

A Viking-Period and Medieval Settlement at Viborg Søndersø, Jutland

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In 1981 and 1984–85 archaeological investigations were undertaken in Viborg, near the lake Søndersø. An urban settlement was discovered here dating from the period *circa* 1000–1300. The evidence of the excavations is important both for indicating well the scope for archaeological work in the area and for giving a basis for a new perception of the age and topographical development of the town.

INTRODUCTION

Viborg, once the seat of the North Jutish *thing*, and cathedral city since 1065, lies in the centre of Jutland at the crossing point of a number of the most important routes in central Jutland (including the Military Way), then as now. The town is situated on the west side of one of the subglacial stream valleys of the Ice Age, the mouth of which outside the town today is filled by the two lakes, *Viborg Nørresø* and *Søndersø*. In modern times these have been separated by a causeway built in the 1850's; previously the lakes were joined. In the post-glacial period the stream valley's sides were scored by transverse eroded valleys and by Danish standards the urban area is thereby markedly divided. However 1,000 years unbroken work at levelling the site has softened the uneven terrain to a degree.

Alongside the lakes is a relatively flat area, as there is in the area of the current town centre west of the cathedral, lying on a plateau above the subglacial valley. Between these quite even areas we find the subglacial valley's greatly corrugated sides. These have never been particularly densely settled, nor in recent times has been the flat land alongside the lakes.

Up on the plateau are the only preserved churches of the town, the cathedral and the Dominican cloister church, now the parish church. Here also are the preserved remains of a long series of late medieval stone

buildings (Krongaard Kristensen 1981). This is the area of the town where the earliest urban foundations have been sought (Levin Nielsen 1966, with references). Viking-period building plots were found in Store Sct. Peder Stræde in this area in the 1960's (fig. 1). However all the indications are that this Viking-period settlement is part of a major farm settlement and that urban settlement in this area began about the middle of the 11th century (Noe 1976 p. 59). The culture layer was thin and the extent of the early medieval settlement was small, and it has been supposed that the settled population of Viborg was quite small in this period (Levin Nielsen 1966 p. 154; 1968 p. 65).



Fig. 1. Viborg's Romanesque churches and the defences of 1151. The southernmost church lies outside the rampart and shows that the structure of the town may have been somewhat different before it was fortified. It is evident that many of the churches are located along the thoroughways in the eastern town. 1: the excavation of the Viking-period settlement in Store Sct. Peder Stræde; 2: the excavations by Viborg Søndersø.

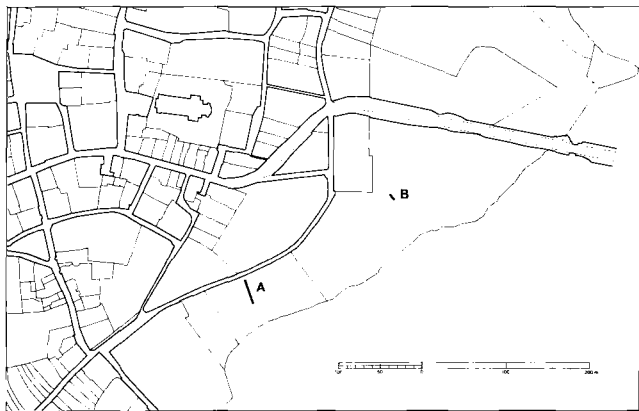


Fig. 2. Section of the Survey Map of 1866 with the locations of the sites dug in 1981. After Krongaard Kristensen 1982.

EXCAVATIONS 1981

In the meantime it has been clear for several years that in theories concerning the development of the town one ought to pay attention to special circumstances in the lower-lying part of the town alongside the lakes. In the late Middle Ages the town's Øster Algade, one of the

main roads of the town, ran here, probably at one time carrying all traffic from the north and south, east and west and drawing the old town along the west side of the lakes. It also transpires that possibly as many as seven of the town's twelve medieval parish churches were placed along this route (see fig. 1).

Out of the work of 'Projekt Middelalderbyen' on Viborg came several indications that the area down towards Viborg Søndersø should be subjected to more detailed scrutiny (1). Registration showed that in the course of time a number of loose finds had turned up in this part of Viborg, and core samples showed that the thickest culture layers in the town were here. When the project came to organize excavations it was therefore natural to give priority to the area alongside the upper Søndersø, and the investigation here was in fact one of Projekt Middelalderbyen's most productive.

A site was selected first which had not been built on in the last 200 years and where it was therefore considered possible to lay down a long trench through undisturbed layers out towards the lake (site A on fig. 2). However extensive levelling layers limited the length of the trench so that the lakeside areas were not touched

