Journal of Danish Archaeology vol. 1, 1982, pp. 51–63

Kirkebjerget - A Late Bronze Age Settlement at Voldtofte, South-West Funen

An Interim Report on the Excavations of 1976 and 1977

by JOEL BERGLUND

One of the most renowned of sites in settlement studies relating to the Late Bronze Age is the classic settlement adjoining the present day village of Voldtofte lying approximately halfway between Assens and Hårby on West Funen. The site initially came to light in 1908 as a result of public works. It was subsequently excavated in the years 1909 to 1911 and once more in 1915 and 1916. The finds were many, drawing much attention because here, for the first time, was a large quantity of pottery attesting to the versatility of the potter of the Late Bronze Age. Further finds afforded clues to subsistence, to the economy and social fabric, while a single discovery of grain remained for many years the largest of its kind from the Late Bronze Age (Thrane 1980).

In 1909 Carl Neergaard of the National Museum investigated a culture layer on the southern slope of the hill, which had been dug into during road construction (fig. 1.). The culture layer which contained a rich material from the Late Bronze Age measured 48 m. N-S and 18–20 m. E-W. During the years 1909–11 altogether 110 m² were excavated. Four small test pits were furthermore dug on the northern slope of Kirkebjerget where a similar culture layer had come to light, likewise being partly removed by road digging.

In 1915 excavation continued on the northern slope. The extent of the culture layer was determined by means of a series of test pits, giving the outline shown in fig. 1. Approximately 250 m² were excavated on the northern slope during the campaigns of 1915 and -16.

The finds were first published in 1919 by Sophus Müller when, in somewhat summary fashion, he announced the findings from Bronze Age settlement sites in Denmark. Attention to the site was refocused in 1967, this time with a view to testing Müller's ceramic dating while also incorporating the settlement within a wider field of enquiry (Jensen 1967). In assessing the former researcher's work one should bear in mind those methodological short-comings which make it difficult to use the material to illuminate settlement in the Late Bronze Age. A comprehensive re-examination of this particular site was required before the finds could be used to this end.

Such an opportunity came a good ten years later when the council of Glamsbjerg (who administered the area) embarked upon a building programme. Before this could commence, however, the area had to undergo an archaeological survey in compliance with paragraph 49 of the Conservation Act. This happy opportunity brought about an almost total examination of the area in 1976 and 1977.

The new excavations took place on the eastern and southeastern part of the elevated area known as "Kirkebjerget" which formerly separated the now amalgated villages of Voldtofte and Flemløse. The northern slope of the ridge has been totally urbanised since the early excavations, being terraced in several steps so that where the culture-layer survives it is inaccessible. The south side of Kirkebjerget, however, had remained agricultural until 1976, when it yielded its last harvest.

The highest point of the field lies to the northwest where it rises to approx. 69.3 m. above Danish mean sea level. From here it slopes evenly down to the middle of the field where, at 64.2 m. it levels out into a small plateau. From here the descent continues down

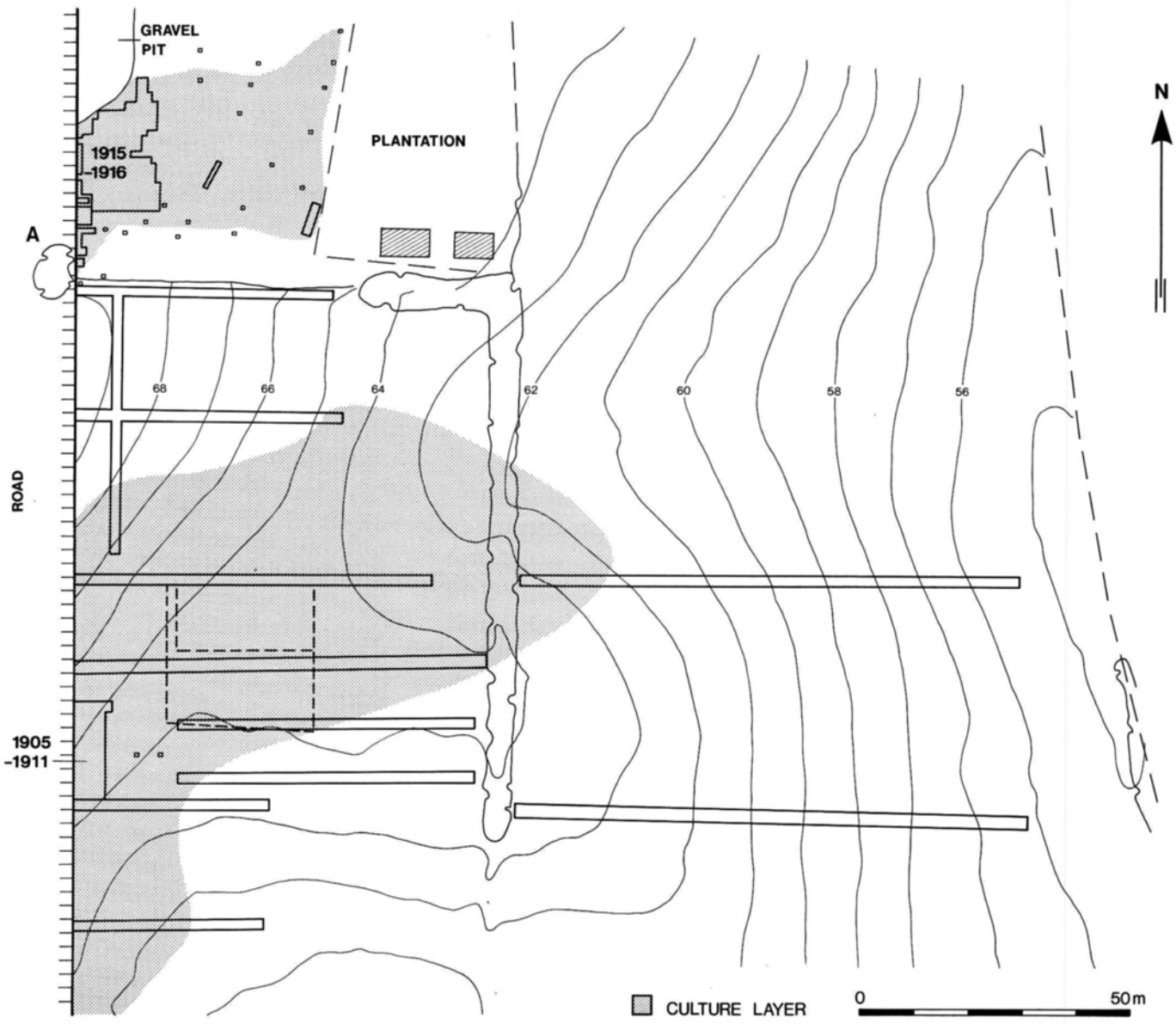

Fig. 1. Plan of the excavations at Kirkebjerget. The trial trenches of the 1976–77 excavation are shown together with their extensions during the 1978 supplementary investigation. "A" indicates the position of the five grain vessels found 1908.

to the southern edge of the field at 60 m., spreading for 9.3 m. The northern slope seems to have compared with such a topography.

