L. Larsson 1985). The depression has a depth

of between 0.2 and 0.3 m and it measures no less than 10.7 x 6.5 m (L. Larsson 1985:199). At the base of the sunken area 23, features are registered which are interpreted as postholes (L. Larsson 1985:200), as well as an eccentrically-located hearth in the southwestern corner of the sunken area (L. Larsson 1985:291). A more centrally-located hearth was shown by radiocarbon dating to date from the Late Bronze Age and can therefore be ignored.

6. A feature described as the remains of a sunken dwelling is also known from the Kongemose settlement of *Saxtorp 11.9* in Scania (L. Larsson 1974). The depression here measured 5 x 4 m and the depth varied from 0.1 – 0.4 m (L. Larsson 1974:6). At the base of the depression there were four features which are interpreted as postholes, as well as an area in the western part of the depression with burnt stone and charcoal, interpreted as the remains of a hearth (L. Larsson 1974:7 ff.).

7. At the site of *Bredasten* in Scania we find a seventh structure interpreted as a dwelling from the Ertebølle Culture. It might be considered here even though the construction, consisting of a circular ditch and some postholes, is somewhat different from the Lollikhuse dwelling. Despite the fact that the floor is not actually sunken, this hut structure may be related with the structures mentioned above. The *Bredasten* structure measures 6 x 6 m. The circular ditch is 0.5 – 1.0 m wide and 0.1 – 0.4 m deep. Faint traces of charcoal in the centre are interpreted as the remains of a hearth (M. Larsson 1986).

It has not been possible to find absolute parallels for the Lollikhuse dwelling, but it appears to have some features in common with the sites in Scania, notably a slightly sunken floor and a non-central hearth, usually on the western edge of the sunken area. One feature which clearly distinguishes Lollikhuse from the two Scanian dwelling sites is that in the former the postholes in the construction are located around the margin of the dwelling whereas in the latter they are located in the dwelling itself.

An obvious question is why have we not found more features of this kind, given the numerous excavations which have taken place on our Ertebølle sites? An important factor to be considered, is that in the majority of Mesolithic excavations large areas have not been exposed and without these it is almost impossible to demonstrate the presence of a dwelling site. Another explanation is that there were probably several dwelling types

in existence contemporaneously in Ertebølle times. This situation is known from a series of ethnographic parallels in hunter-gatherer societies, for example in Greenland, where there is a very marked difference between winter and summer dwellings. The dwellings with sunken floors need only represent one of the dwelling types which were in use in the Ertebølle Culture.

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#### NOTES

1. The kitchen midden lies in Selsø parish, parish register no. 77, Hornsherred, Frederiksborg county.
2. The excavation in 1991 concentrated on two of the large areas of dark fill, feature 9 and structure 21. Feature 9 is by far the largest of the features investigated and as yet it has not been excavated in full. Accordingly its absolute size and function is not yet known.
3. On the section drawing on p. 206, fig. 6 it is evident that the "floor level" slopes no less than 0.5 m over a distance of only 2 m, which must be seen as rather excessive if the structure is to be interpreted as a hut.
4. The hearth measured no less than 4.8 x 1.5 m.

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