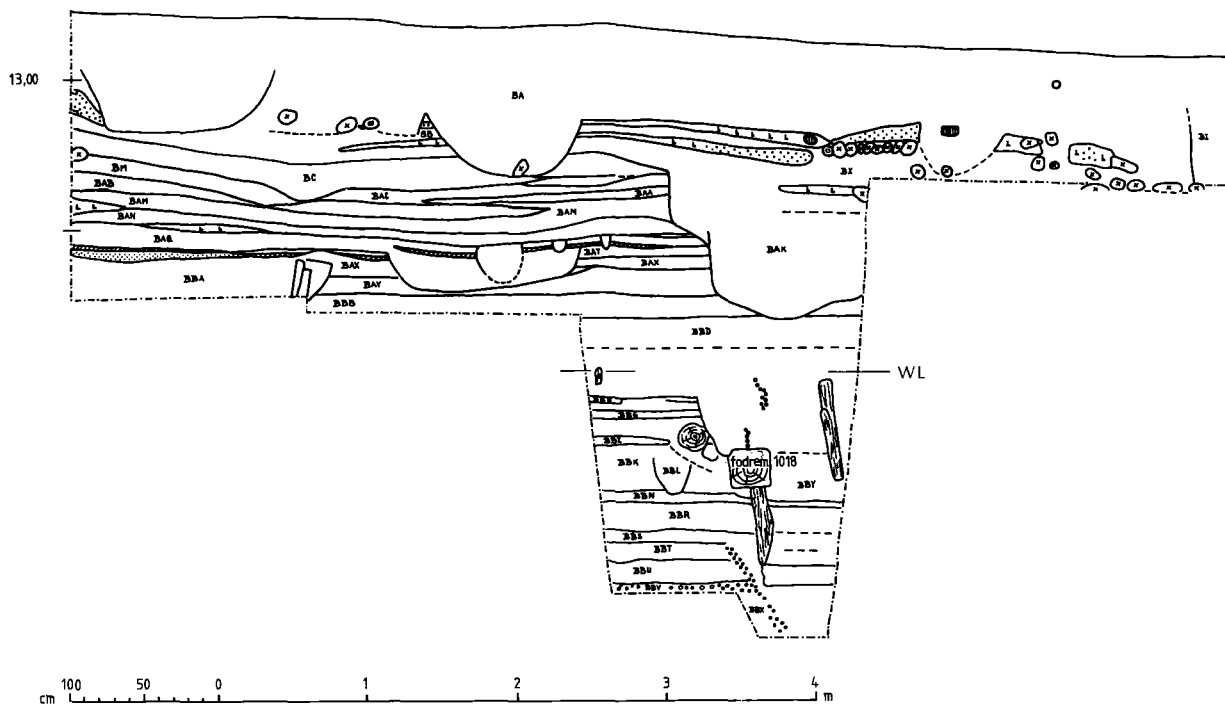


Fig. 3. Drawing of the northern section of site B, 1981. 69 separate layers were distinguished on the site. Many of these were of limited extent (hearths and floor patches) and do not therefore appear in the section. After Krongaard Kristensen 1982.

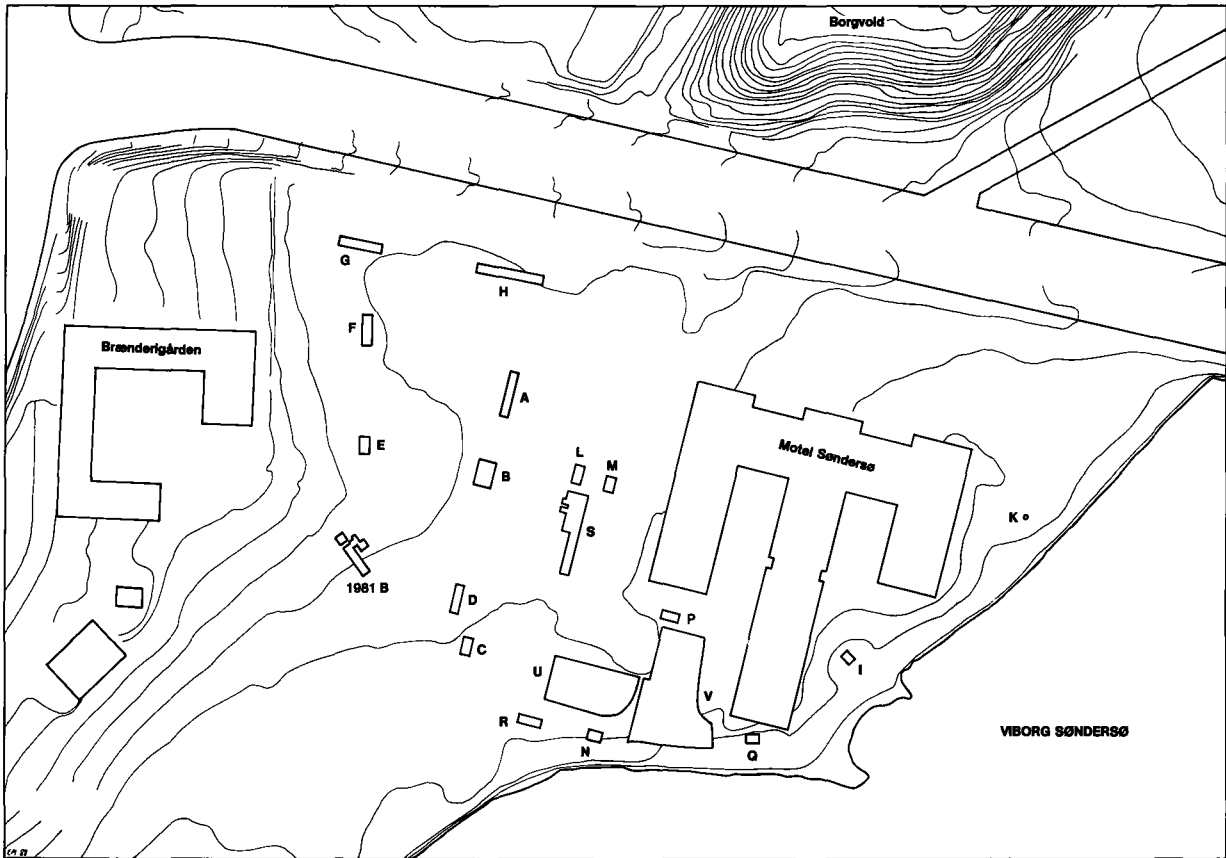


Fig. 4. General plan of the various sites dug. Site A, 1981, falls outside the map. Drawn onto a section of an aerial photographic survey of Viborg, Viborg kommune.

(2). Up by Riddergade bronzecasting industry from the 12th and 13th centuries was discovered. Further down towards the lake beneath a thick levelling layer a clay floor from the High Middle Ages was found. No particularly intensive settlement had taken place on this site which no doubt reflects the previously steeply sloping character of the area, now less marked thanks to up to 4 metres of levelling. But that the floor lay at the lake's current water level was an impetus for further studies.

For the next site a more even area east of Brænderigården, for centuries the easternmost holding of the town, was selected (site B on fig. 2). The results of the excavation were remarkable, giving a fairly certain picture of the development of the area despite the smallness of the site (fig. 3). Sometime around 1000 (perhaps in the end of the 900's) a layer of branches and faggots was first spread out over a meadow area and over that a layer of sand mixed with clay. This layer lies about 1.5

metres below the present level of Sønderse. The purpose of the branches and sand layer was to improve the ground on the site. It was not entirely clear whether the layer immediately above was a floor, but the next one up (BBT) was; and for the whole series of layers thereafter, the majority are floor layers, intermittently separated by demolition layers from burnt or collapsed buildings.

Three-quarters of a metre above the branch layer was found a sill beam of a building. The beam, which had rods in it around which was wattling, is dendrochronologically dated to 1018 (3). The latest building on the site had earthfast posts, between which was a base of poorly burnt tile. In the floor layer and the demolition layer of the building were found eight "civil-war coins", the latest of which was a Roskilde coin of Erik Menved (1286–1319) (4). This building from about 1300 was the last on the site, which has been open since then.