In order to locate and plot the full extent of the culture-layer a grid of trial trenches was drawn across the whole field. It extended furthest in an east-west direction, the field being barren of finds above the altitude of 67 metres. The maximum width stretched north-south and was interrupted by the road from Voldtofte to Flemløse, lying to the west. The culture-layer tapered to a point in the east. This implies that the layer derived from the west and not from the top of ridge. The total field area was 11.300 m², an estimated half of this being covered by the culture-

layer (fig. 1). The layer apparently continued to the west of the road, though at the time this was not open to confirmation.

The thickness of the culture-layer varied from 15 cm. to more than 150 cm. (fig. 2), the thinner parts lying along the layer's northern and eastern peripheries.

Equally variable was the depth of the soil between the present-day field surface and the culture-layer which, in some places surfaced into the ploughsoil earth, especially towards the southernmost end of the field, while to the north it lay as deep as 150 cm. The Bronze Age field-surface profile differed somewhat from that of the present day. Apart from lying deeper the slope descended less regularly, in that a little more than halfway north the slope was intersected by a trough or ditch, its bottom running 3 m. below the present-day surface. South of this the terrain became more even, descending uniformly to the foot of the slope.

The culture-layer contained the following elements (listed in order of quantity): carbonized grain, fire-shattered stones, pottery, flint, burnt clay-daub, charcoal and bronze. The vertical distribution of these revealed the greatest abundance of flint and pottery (the two most important elements) in the upper 40 cm. of the culture-layer.

Below this dispersion density declined rapidly to zero at the bottom of the layer, lying on average 70 cm. beneath the culture-layer surface. The burnt clay-daub occurred throughout the entire depth of the layer, concentrating at 10 – 20 cm. beneath the layer-surface. This clay-daub converged on the aforementioned trough where it formed a close, continuous layer in which the other elements were sparsely represented. There was no evidence for any sort of structure: it was throughout an accumulation of fragments from one or several burnt-out houses brought to this place as débris. All of the examined culture-layer should be interpreted as a gradual piling up of rubbish, deposited over several years and accelerating towards the close of the settlement period. In no place was there a clear chronological sequence with regard to artefacts: chronologically diagnostic pottery occurred in upper and lower layers, regardless of period.

The features outlined above are in close accord with Sophus Müller's own observations and with his interpretation of Kirkebjerget's southern slope (Müller 1919, 43). There can be no doubt that in both cases these culture-layers are accumulations of rubbish from a settlement area most probably lying to the west of the road connecting Voldtofte and Flemløse. This interpretation is strengthened by the outline of the culture-layer's perimeter, its maximum width lying north-south. It seems logical that the distribution would be widest at the source, shrinking thereafter in proportion to its distance from the source. Furthermore, the dip in the field to the south and east also suggests deposition from the west.

Fig. 2. The culture layer at its deepest point.

After preliminary investigations in 1976 it was decided to lay bare the surface in that part where the layer was thickest as well as the plateau immediately south of the trough or ditch. The intention of the excavation was to test whether this idea of a settlement area and separate culture-layer held good, or whether house-structures could indeed be traced within or beneath the layer. Altogether, an area of 729 m² was exposed, 228 m² being manually excavated in meter squares. In all 800 tons of earth were removed. Some of this went towards re-heightening the nearby burial-mound of Lusehøj (likewise dating to the Late Bronze Age) (Thrane 1973:5).

Fig. 3. Pits below the culture layer.

Fig. 4. Pit with boulders during excavation.

THE PITS

Once stripped there appeared a sandy surface punctuated by 93 black patches, these marking large or small diggings (fig. 3). From the distribution and nature of these holes it soon became clear that they were unassociated with house structures and that they must have had some other function. All the holes seemed to have been made prior to the formation of the culture-layer, as none could be traced through it. Indeed, the culture-layer rested snugly upon the top of each hole. A further peculiarity was that no hole intersected any other – in other words, all holes must have featured contemporaneously. In plan the holes were generally oval to circular (fig. 5). In section they varied from sack-like to conical in shape (fig. 6). At first all the holes were most probably sack-shaped, becoming more conical as their sides gradually eroded.

Those of the latter shape, therefore, testify to greater age, their sides having been exposed for a longer time than the bag-shaped holes. This erosional migration could be seen clearly in section as a U-shaped sandy layer of the same consistency as the pit sides. Over this lay the culture-layer whose contents had subsided in a sloping manner, indicating a gradual in-filling (cf. Limbrey 1975, 291). The holes varied somewhat in size, depths ranging between 10 and 100 cm., diameters from 30 towards 200 cm. Most of the pits contained fire-shattered natural boulders varying from fist- to football-sized. These were found either scattered throughout the pit in-fill or, in frequent cases, half covering the pit in a densely packed layer (fig. 4). The fill between the stones contained flecks of charcoal while the bottom of each pit was often covered by a greasy black layer of dissolved charcoal, deposited by percolating water. The sides in many instances bore traces of intense heat, often appearing crusty or granulated.

Finds of flint, pottery or bone always occurred in the upper half of the pit, never at the bottom. Such finds were always associated with the later jettisoning of rubbish.