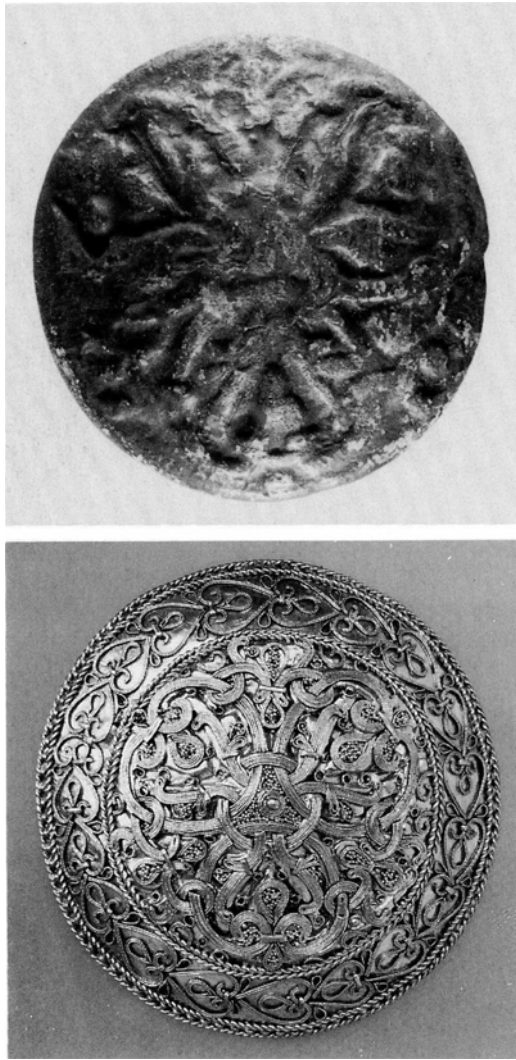


Fig. 5. The jeweller's patrix-die from Viborg and a gold ornament found at Hornelunde by Varde which was probably formed in some association with the patrix. The similarity is hidden a little by the filigree ornament which is soldered onto a gold plate, the middle zone of which was hammered out over the patrix. A closer examination shows that the pattern on the patrix is identical with that on the gold plate, although the goldsmith has not slavishly followed it when applying the decoration. The ornament is provided with a flat gold plate at the back so that one cannot test whether the patterns fit together. Drawings of the basic design on both the ornament and the patrix show however that a little twist in the tripartite composition is repeated on both pieces. Photo: Arne Vindum, Viborg Stiftsmuseum, and Lennart Larsen, The National Museum.

A number of hearths were located inside the excavated area: through several consecutive building phases the hearth has only been shifted within a small area. The sill beam of 1018 however shows that the buildings

do not lie on precisely the same lines through all of this 300-year period. On the other hand this beam lay parallel with the northern wall of the latest building, so it is nevertheless clear that quite fixed lot boundaries and street lines must have existed through the whole period on this site which determined the placement of the buildings.

The artefacts showed that at least in the first phase the settlement was a craft quarter. Shoemakers and combmakers especially were clearly represented by detritus from their crafts. There is thus a clear case for urban economy and urban settlement.

EXCAVATIONS 1984

With evidence for the existence of comprehensive culture layers in this area, Viborg Stiftsmuseum was able to go into action when in the spring of 1984 plans for the building of a hotel by the lake were put forward. As a result the municipality of Viborg financed a series of investigations in order to find out what the archaeological situation was on the proposed building site – and later to find possible alternative locations for the hotel. Thus during 1984 11 different sites in the area were dug (A-M on fig. 4). These were small sites of slightly varying sizes. Thick culture layers of an urban settlement were identified over an area which has been free of building through more than 500 years since. The water table has also risen together with the level of the lake so that the conditions for preservation, of organic material especially, are unusually good. Building remains were found in sites B, D, E, F, G and M.

In *site B* settlement began upon boggy ground. Above a thick natural peat layer a layer of small logs and substantial branches of birch and alder was laid out which in turn was again covered by a layer of sand. Over this a building was constructed the northern wall of which, at least, rested upon a sill beam (the other walls of the building were outside of the excavated area). The building is dated by dendrochronology to 1015 (5). Sawdust and flakes of antler which were found in a small hole (a posthole?) in the trodden earth floor of the building show that the building was used by a combmaker. In the demolition layer of this building an ornament patrix was found (fig. 5).

This building had no immediate successors: for nearly two centuries the place was open. Repeatedly re-

newed fences found on the site indicated a change in the structure of the locality. However there were undoubtedly buildings in the vicinity, and a thick layer of detritus, most of slags, showed that a coppersmith was resident nearby in the 12th century.

About 1200 the site was built upon again. The building from this phase was greatly disturbed and is difficult to date precisely. Despite the disturbance clear floor layers and traces of a hearth were found, and it could be demonstrated that the building was burnt.

It would be too much here to give more detail about all the excavated sites of 1984, but it may be mentioned that buildings with wattled walls were found on *sites D* and *F*. Remains of a stave-built building were found on *site G* (fig. 6). The walls were formed of thick, wedge-shaped, tongued-and-grooved planking.

Some geological data emerged from the investigations of 1984. At the eastern end of *site H*, in *site I* and *core sample K*, a subsoil of glacial alluvial deposits was discovered (at the 10.30, 10.40 and 10.70 contours respectively), and in *site M* the subsoil came right up to 12.30, 75 cm below the surface. In other places digging continued to the natural the base was peat, and on *site G* it was found that under the peat layer were deposits of lake marl. In the late glacial period there was probably an island in the subglacial valley around the area where the hotel was built and the area to the north where the medieval defence work Borgvold was placed. Thus in the post-glacial period a fen was formed between this island and mainland at the western side of the valley. This bog formed the ground for a great part of the settlement discovered.

Site C turned out to be a place which had earlier been under the lake, and was reclaimed in modern times. The site was dug by machine as the old lake bottom was quite saturated, but there were clearly well-preserved culture layers beneath this level. It is thus clear that in recent times the edge of the lake lay between sites C and D, but that before the water level in the lake was raised it lay further off from the town.

EXCAVATIONS 1985

With regard to the important culture layers in the area, in 1985 the hotel plans were altered so that the existing motel was developed and the new sections were constructed contiguous to the existing ones. In order to en-



Fig. 6. Section of a stave-built building on site G. The wall is seen from the inside, where two roof-bearing posts stand hard by the wall. A row of slender posts in the foreground may have bounded a wall bench. All timbers have rotted up at the original ground surface so that only the buried sections are preserved. Photo: the author, 1984.



Fig. 7. The wicker-lined well on site U. Two of the wooden planks in the bottom are dendro-dated to 1015 and 1017 respectively. Photo: the author, 1985.

sure that the new plans were acceptable in light of the archaeological interests (as they were thought to be) six trial trenches were dug (O-S on fig. 4). In these, culture

		A		B		C		D		total	reg.no.
layer no.		1	2	1	2	1	2	1	2		
Horizon V	BB		21	3			2		2	28	881D220
	BH		24	13						37	221
	BK		16	8						24	222
	BU		46	11					1	58	181
	BX	1	35	3						39	189
	BAK	4	89	5						98	223
	BC		133	62	6					201	197
Horizon IV	BL	5	7							12	224
	BF	2	112	5			1			120	201
	BE		1	1						2	225
	BD		27	1						28	186
	BG	1	126	2						129	226
	BM		143	2	1					146	211
	BO		2							2	227
	BAJ		5	3	2					10	228
	BAD	1	9							10	229
	BAH		7	4						11	230
	BAC		2							2	231
Horizon III	BAA	2	12							14	205
	BAB	1	42							43	232
	BAG		28	9						37	233
	BAM	13	129	1		1				144	212
	BAN	2	27	1						29	234
	BAQ	1	19						1	21	235
	BAR		1							1	236
	BAS		4							4	237
Horizon II	BAV	21	13							34	254
	BAX	225	231							456	185
	BAY	143	19				1			163	199
	BAZ	2								2	238
Horizon I	BBA	1	13							14	239
	BBB	13	1							14	240
	BBC	3								3	241
	BBD	5								5	242
	BBE	3	2							5	243
	BBF	21								21	244
	BBH	6								6	245
	BBG		10							10	246
	BBI	3	1							4	247
	BBM	7								7	248
	BBO	6								6	249
	BBR	24	2							26	250
	BBT	74								74	251
	BBY	11								11	192
	BBU	10								10	252
BBV	13								13	253	
BBX	7								7	191	
		631	1359	133	9	1	4		4	2141	

Fig. 8. Pottery diagram, site B, 1981. A1: reduced, soft-fired; A2: reduced, hard-fired; B1: oxidized, red-fired, lead glazed; B2: oxidized, red-fired, lead glazed and with pipeclay fabric; C1: oxidized with pipeclay fabric; C2: oxidized with pipeclay fabric and lead glaze; D1: almost stoneware, Pingsdorf ware; D2: almost stoneware, remainder.

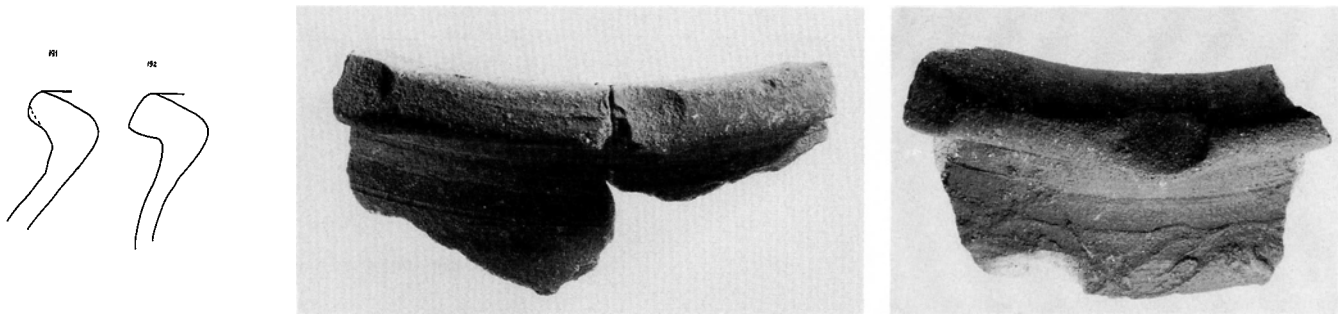


Fig. 9. Anglo-Saxon pottery, rim profiles (2:5) and photo (2:3).

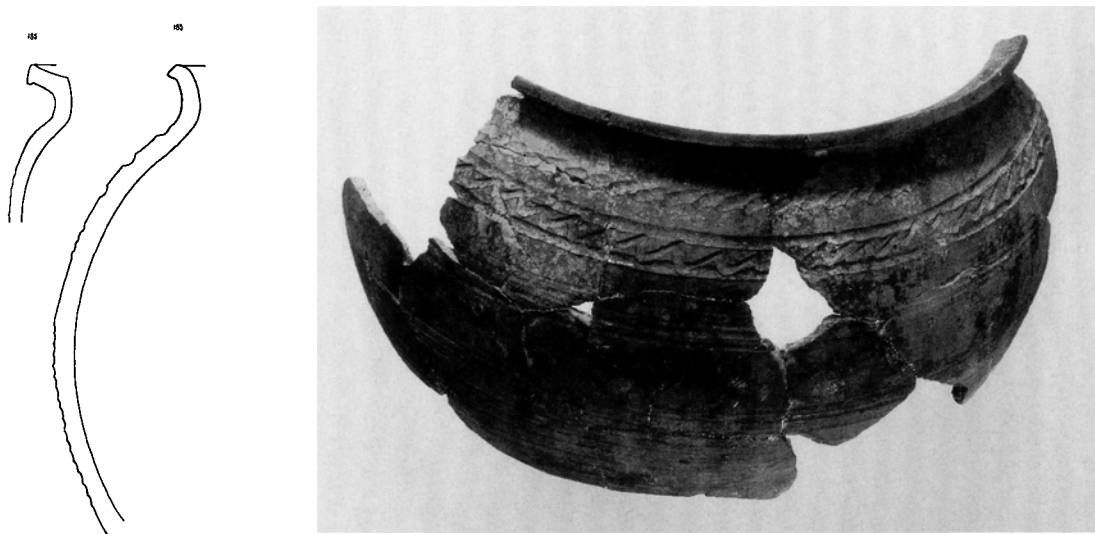


Fig. 10. Baltic ware, rim profiles and photo (2:5).

layers of interest were found only in site S. On this basis the proposed development was accepted with the condition that an archaeological excavation should precede. The excavation was carried out in the autumn of 1985 and comprised sites U and V.

To the north in *site S* were found remains of a structure which were probably fragments of a timber roadway. At the southern end were generally disturbed remains of a building from *circa* 1200. A fire had destroyed the building but it was rebuilt on the same site, in connection with which daub from the burnt building was simply levelled out on the burnt site and sealed with a new floor layer of clean clay. The burnt daub clearly showed that the building had been white-washed. A few traces of the hearth showed that this had been a covered oven, with a domed clay top over a circular, burnt clay base.