Everything points to these pits having been used for heating, indeed that they were oven-pits (Thrane 1974; 96). Since it was equally possible that the pits might have played some part in the drying of grain, samples were taken from the bottom layer for sieving. However, all results unfortunately proved negative,

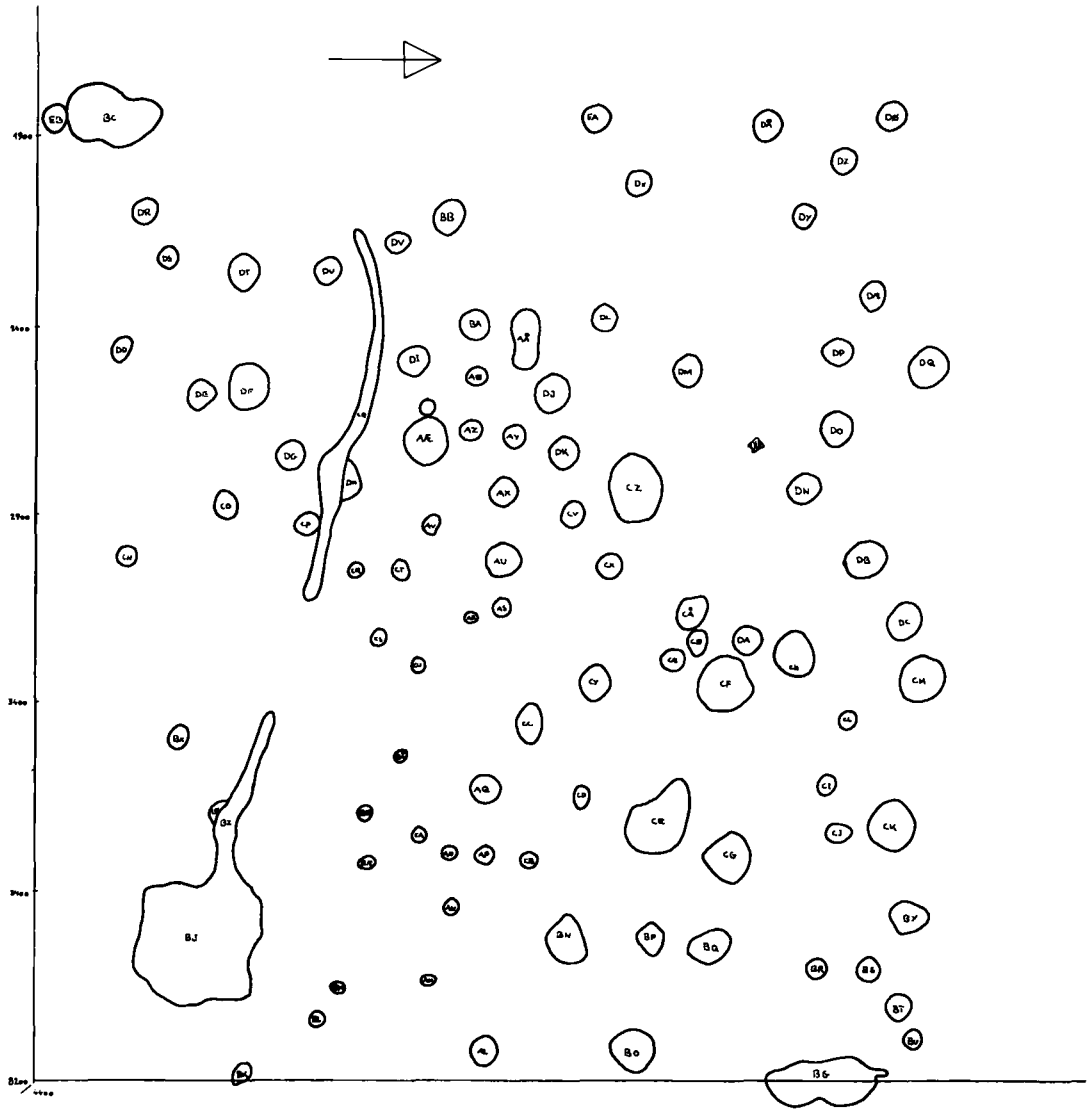

Fig. 5. Plan of pits below the culture layer. 1:200.

the sole botanical remains discovered being a few hazelnut shells and three hawthorn-berry pips.

It is difficult to arrive at any explanation for the remaining pits. These could not have been for refuse since, as the foregoing pits, they were entirely devoid of finds, excepting the uppermost layer which had been invaded by the all-covering culture-layer.

THE COOKING-STONE CAIRN

A trial trench immediately to the east of the exposed area had unearthed a pile of fire-shattered stones. The pile of stones comprized boulders of varying size, none so big that they couldn't be lifted. Each stone's common feature was the fact it had been affected by fire. Furthermore, the pile was not simply a random heap but had been meticulously constructed by the insertion at various angles of firmly interlocking stones. The in-fill took up approximately 50% of the total mass, and varied in colour from black in the middle to brown at the surface where it also included scattered sherds. The bottom layer was in places covered by a thin, yellowy grey layer of sand. The whole sequence has been interpreted by the excavator as a thin cul-