All of *site U* had been under water and much had been washed away: the natural was washed clean over most of the site. There was a comprehensive system of post-holes and a few surviving remains of the posts themselves. Without question they belong to repeatedly renewed fences. Within the site had been two or three wells, of which one, a wicker-lined well, was quite well preserved. Only one metre's depth remained, but a great deal of the top had been washed away after the inundation so that the original depth cannot be estimated (fig. 7).

On *site V*, the southern part had remains of several buildings. On top of a thick natural peaty soil a series of mats were laid out, formed of basketwork hurdles. Above this a thick layer of sandy soil of a very sterile character was deposited. The intention presumably was to prepare the site for building; a building, 4.5 m broad

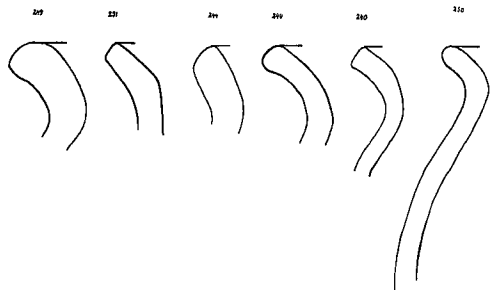


Fig. 11. Rim profiles of globular pots in phase I (2:5).

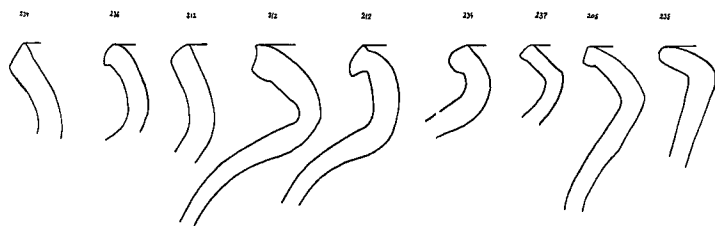


Fig. 13. Rim profiles of globular pots in phase III (2:5).

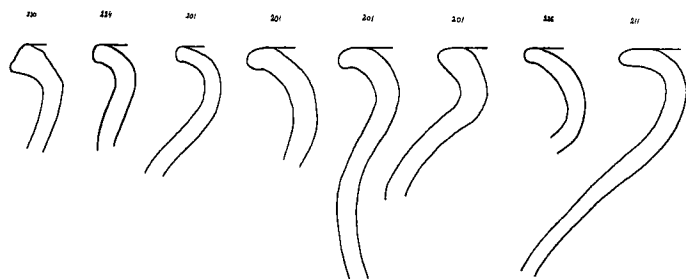


Fig. 15. Rim profiles of globular pots in phase IV (2:5).

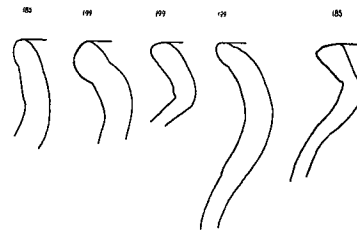


Fig. 12. Rim profiles of globular pots in phase II (2:5).



Fig. 14. Rim profile of bowl from phase III (2:5).

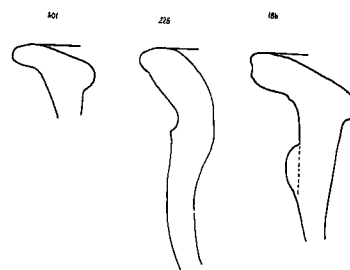


Fig. 16. Rim profiles of dishes from phase IV (2:5).

with a clay floor and wattled walls, was raised here. The dampness was clearly a constant problem on this site as, when a later building was constructed, a frame of untreated tree trunks filled with sand was laid out. Unfortunately the associated building was substantially demolished.

The earliest building of the early 11th century, of which only the northern part came into site V, was 4 m broad at the northern end and about 4.5 m broad in the middle. It lay in an area fenced off with basketwork hurdles which was traceable on three sides of the site: the plot was 14 m wide. When the later building mentioned here, also of the 11th century, was built, the placement of both buildings and fencing was altered.

Many artefacts were recovered from this site, such as

weights and heating plates. Besides this a great part of the finds consisted of organic material such as leather, rope and wood.

THE POTTERY

The excavations produced an important and substantial collection of pottery. Sherds from the most recent excavations are not yet fully processed, so the following account is based particularly on the excavation of 1981 (6). As far as can be seen, however, the material from the latest excavations corresponds closely to this material, although the quantity is very much greater.

The pottery from Viborg Sønderlø is important on

two levels. Firstly it gives quite a good local chronology for black ware in Viborg. Particularly with the globular pots, it is possible to follow development through 300 years.

Much more important however is the establishment of pottery securely dated to the 11th century from a Jutlandic settlement. What has been found shows that the overwhelming majority of 11th-century pottery is from globular pots. The same ware appears to be in use from 1000 to well within the 1100's, so that one cannot differentiate 11th- from 12th-century pottery. Remarkably there are no sherds of Viking-period hemispherical vessels, not even in the early 11th-century layers.

On site B of 1981, 69 different layers were distinguished, of which some were of limited extent and therefore not visible in the sections. 47 of these layers contained pottery. The volume of sherds varied greatly from layer to layer. In 14 of the 47 layers less than 10 sherds were found. No whole pots were found and only in a few cases could larger sherds be reassembled.

The 47 layers are arranged here into 5 phases (fig. 8). This organization is undertaken, amongst other things, because a number of the uppermost layers are of quite small horizontal extent and can therefore not be certainly located in a relative chronology against other layers within the phase. Thus the dividing lines are placed at BC and BAA, which for the most part run unbroken across the site.

Phase II is distinguished partly by forming a comprehensive series of layers and partly because here in layers BAV, BAX and BAY many Baltic-ware sherds were found, a ware which is otherwise almost unknown in other layers. Baltic ware has previously been found in Viborg, but must still be regarded as a rather rare type in the town.

Phase I. The lowest horizon includes many layers which belong to the period from *circa* 1000 to some point within the 12th century. Only small areas of these layers come into the excavated site, and apart from BBT (figs. 3 and 9) sherds appear only in small quantities in these layers.

The phase was characterized above all by soft-fired black ware, group A1. In the upper part of the horizon there was also a little hard-fired black ware, group A2. The distinction of soft- and hard-fired is admittedly relative, as sherds which are classified as group A2 in this phase are not entirely identical with the very hard-fired ware with a sandpaper-like surface which forms group

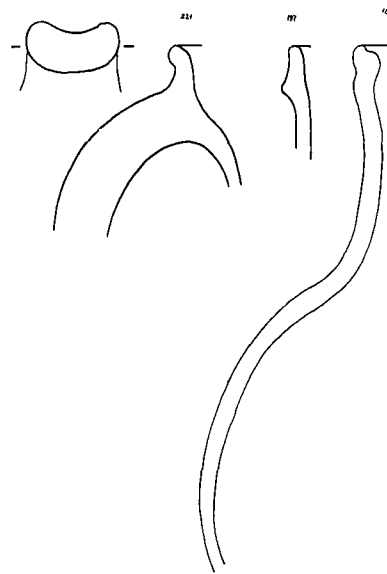


Fig. 17. Jugs from phase V. No. 181 is a black-ware jug from layer BU (2:5).

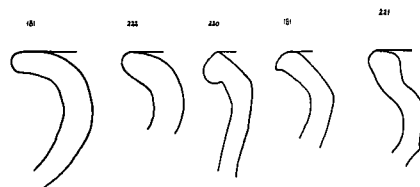


Fig. 18. Rim profiles of globular pots in phase V (2:5).

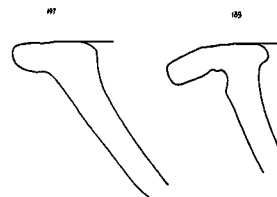


Fig. 19. Rim profiles (2:5) of dishes from phase V and photograph (2:3) of the rim (no. 189) with stamped decoration.

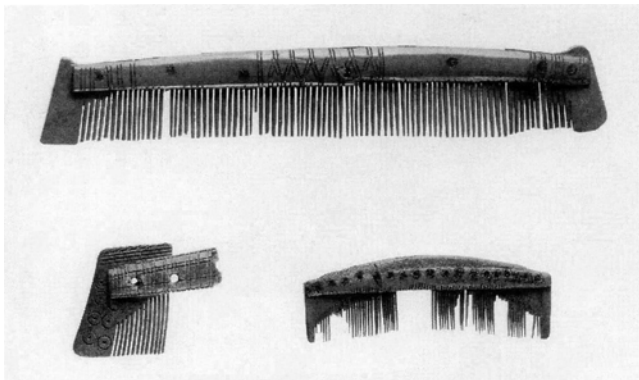


Fig. 20. Comb from the middle of the 11th century. Photo: Arne Vindum.



Fig. 21. Two top boots with laces from the 11th century. Photo: Preben Dehlholm, Moesgård.

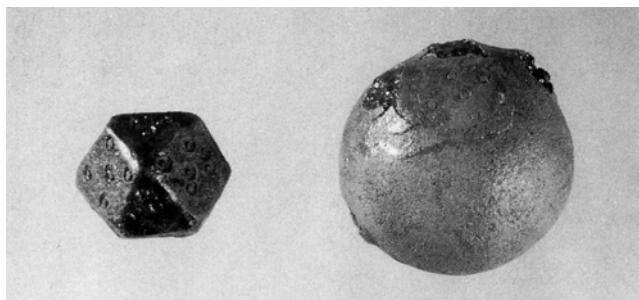


Fig. 22. Weights. An octahedron of bronze and a brass-inlaid iron weight. The two weights belong to different weight systems. Photo: Arne Vindum.

A2 in, for example, layer BC. On the other hand group A1, which here is described as soft-fired, does not include the coarse-tempered sherds of 'archaic character' which are known from the Viking Period.

Two characteristic rim sherds from large vessels with wide mouths were found in layers BBX and BBY (fig.

9). The rim is outturned, and has finger impresses at about 5 cm intervals. This type is believed to be Anglo-Saxon (7). Two further rim sherds of the same type were found in the 1985 excavations.

The other rim forms are slightly outturned, and the sherds must come from globular pots (fig. 11). Rims from hemispherical pots were not found (nor in the later excavations), although this pottery is quite dominant in most of Jutland in and before the 10th century.

Phase II. This phase includes only a few layers. Conversely the volume of pottery is quite large. However a lot of the sherds have been assembled into larger sherds from a smaller number of vessels which were found on the one burnt site. This includes, amongst others, at least 6 Baltic-ware vessels. The pots were carefully made and very confidently decorated. The form and decoration correspond closely to late Slavic vessels of Type Vipperow (fig. 10) (8). The professional finish makes it reasonable to interpret these as imports from Slavic areas. They were certainly not made in Viborg. A few other Baltic-ware vessels however are of a very different, coarse finish and decoration. Baltic-ware was also found in layers of the early 12th century in the later excavations, but not in the same concentration as in 1981.

This phase also included sherds of globular pots corresponding to the pots of phase I (fig. 12). The rim is slightly outturned, the colour grey-black, but very uneven. The pots are coarse-tempered, and formed by hand. The rim however is reworked. It is not possible to differentiate the globular pots from phases I and II.

Phase III. The layers run consistently over the whole of site B and are horizontally deposited. The phase is characterized by black-fired globular pots. Some of the pots have faceted rims (fig. 13). The ware is fine-tempered, and the pots seem to have been formed on a fast wheel. Not all pots were regular globular pots: in layer BAN a pot with a convex base was found.

Fabric type A1 is still represented in this phase. This could be caused by residual material from earlier layers, or by the existence of ceramics of a more 'domestic-craft' character alongside the professional products.

In layer BAB a single rim sherd of a large, black-ware dish was found (fig. 14). The sherd is very thick and has a very rough surface.

In the upper layers of this horizon are found the first glazed sherds. These are red-fired jugs with finger im-

presses along the foot. The phase cannot be precisely dated, so one cannot say exactly when the glazed jugs appear in Viborg. Probably it was in the beginning of the 13th century.

Phase IV. This phase comprises many small layers, and certainly represents no very long period. Most of the pottery is hard-fired black ware with a sandpaper-like surface. Most sherds of this are from globular pots (fig. 15). A few of these have wavy lines on the body. Rim sherds from three dishes are also included (fig. 16). One dish has a collar with finger-impress just below the mouth. The dishes are types which have previously been recognized in Viborg and Århus (Andersen, Crabb and Madsen 1971, 90f; Seeberg 1962, 99).

Glazed pottery, from jugs, is found in most layers, but always in small quantities. Three glazed sherds have pipeclay decoration.

Phase V. The uppermost horizon comprises many small layers, apart from layer BC which covers almost the whole site and separates phases IV and V. There seems to be rather more glazed pottery in this phase than in the previous. But the black ware still dominates. Here this ware is almost light grey. The unglazed black-ware jug is also found in this phase (fig. 17). Dishes and globular pots have received a rounded profile (fig. 18). This feature also holds for pots in the uppermost layers of phase IV. The rim of one dish and a body sherd from a globular pot are stamp-ornamented (fig. 19).