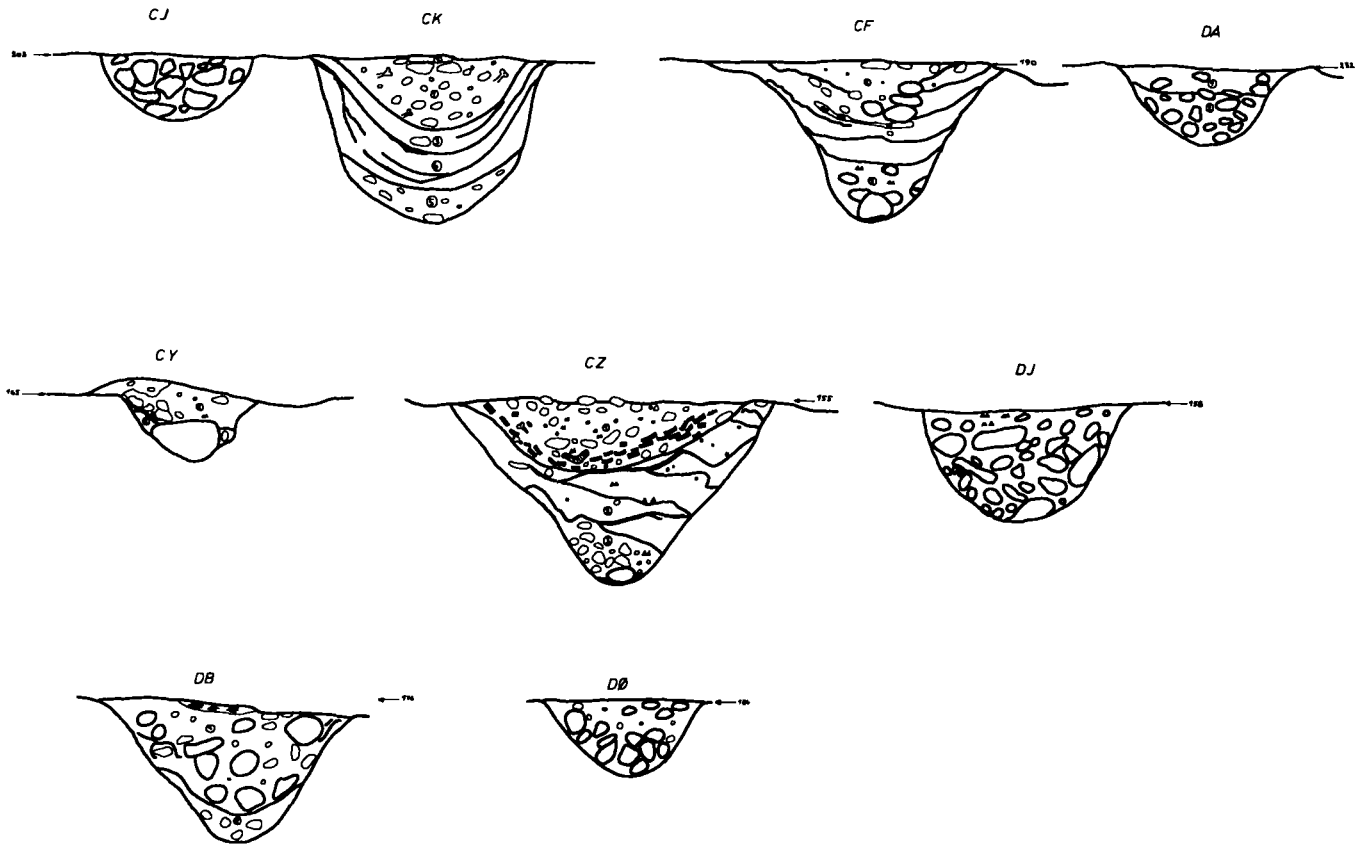

Fig. 6. Sections of pits. 1:40.

ture-layer covered by aeolian sand prior to the heaping of the stones. On removing all stones less than hand-sized and those not lying directly upon the ancient surface in the eastern quadrant, three apparently concentric stone circle arrangements were disclosed (fig. 7). The outermost comprised sixteen stones measuring 20 to 38 cm. Sixty centimetres within this lay a double circle of seventeen stones measuring up to 37 cm., two of these being fragments of quernstones ruptured by fire. Finally, 140 cm. within the outermost circle lay an inner double-rowed stone circle of stones measuring up to 44 cm. The outher diameter of the stone pile was estimated between 15 and 17 m., though since its northern segment was not investigated it might be somewhat greater.

There can hardly be any doubt that this is a cairn, a so-called cooking-stone cairn. Bornholm excepted, these are only found in any numbers in Odsherred, NW Zealand, connected precisely with settlements of the Late Bronze Age (Thrane 1975: 173). The full height of the cairn could not be gauged on account of the levelling effect of years of cultivation. However, to compare with the cairns of Odsherred it would probably not have exceeded 2 m. in height.

After the excavated segment of the cairn had been removed there appeared a culture-layer in composition largely identical to the layer encountered in the surface exposure. Here too the surface was punctuated by numerous pits, several of these, however, turning out to be post-holes.

Altogether 23 pits and 24 definite post-holes were identified. The culture-layer under and near to the cairn was characterized by small concentrations of mud-daub which in places covered areas of mottled, unburnt clay. These layers seem to have been formed prior to the introduction of the pits, which, when it could be determined, penetrated the layers. Both in morphology and sediment these pits do not seem to diverge substantially from those described above. The majority, therefore, can be grouped within the same

class, that is, as oven-pits. Since a number of pits from both areas were either bereft or devoid of burnt stones it would follow that their contents had been reutilized in the building of cairns along the settlement perimeter. It is not impossible that the unexamined neighbouring fields may yet reveal the ploughed out remains of further cairns (Thrane 1975, 174).

TRACES OF HABITATION

In addition to the burnt clay-daub, several other features in this area might point to the former presence of a building. Let us, for the time being, suppose the areas of black and yellow speckled unburnt clay to be the remnants of a house-floor and the heavy concentration of overlying mud-daub, a collapsed wall. Such an interpretation is strengthened by the discovery between daub and supposed floor of a smashed pottery vessel. One may suggest that the vessel was standing upright when crushed by some form of subsidence, perhaps that of a collapsing mud-wall. This picture, however, is not substantiated by the evidence of the post-holes, eighteen of which can be deemed to be later features as they penetrate the very layer containing the mud-daub. Nor are we helped in this interpretation by the remaining six post-holes which, however we look at them, lie too un-regularly and far-spaced to infer a house structure. The remarkably substantial fragments of mud-daub suggest somewhat massive walls requiring a weight-bearing frame which, in turn, would have entailed easily recognizable post-holes within the soil. We can only conclude, therefore, that this was not the house supporting area, that the scattered yellow patches of clay are not floor layers, and that the culture-layer should be seen as a layer of rubbish similar to its larger western neighbour of which it is an eastern extension. For the present we must postpone any explanation for the crushed pottery vessel.