From the coins found this phase must be dated to the end of the 13th century and the period around 1300.

OTHER ARTEFACTS

The finds in this category are not yet fully processed and only general aspects of the material shall be indicated here. After the pottery, the largest class of finds is antler and bone offcuts and manufactured goods. Antler is dominant here, and combs the most common product (fig. 20). The detritus is found in great quantities, and the size of the cast-off pieces indicates that the raw material was in copious supply in the earliest period. Supplies of deer antler clearly became sparser as time went on, and in the course of the 13th century, the comb-makers went over to use bone instead.

A third large group of finds is leather offcuts and products, especially shoes. The detritus shows how the material was used, both the newly-tanned hides and the

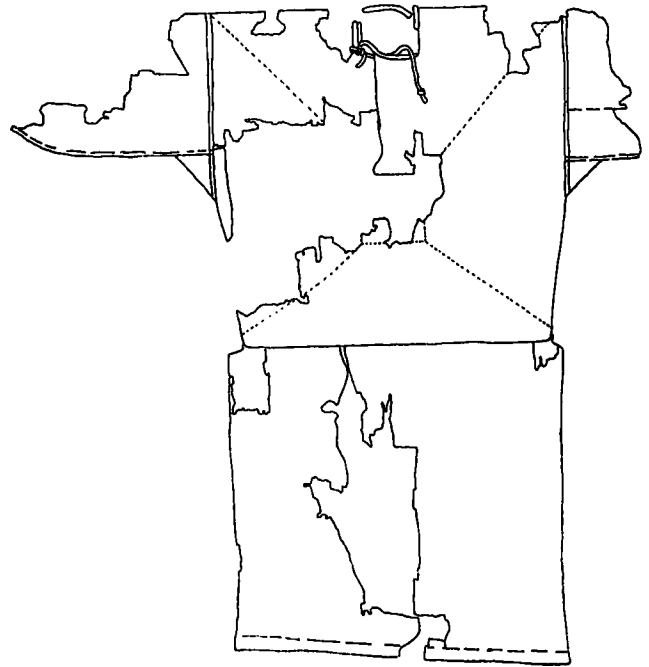


Fig. 23. Linen shirt from the middle of the 11th century. Photograph of texture and drawing of the front. Drawing and photo: Eli Andersen (photo 2:1).

secondhand leather artefacts which could be re-used. The completed shoes can tell of the types in use and of changing fashions (fig. 21).

Not a great deal of textile was found in the excavations; as a rule only small fragments. But remains of an almost whole linen shirt were found (fig. 23) (9).

Other crafts are represented by the finds albeit with smaller amounts of detritus. For example the turner has made small wooden bowls, and as waste from this characteristic lathe cuttings are found. There are also various metalworkers. The goldsmith's patric-die has al-

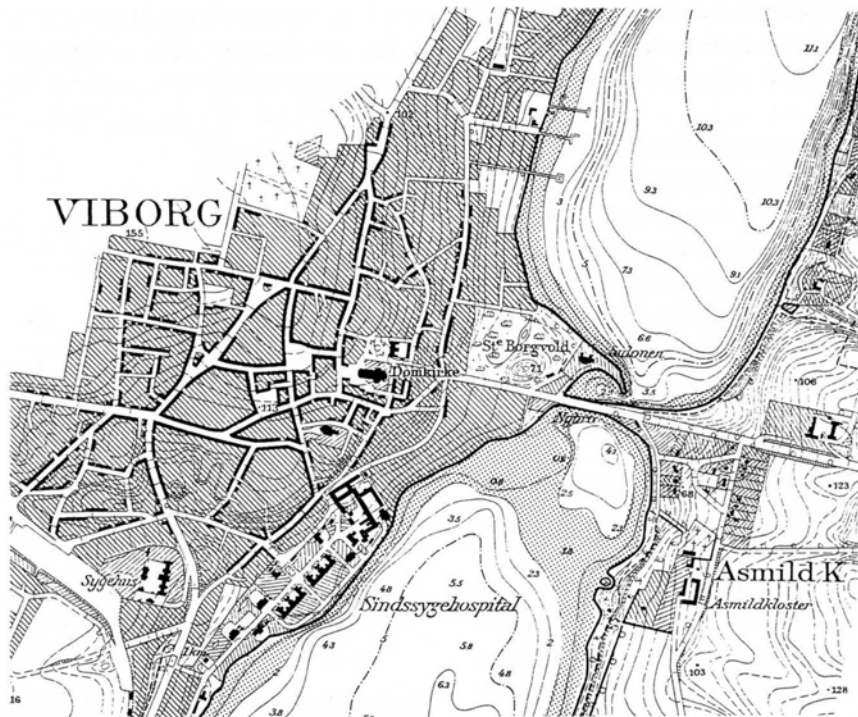


Fig. 24. Chart of the Viborg lakes with depths shown. Because of the damming there is today a drop of 2.2 m by Søndermølle at the outlet from Søndersø. If the water level in the lakes were reduced by 2 m, the area of the lake would be a little smaller, and between the excavated area and Asmild cloister a broad spit would stand clear, as marked upon the chart. Section of the Geodætisk Institute's detail map of Viborg Nørre- and Søndersø, 1934. After Krongaard Kristensen 1985.

ready been mentioned (fig. 5). Further finds include a number of heating plates employed in precious metalwork. The bronzecaster left behind small crucibles and broken moulds.

Some finds show trading contacts. The tools of trade itself are represented by finds of balance-arms and weights. The weights are few in number, but both an octahedron of bronze and a brass-inlaid iron weight have been found (fig. 22).

Imported goods include whetstones, soapstone vessels and quernstones presumably from Norway, western European and Egyptian glass, and pottery from England, the Rhineland and Baltic areas. Amongst the coins are several German examples (10). The foreign objects are of course not always evidence of direct contact between Viborg and the places concerned, but they show that foreign wares left a creditable mark upon the town, which must have been mediated by some form of trade.

THE DAMMING OF THE LAKE AND THE EARLY TOPOGRAPHY OF THE TOWN

The investigations have shown that there was an urban settlement in Viborg about the year 1000, with closely spaced buildings and craft activities. The extent of the settled area is not known, but traces of structures are found over a substantial area in the vicinity of Viborg Søndersø (see figs. 2 and 4).