THE ARTEFACTS

Pottery, the most predominant artefact, was present throughout almost the entire area under investigation. In all, 12,934 sherds were collected. Disappointingly few of these, however, were capable of reconstruction into larger surfaces. Nevertheless, sufficient of this material is characteristic enough to allow broad identification. In order to gain some overall impression of the total sherd assemblage a detailed examination of 1,084 sherds was undertaken so as to incorporate the full depth and extent of the entire culture-layer. By the attribute of surface texture the whole ceramic material can be divided into three categories: 1) smooth; 2) sandy/rough; and 3) coarse/gritty, almost granular. The first column of the following table shows the relative frequency of the 1,084 sherds between each category. The second column shows the average ware-thickness per category:

Fig. 7. Segment of the cooking-stone cairn during excavation.

surface texture	frequency	average ware thickness
smooth	25%	66% between 6 and 8 mm
sandy	35%	74% between 8 and 10 mm
coarse	40%	70% between 10 and 12 mm

This random sample, incorporating 8 % of the total number of pieces, is a statistically meaningful one and may be considered representative of the whole assemblage. We see, therefore, that most of the settlement's pottery detritus comprises rough and coarse

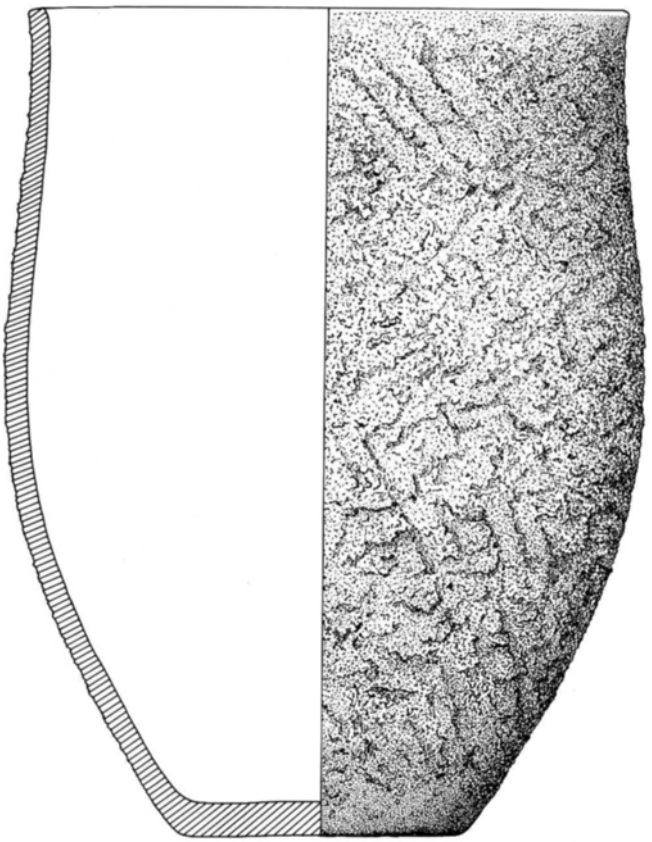

Fig. 8. Coarse storage vessel (Claus Madsen del.). 1:4.

wares. However, we should not take these percentages as the actual frequencies of production since coarser vessels are generally larger and will have left more sherds than the finer ones. Even ignoring the percentages, however, it is still clear that the coarser wares were produced on a larger scale than the finer ones. It has hitherto not been possible to conduct a minute analysis of the very large total assemblage using a meaningful typology, nor with regard to individual variations.

Even so, the major features all point in the same direction as the 1967 investigation (Jensen 1967). The reader is as far as possible referred to that study, as most of the types of pot analysed there are found also in the present material. Most sherds were of large, coarse food-storage vessels with a slurried, gritty, or rough surface (fig. 8). A small number of these are decorated with ribs or studs applied under the often finger-wide smoothed rim (Jensen 1967, figs. 12–14). Also to be seen are rims with finger indentations all the way around (idem., fig. 15, 2). These vessels date with high probability to period V.

Within the group of storage jars can be discerned a small number of vessels certainly dating to period VI. These are characterized by their evenly rounded form, a smoothed band under the rim below which are applied horizontal ribs, interrupted or continous. In this assemblage these pieces are represented by types such as those illustrated by Jensen (1967: 124, figs. 1, 4, 5 and 11). As in the previous investigation sherds of this type are very rare. Surfaces of food-storage vessels vary from a rough sandy texture to a very coarse, granular one, ware thickness sometimes reaching 20 mm.

One-third of the material from the previous investigations comprised fine or smooth-surfaced vessels (i.e. approximatelty 13,000 sherds). In the present investigation the proportion is considerably smaller: if the random sample holds good only one-quarter. We have succeeded in finding only a very few vessel-profiles within this group. While even small rim-sherds may give clues we are otherwise in the dark.

Bowls were represented by six rim-sherds, one of which (a slightly coarser specimen than the others) relates to a vessel from the original find with a vertically grooved handle (Müller 1919: 45 and fig. 5). The remaining five rim-sherds all fall within the type with an inward recurved neck and a sharp ridge at the meeting of neck and belly (Jensen 1967: 114, fig. 9). Bowls of this type cannot be dated more precisely than "Later Bronze Age". Covers constitute a small separate group, and of these one complete example has been found plus six fragments. Six were of domed form answering to the scheme of *Aarbøger*, 1967: 113, fig. 8.

The last cover was of the flat-topped sort with an under-hanging lip for enclosing the vessel-rim (Broholm 1949, pl. 41: 4). The covers can only be dated to the span of periods IV and V, a time when they had achieved widespread distribution throughout Denmark.

Peculiar to a great deal of finer pottery from the original find was the common occurrence of grooved decoration. Horizontal grooving is an especially important stylistic attribute of period V. It is rarely seen in the new material where decorated sherds of any sort are altogether scarce: only 0.5% (69 pieces in all) of the total assemblage exhibit ornamentation. Of these, three (all from the same vessel) are horizontally

grooved (as in *Aarbøger* 1967: 111, fig. 7:11), nine have thin grooves widely spaced and alternating with vertical chevron clusters (almost as in Broholm, vol IV, pl. 48:5). Instances of vertical grooving also occur as well as horizontal grooving over a basket-weave band (that is, a single thin groove incised under the rim and over a band incised with alternately criss-crossing lines in imitation of basket-weaving). Other forms of decoration are: combed ornament (Jensen 1967: 111, fig. 7; 23) and impressed lines alternating with oblique bands. Decorative motifs are completed by simple incised V-bands, vertical fluting and impressed fingermarks (Thrane 1971, 156). As far as the 1967 investigation goes, most of the decorated sherds could be assigned to period V, although occasional variants might span a longer time-period.

Under the heading of ceramics we may also include a circular loom-weight of fired clay which, in conjunction with sheep-bones, points to the local manufacture of textiles.