In certain places settlement began at a level which is 1.5 m below the present level of the lake. Similarly the excavation of sites U and V showed that parts of the settled area had been flooded. The settlement remains must run on some way under the lake.

Thus a marked rise in water level has been seen in the lake. How great a rise cannot be precisely determined from the archaeological studies undertaken to date. By the outlet from Viborg Søndersø there stands a mill, Søndermølle, where today there is a drop of 2.2 m. Presumably the drop is the same height as the dam which was constructed in the Middle Ages.

Both Viborg Søndersø and the contiguous Nørresø are quite deep, so that even before the damming there were two large lakes. At many places along the lakes there is no very great difference between the present water edge and that that one would have if the level were 2 m lower. There is however one place – right outside the excavated area – where the situation would be radically changed with a lower water level. As fig. 24 shows a 2 m lower level would leave a tongue of land about 100 m broad across the lake. Naturally the raising of the water level has itself affected the submerged land forms, but the tongue crossing the lake seems to marked that it must be presumed to reflect some original situation. Before the damming the lakes were probably divided by this broad spit and conversely connected by a little watercourse.

The existence of this tongue opens the possibility of a road connection east from Viborg: the little watercourse between the lakes can have been no great obstacle. Thus the location of Asmild church at the east side of Søndersø right opposite Viborg is explained. The original basilican church from *circa* 1100 from the outset lay at the edge of Viborg town, about 15 minutes' walk from the cathedral. Asmild church and the later cloister, together with the old Bishop's palace in Asmild east of the church thus originally were closely connected to Viborg. Only after the lake was dammed up and the roadway between Viborg and Asmild flooded did the cloister come to be eccentrically located relative to the town.

The postulated road east has not yet been confirmed by excavation but the road is probably the true basis for the location of this quarter of the town. As has been demonstrated in several places the physical starting-point of the settlement was not especially favourable: the wet areas required the expenditure of extra labour before the ground was fit. The site must have been attractive for some other reason: for example because of its good situation for communications. As mentioned before there was an important north-south routeway in the eastern part of the town. The crossing point of the north-south and east-west roads probably lay at the south-western corner of Brænderigården, whence still in the last century a road ran east to the ferry point for a connection to Asmild.

This crossroads at Brænderigården is probably the cause of the late Viking-period settlement in Viborg. Here was a tolerably firm building area, but rapidly in

the beginning of the 11th century it was necessary to bring the damper areas to the east into the expanding town. Most probably the first urban settlement in Viborg was formed in the late 900's around this crossing point.

WHEN WAS THE LAKE DAMMED UP?

We still have no secure dating for the damming. Søndermølle, where the lake was dammed, is first mentioned in 1488 but can easily be much earlier. According to the investigations reported here, the settlement was abandoned about 1300, and the reason was presumably that the water level had risen so that some of the settlement was drowned and some deteriorated because of the higher water table. On top of this the routeway eastwards was destroyed so that the favourable position for traffic was no more.

The damming was a serious development, and one is reluctant to believe that it happened solely in order to establish a water mill. To say the least the mill cannot have been established with particular regard to the burgers of Viborg since the road connection to it was lost with the damming.

Perhaps the damming is connected with a serious event in the year 1313. In this year open strife broke out in Jutland, fostered by men of first rank and leading farmers at the *thing* in Viborg (Hørby 1977, 124–9). The uprising was suppressed, not without difficulty, by King Erik Menved with the help of German mercenaries. To prevent recurrences, in the same year, some new fortifications were founded in North Jutland, including one in Viborg which was placed close by the Nørresø – see A. N. Jaubert, this volume. The rampart Borgvold just north of the excavated area is a memorial of the fortification (11). Perhaps the lake was dammed in order to bring water into the moat around the fort. Since the fortification was undertaken in an abnormal political situation, the king could well have taken a long view of the burgers' rights (12).

Whatever the reasons were, and whenever the events took place, it is clear that a quarter of the town of Viborg from the late Viking Period and early Middle Ages disappeared. The inhabitants moved – gradually or at once, we don't know – but we do know where they went. The defences of the town of 1151 (cf. fig. 1) were laid out according to the defensible properties of the natural

terrain rather than according to the settled area, so that while some area of settlement to the south may have been excluded there was plenty of space within the ramparts to the west and north. Only after *circa* 1300 was there settlement in the outermost streets to the west and north. Here, probably, the burgers from Sønderø found themselves.

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NOTES

Preben Dehlholm produced the photographs of the pottery (1982) and Joan Nielsen drew the profiles of the vessels' rims (1982).

1. Olaf Olsen has given an account of the goals and methods of the project in the foreword to the project's local publication, see e.g. Krøngaard Kristensen 1987, 5–7.
2. The trench was largely dug by machine. The excavations in 1981 were undertaken by stud.mag. Jesper Hjeremind and the author.
3. 1081 ± 1 A.D. The dating was undertaken by the Wormianum laboratory.
4. The coins are identified by Jørgen Steen Jensen, Den kgl. Mønt- og Medaillesamling.
5. The date is taken from a section of timber with surviving bark found in the settlement layer immediately under the clay floor of the building. The dating was undertaken by the Wormianum laboratory.
6. The pottery from here is published in Krøngaard Kristensen 1982. All the ceramic finds are dealt with in a specialist dissertation in Medieval Archaeology of Århus University in 1987 by Jesper Hjeremind: *Keramik fra udgravningerne ved Viborg Sønderø 1981–1985*.
7. The sherds are of the late phase of Anglo-Saxon pottery, known as Saxo-Norman pottery, and seem to be most like the Torksey type. Hurst 1976, 326–7.
8. The pottery appears to belong to Reihe 1 of the Vipperow group. Schuldt 1956, 44–9.
9. The shirt was found crumpled up in a posthole. In the course of time the material has been broken in many places, where it was folded. Conservation and restoration is not yet completed (Fentz 1989).
10. Magdeburg bracteate, archbishop Wichmann (1152–1192); probably Erfurt bracteate, archbishop Adalbert II (1137–1141); Osnabruck, bishop Konrad I of Rietberg (1270–1297). The coins were identified by Jørgen Steen Jensen, The Royal Coin Cabinet, Copenhagen.
11. A stake removed from beside the entrance way to Borgvold is dendro-dated to 1314. Velle 1985, 76–8; Krøngaard Kristensen 1987, 35–6.
12. The new interpretation was first published in Krøngaard Kristensen and Velle 1982. It was subsequently expanded in Krøngaard Kristensen 1987. The book is provided with an English summary.

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