While all these features largely reiterate the previous excavations our attention now turns to the many *chunks of burnt clay-daub* which were unearthed. During the find registration in the museum in Odense (Fyns Stiftmuseum) faint traces of colour were observed. On closer examination this was confirmed by the discovery of flat surfaces upon the actual daub bearing white or brown-coloured plaster. This surface had a striated appearence, as if smoothed out by brush. The plaster layer varied between 1 and 3.5 cm. Several overlying layers of plaster testify to regular maintenance. It follows, therefore, that houses must have stood for some years. In several cases on the plastered surfaces traces of decorative paint-work in red-brown or black were seen (fig. 9). Unfortunately, however, all pieces were too small for any actual pattern to be reconstructed. Irregular line groupings were often seen as well as a single occurrence of the S-motif, an ornament peculiar to period V (fig. 10). Also found among the chunks were parts of decorative moulding in the form of applied clay bands of variegated profile. It transpires that the Bronze Age house was not so plain after all. It will no doubt become clear that the Voldtofte settlement was by no means unique in this respect (Thrane 1979: 10). In point of fact we already possess a parallel in that similar paint-work has been recorded among the house-remains from the settlement of Skamlebæk in North-West Zealand, likewise dating to the Later Bronze Age (Lomborg 1979: 4). The attention must also be drawn to the occurrence of painted plaster in the celebrated royal tomb of Seddin in Brandenburg (Kiekebusch 1928), dated to period V. Such fine decoration and meticulous maintenance was perhaps not the norm within the settlement at Kirkebjerget. Indeed it suggests a division into a

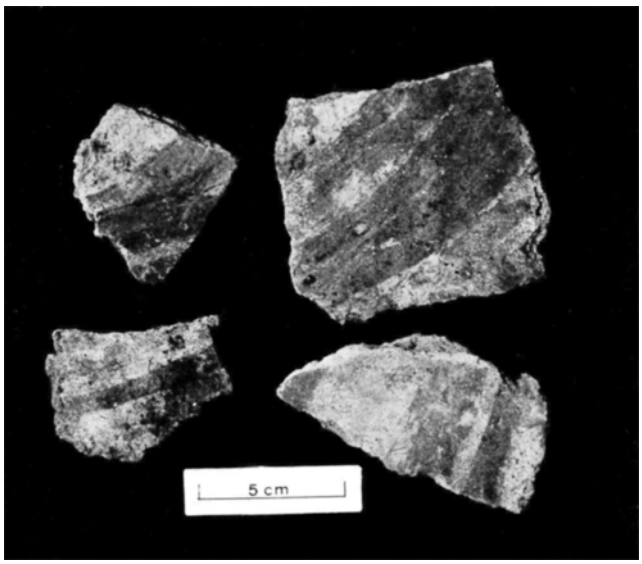

Fig. 9. Fragments of painted plaster.

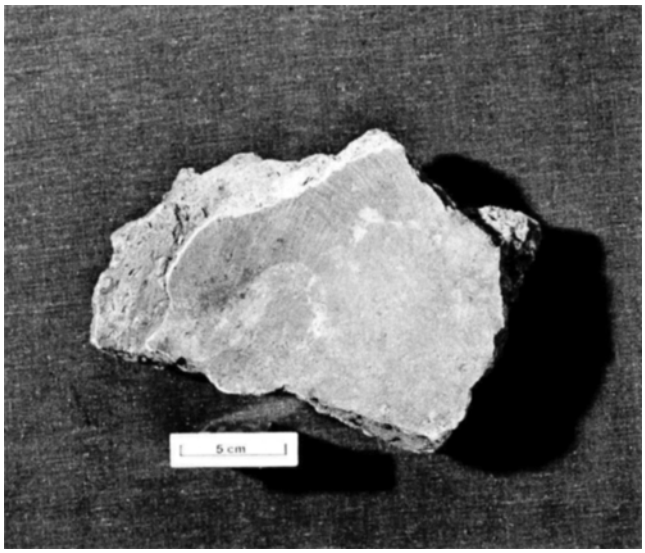

Fig. 10. Fragment of painted plaster with S-motif.

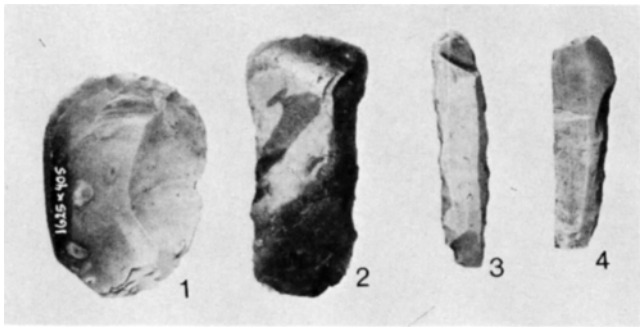

Fig. 11. Flint artefacts from the culture layer. 1–2, scrapers. 3, firestriker. 4, blade knife.

higher and a lower class, such as in a lordship or chieftainship. Similar conclusions have previously been suggested by the rich gravefinds from the top of Kirkebjerget as well as from the immediate vicinity. Perhaps it would be appropriate to abandon the term "settlement" (with its implied lack of permanence), substituting "village" – a seemingly more apt designation for the community on Kirkebjerget.

Even though more than 2,000 pieces of *flint* were discovered few of these were recognizable artefacts. By far the majority were irregular flakes or core-waste from their manufacture. The vertical distribution of flint within the culture-layer mirrors the pottery, the largest quantities accruing towards the end of the layer's formation period. Horizontally it permeated the culture-layer's full extent.

The actual flint workmanship was of an altogether crude nature, characterized for the greater part by violent blows, knocks and crushing. In order to produce such shatter-scars the raw flint must frequently have been hurled against some other stone, so that blanks often lack any formal bulb of percussion. Of the 2,309 collected pieces of detritus 262 exhibited a bulb of percussion. Altogether 18 pieces could be designated "blades" in the formal sense. No regular cores were found but 29 nodules of the sort described by Sophus Müller (1919: 49) were unearthed.

The most common artefact was the scraper, of which 34 examples were found (fig. 11: 1–2). Thirty-two of these were scrapers on flakes (14 long and 18 rounded), while only two were blade-scrapers. In thirty-three instances the scraping edge was diametrically opposite the bulb of percussion. In only one case was the bulb itself trimmed for scraping. Edges were produced by flaking from the bulbar surface although reverse flaking was also seen. Furthermore, edges formed by crushing were not unusual, especially on the larger artefacts.

Borers, of which there were four, had all been manufactured upon flakes of the most elementary preparation. The working point had been fashioned by unilateral or bilateral retouch, and in two cases the gripping end had been extensively retouched so as to illiminate troublesome irregularities.

There were altogether six fire-strikes and, lastly, three wellmade flint knives, all executed on blades retouched with hand and fingergrips. The only harvesting implement discovered was a crude blade-knife, one side worked for mounting in a wooden haft as a sickle (Broholm 1953, type 457). Also among the flint was a quantity of indeterminable retouched pieces as well as occasional fragments of Neolithic polished axes, one of which had probably been employed as a hammer-stone. Odd fragments of detritus with part polished surfaces show that polished axes were also used as cores or for raw material.

Grain milling was attested by several discoveries of fragmentary quern-stones. The best worked piece was an unfinished mace-head made of polished stone. Lastly we must mention 14 crushing stones, mostly of quartzite and crushed over their entire surfaces. All were more-or-less spherical in form and of near-equal size.

There is nothing out of the ordinary within the flint and stone assemblage. It can be characterized only by its paucity and preparatory nature, mirroring other assemblages from contemporary sites within Denmark (Thrane 1975, 153).

As might be expected of a midden, *finds of bronze* were few (fig. 12). The extensive surface stripping produced only three pieces: a knife, the edge of a celt axe, and a wholly intact knife with a ring-shaped shaft. The cairn excavation also yielded three pieces: a knife, a complete torque, and part of another. Adding these unimpressive pieces to the bronzes from the previous excavations we arrive at a total of 26 pieces. Their very nature and paucity emphasise the high prestige-value of bronze, even on a settlement so apparently well-appointed as Voldtofte.

The many incomplete grave-finds recovered over

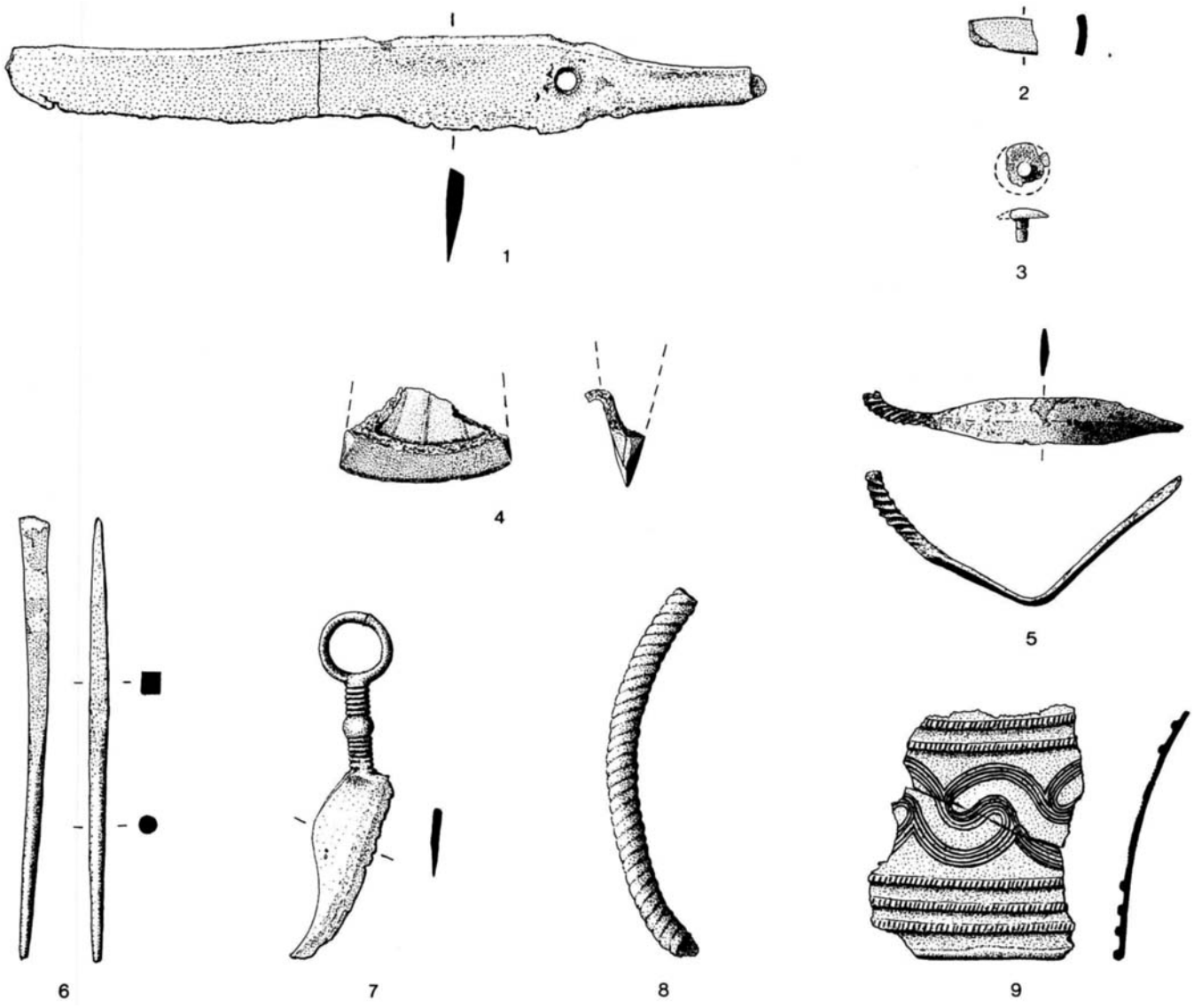

Fig. 12. Objects of bronze found within the settlement area. (Claus Madsen del.). 2:3.

the years from the immediate vicinity of Kirkebjerget (presumably related to the Bronze Age village) by no means suggest a scarcity of bronze in the area (Jensen 1967, 182). Discoveries of crucibles and of sword-casting moulds from the previous excavations show, firstly, that there was an abundance of raw material and, secondly, that there existed an advanced metallurgical expertise. On uniting these two complementary features it becomes clear that bronze played a dual role: on one hand as a raw material for superior artefacts, ornaments and weapons, and on the other as an acceptable currency for transactions large or small.

ZOOLOGICAL AND BOTANICAL MATERIAL

In addition to artefacts, materials of a zoological and botanical nature were also collected, completing the comparison with the former excavations. This material has been identified by Tove Hatting of the Zoolo-

gical Museum, Copenhagen. We here present the summarized results.

Altogether 3,397 bone fragments were collected. Of these 1,359 could be identified to the species. The majority, approx. 82 %, were of cattle (*Bos taurus domesticus*), 11 % pig (*Sus scrofa*), 5 % sheep (*Ovis aries*), 2 % horse (*Equus caballus*), 0.2 % dog (*Canis familiaris*), and finally 0.1 % red deer (*Cervus elaphus*).

Immediately striking is the almost total lack of wild game as well as the two predominant groups of cattle and pig. These were exactly the features noted in the previous investigations, where, excepting two fragments of goat and roe deer, the groups were identical. Even the relative frequencies can be seen to concur (Winge 1919: 33).

Quantity comparisons between the charcoal collected from both excavations are not directly feasible, in that K. Jessen's table records only the number of squares yielding charcoal rather than (as in the latest investigation) the actual number of charcoal fragments. Charcoal samples were analyzed by Peter Wagner of the Central Botanical Libray, Copenhagen.

tree	1919 no. of squares	1976–77 no. of fragments
Fraxinus sp. (ash)	53	134
Corylus sp. (hazel)	32	89
Quercus sp. (oak)	23	30
Betula sp. (birch)	31	0
Fagus syl. L. (beech)	5	1
Ulmus sp. (elm)	1	0
Other deciduous	12	
Alnus sp. (alder)		5
Tilia sp. (lime)		53
Acer sp. (maple)		6
Pomoideae (apple, pear, hawthorn etc.)		3

Probably most noteworthy of the original find were the five large pottery vessels discovered in 1908 inserted in a hole in the sand and standing close together in a row, approximate position of the find indicated on fig. 1 (A). From these were retrieved the first quantities of prehistoric bread-corn of any size. Three of the pots were sent to the National Museum (Thrane 1980, fig. 2. – Two of the vessels are illustrated in Jensen 1967, fig. 3). The vessels were interpreted as corn-storage vessels, in keeping with what was known from classical antiquity. Nor was there any lack of grain from the last excavation, where it occurred throughout the culture-layer. A large number of grains were washed out by hand or mechanically during the excavation:

	1919	1977
Hordeum (barley)	approx. 190 grams	412 grains
Triticum (wheat)	approx. 20 grams	120 grains
Avena (oats)	0	2 grains
Panicum (millet)	69 grams	23 grains

The original grain-find was analyzed by the botanist Ove Rostrup, the latest find by Peter Rowley-Conwy, Cambridge.

In both cases barley can be seen to predominate, being represented largely by the six-row husked variety – *Hordeum vulgare* var. *nudum*. The wheat varieties were nearly all spelt and emmer – *Triticum spelta* and *Triticum dicoccum* – common wheat being represented by only seven grains (*Trit. aestivum / aestivum grex.*). Oats (*Avena*), in contrast to barley and wheat, is a secondary cereal, originally occurring in the field as a weed. With the passing of time oats evolved certain crop-like features, and from the Later Bronze Age onwards they appear as common oats. The few instances recorded from this period may indicate that the cereal had not yet become an independent cultigen and that it occurred as a mix within wheat and barley crops.

CONCLUSION

In this discussion of the latest in a series of excavations the many questions posed by the ancient village on Kirkebjerget have received far from exhaustive answers. One issue, however, does seem settled, namely, that all previous excavations have undoubtedly been of a rubbish heap adjoining a settlement area. The latter, in the author's opinion, should be sought to the west of this midden. And as this area is still under cultivation it should be possible to test this theory before the lapse of yet another 58 years.

Translated by Lars Broholm Tharp

NOTE

The excavations at Kirkebjerget were directed by the author on behalf of *Fyns Stiftsmuseum*, Odense, where the finds are kept under file no. 1625. The excavation of the cooking-stone cairn was undertaken by the University of Odense and *Fyns Stiftsmuseum* in 1977–78.

REFERENCES

BROHOLM, H.C. 1949: *Danmarks Bronzealder* IV. Copenh. 1949.

– 1953: *Danske Oldsager IV, Yngre Bronzealder* (*Danish Antiquities IV, Late Bronze Age*). Copenh. 1953.

JENSEN, J. 1967: Voldtofte-fundet (*Voldtofte and Late Bronze Age Settlement Archaeology in Denmark*). *Aarbøger for nordisk Oldkyndighed og Historie* 1967. Copenh.

KIEKEBUSCH, A. 1928: *Das Königsgrab von Seddin.*

LIMBREY, S. 1975: *Soil Science in Archaeology. Studies in Archaeological Science.* London.

LOMBORG, E. 1979: Urnehuset. *Skalk* no. 3, 1979. Aarhus.

MÜLLER, S. 1919: Bopladsfund fra Bronzealderen. *Aarbøger for nordisk Oldkyndighed og Historie* 1919. Copenh.

THRANE, H. 1971: En broncealderboplads ved Jyderup Skov i Odsherred. *Nationalmuseets Arbejdsmark* 1971. Copenh.

– 1973: Lusehøj ved Voldtofte (*Vorläufiger Bericht über die Ausgrabung eines jungbronzezeitlichen Hügels in Voldtofte, Südwestfünen*). *Fynske Minder* 1973. Odense 1974.

– 1974: Hundredvis af energikilder fra yngre bronzealder (*Ein System von Herdgruben der jüngeren Bronzezeit auf Rønninge Søgård*). *Fynske Minder* 1974. Odense.

– 1975: Stenhøje fra bronzealderen. Grave fra en bronzealderbygd i Jyderup Skov, Odsherred. *Nationalmuseets Arbejdsmark* 1975. Copenh.

– 1979: Malede vægge. *Skalk* no. 3, 1979. Aarhus.

– 1980: Fem lerkar med korn. – Om baggrunden for de første udgravninger på Kirkebjerg i Voldtofte. (*Five grain vessels from Kirkebjerg at Voldtofte*). *Aarbøger for nordisk Oldkyndighed og Historie* 1980. Copenh. (1982).

WINGE, H. 1919: Dyreknogler fra Bronzealders Bopladser. *Aarbøger for nordisk Oldkyndighed og Historie* 1919. Copenh.